The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Action Plan

Ref no: NS 278 (original AP unable to be found, contents taken from Risk and Governance audit report)

Clinical Audit Title	Review of patching Chiari malformations intra-operatively versus not patching		
Date audit complete		**Date action plan completed**	
Auditor		**Name of policy / guideline**	
Division	Neurosurgery	**Source of policy / guideline**	

Audit Rationale:
Please summarize the rationale of the audit for the members of the Clinical Audit Group (please limit to one or two sentences)

Summary of Findings:
Please concisely state the main conclusions of the project using bullet points

- Patients who had a patch after a chiari decompression spent less time in hospital and had fewer complications / further surgery
-

Key success:
Please concisely state the key success identified by the project – if none identified please state N/A

- That there was a difference between those that were patched and those that weren't
- Finds written up and submitted for publication (awaiting reviewers commetns)

Key concerns:
Please concisely state the key concerns identified by the project using bullet points– if none identified please state N/A

- *N/A*

Recommendations discussed:
Please concisely summarise the recommendations that were discussed following the completion of the project

- That the project supports patching of Chiari patients routinely. One other surgeon has changed to this technique, the other who does Chiari decompressions, is considering it,

Presentation / Dissemination of Project
Date findings were presented / disseminated:
Department where discussed or presented:

Actions agreed following recommendations discussed:-
**Please ensure each action has a named lead, timescale and reportable group stated on the action plan below. Please list the evidence of the action implementation e.g SOP, protocol, standardised template, presentation or meeting minutes etc*

Issue	Action required	Named lead for action	Timescale	Evidence	Reportable to (group/meeting)
1)					
2)					
3)					

Re-audit date _____ **If no re-audit planned please give reasons why?** _____

Will this be an on-going audit? Yes ☐ No ☐

Are there any potential barriers / problems to prevent the implementation of the above actions? Yes ☐ No ☐

If yes to the above please state who the issues have been referred to:

Name _____ **Designation** _____ **Date referred** _____

Signature:_____ **Date:**_____

Have any issues been logged on the risk register? Yes ☐ No ☐ N/A ☐
Please provide details of issue(s) logged on the risk register:

The Walton Centre NHS Foundation Trust

Project Prioritisation Assessment Tool

Audit title: Review of patching Chiari malformations intra-operatively versus not patching

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-

Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume		(x2)
High risk		(x3)
Known quality issue		(x3)
Wide variation in practice		
NICE / NCEPOD related audit		(x3)
Defined measurable standards available		
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**0c**	

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit** ☒ **Service Evaluation** ☐

Audit / Service Evaluation Title: Review of patching Chiari malformations intra-operatively versus not patching

Division: Neurology ☐ Neurosurgery ☒ Please specify department Click here to enter text.

Project Lead:

Contact No: Bleep No: Click here to enter text.

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)
Click here to enter text.

Background / Rationale

There is a recent metatanalysis which suggests that patching the dura as part of a post fossa decompression is superior to leaving the dura open. Traditionally the technique of choice at the Walton Centre has been to leave the dura open. One surgeon changed his practice 2 years ago, and is trying to convince the other surgeons to do likewise. This project will aim to establish whether there is any benefit to patching the dura in patients at the Walton Centre.

Methodology

The patients from one surgeon who have undergone first line Chiari malformation surgery in the past 5 years will be examined. Patient demographics, length of stay, complications, and outcomes will be examined by looking at EP2 surgical, inpatient, and outpatient records. Associated COMI scores from spine TANGO will also be examined. A comparison of those that had the dura left open and those that were patched will be performed.

Aims / Objectives

To establish whether there is any benefit to patching the dura during Chiari malformation surgery in our patient cohort.

Standards / Criteria Details (service evaluation N/A)

There are no published standards, although complication rates of >25% have been published from the Walton Centre previously.

Guideline / Standards available: Yes ☐ No ☒

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: Click here to enter text.

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐

Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☐ No ☒

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☐	No ☒
High cost	Yes ☐	No ☒
Known quality issue	Yes ☐	No ☒
Wide variation in practice	Yes ☐	No ☒

Sample No: about 50 Procedure codes to identify sample: sample already found

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☐ No ☒

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Is Clinical Audit Team support required? Yes ☒ No ☐
If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

_Depending on the availability of information from the electronic patient record, some case notes may be required.

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*
Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date:15/12/19

Anticipated project completion date: 25/1/20

Anticipated Action Plan Submission date: Click here to enter text.

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Action Plan

Ref no: NS 279

Clinical Audit Title	Horsley ITU compliances with guidelines for best practice for care of NGT during enteral feeding and route for medication administration.		
Date audit complete	2019	**Date action plan completed**	
Auditor		**Name of policy / guideline**	Reducing harm caused by misplaced nasogastric feeding tubes in adults, children and infants.
Division	HITU	**Source of policy / guideline**	NPSA.

Audit Rationale:
Please summarize the rationale of the audit for the members of the Clinical Audit Group (please limit to one or two sentences)
Currently I am undertaking an Msc programme in Advanced Healthcare practice, back in 2017 for one of my module I had to undertake a clinical audit and critically evaluate the audit to meet specific learning outcomes. I decided to undertake an audit looking at compliance of trust and national standards with checks of NGT positions and pH test during enteral feeding and medication administration. In accordance to the action plan of this audit, a further audit needs completing to review compliance of trust and national standards.

(Previous audit conducted results: Overall findings were satisfactory however compliance fell down when documenting checking the NGT prior to administration to feed or medication with 1 out 10 audited charts not completing this documentation. Also 2 out of the 10 audited charts didn't have documentation that pH of aspirations obtained was checked.)

Summary of Findings:
Please concisely state the main conclusions of the project using bullet points

- *1. NGT position at nose documented and which nostril- 100% compliance.*
- *2. NGT position checked when starting feed and in same position- 100% compliance.*
- *3. NGT position checked before administrating medication and in same position- 100% compliance.*
- *4. NGT aspirate checked- 100% compliance.*
- *5. Aspirate pH checked- 90% compliance.*

Key success:
Please concisely state the key success identified by the project – if none identified please state N/A

- Improvement in compliance since first audit
-

Key concerns:
Please concisely state the key concerns identified by the project using bullet points– if none identified please state N/A

-

Recommendations discussed:
Please concisely summarise the recommendations that were discussed following the completion of the project

- This audit has completed.
- A regular audit is completed as part of the critical care network audits.

Presentation / Dissemination of Project
Date findings were presented / disseminated: 2019
Department where discussed or presented: Horsley ITU

Actions agreed following recommendations discussed:-
**Please ensure each action has a named lead, timescale and reportable group stated on the action plan below. Please list the evidence of the action implementation e.g SOP, protocol, standardised template, presentation or meeting minutes etc*

Issue	Action required	Named lead for action	Timescale	Evidence	Reportable to (group/meeting)
1)					
2)					
3)					

Re-audit date _____ **If no re-audit planned please give reasons why?** _____

Will this be an on-going audit? Yes ☐ No x☐

Are there any potential barriers / problems to prevent the implementation of the above actions? Yes ☐ No x☐

If yes to the above please state who the issues have been referred to: **Name** _____ **Designation** _____ **Date referred** _____ **Signature:**_____ **Date:**_____8/7/22_____
Have any issues been logged on the risk register? Yes ☐ No ☐ N/A ☐ **Please provide details of issue(s) logged on the risk register:**

Project Prioritisation Assessment Tool

Audit title: Horsley ITU compliances with guidelines for best practice for care of NGT during enteral feeding and route for medication administration.

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-
Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume		(x2)
High risk		(x3)
Known quality issue		(x3)
Wide variation in practice		
NICE / NCEPOD related audit		(x3)
Defined measurable standards available		
Re-audit / repeat service evaluation	y	(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**2c**	

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit** ☒ **Service Evaluation** ☐

Audit / Service Evaluation Title: Horsley ITU compliances with guidelines for best practice for care of NGT during enteral feeding and route for medication administration.

Division: Neurology ☐ Neurosurgery ☒ Please specify department Horsley ITU

Project Lead:

Contact No: **Bleep No:** Click here to enter text.

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)
Click here to enter text.

Background / Rationale

Currently I am undertaking an Msc programme in Advanced Healthcare practice, back in 2017 for one of my module I had to undertake a clinical audit and critically evaluate the audit to meet specific learning outcomes. I decided to undertake an audit looking at compliance of trust and national standards with checks of NGT positions and pH test during enteral feeding and medication administration. In accordance to the action plan of this audit, a further audit needs completing to review compliance of trust and national standards.

Methodology

To monitor staff compliance with checks of nasogastric tubes positions and pH tests in accordance to guidelines and polices following a previous audit

Aims / Objectives

To monitor staff on Horsley ITU compliance with documentation of nasogastric tube position checks and aspirate pH levels prior to use.

Standards / Criteria Details (service evaluation N/A)

Standards are set out in trust SOP of nasogastric feeding and in the NPSA guidelines 'Reducing harm caused by misplaced nasogastric tubes in adults, children and infants.' My criteria would be a sample of 10 patients in critical care who have a nasogastric tube and are being fed via the nasogastric tube.

Guideline / Standards available: Yes ☒ No ☐

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: Reducing harm caused by misplaced nasogastric feeding tubes in adults, children and infants.

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☐ Other ☐ State other: NPSA

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☒ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☐	No ☒
High cost	Yes ☐	No ☒
Known quality issue	Yes ☐	No ☒
Wide variation in practice	Yes ☐	No ☒

Sample No: 10 **Procedure codes to identify sample:** Click here to enter text.

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☐ No ☒

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☒ No ☐

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Is Clinical Audit Team support required? Yes ☐ No ☒
If yes, please specify type of assistance required:
- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)
- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*
Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date: Click here to enter text.

Anticipated project completion date: Click here to enter text.

Anticipated Action Plan Submission date: Click here to enter text.

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)*** Date: 21/12/2019

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Action Plan

Ref no: NS 281

Clinical Audit Title	VTE pharmacological prophilaxis prescribing in neurosurgical patients		
Date audit complete	03/03/2020	**Date action plan completed**	10/03/2020
Auditor		**Name of policy / guideline**	VTE Policy
Division	Neurosurgery	**Source of policy / guideline**	

Summary of Findings:

Please concisely state the main conclusions of the project using bullet points

- *Failure to prescribe pharmacological prophylaxis in neurosurgical patients was identified in 9.8% of our patients*
- *Improved compliance with policy on pharmacological VTE prophylaxis is necessary*

Key success:

Please concisely state the key success identified by the project – if none identified please state N/A

- **Clear identification that there is a failure (9.8%) to prescribe pharmacological VTE prophylaxis in neurosurgical patients when this is clearly indicated.**
- **Establishing the need for better compliance and clearer pharmacological VTE prophylaxis policy**

Key concerns:

Please concisely state the key concerns identified by the project using bullet points– if none identified please state N/A

- *Deviation from the previous VTE prophylaxis hospital policy.*
- *Non-compliance with the VTE policy of 9.8 % was recorded.*
- *Failure to prescribe pharmacological VTE prophylaxis may have catastrophic consequences for our patients.*

Recommendations discussed:

Please concisely summarise the recommendations that were discussed following the completion of the project

- Auditing a new VTE prophylaxis policy to see if there are any improvements in the compliance.
- Clear guidelines published and available.
- Patients, unless clearly contraindicated, should have VTE pharmacological prophylaxis prescribed.
- Discussion with the team involved responsible for individual patient care in cases which may be controversial; review of the documentation and a clear plan in the notes.
- Familiarising staff, doctors and pharmacists with the new VTE policy.

Presentation / Dissemination of Project
Date findings were presented / disseminated: 13/03/2020

Department where discussed or presented: Neurosurgery

Actions agreed following recommendations discussed:-
**Please ensure each action has a named lead, timescale and reportable group stated on the action plan below. Please list the evidence of the action implementation e.g SOP, protocol, standardised template, presentation or meeting minutes etc*

Issue	Action required	Named lead for action	Timescale	Evidence	Reportable to (group/meeting)
1) Insufficient compliance with the previous VTE prophylaxis policy.	Application of the new VTE prophylaxis policy. Re-auditing the results and the compliance.		1 week	*Enclosed*	NS governance and risk
2)					
3)					
4)					

Re-audit date 18/03/2020 **If no re-audit planned please give reasons why?** _____

Will this be an on-going audit? Yes ☐ No **X**☐

Are there any potential barriers / problems to prevent the implementation of the above actions? Yes ☐ No **X**☐

If yes to the above please state who the issues have been referred to:

Name _____ **Designation** _____ **Date referred** _____

Signature:_____ **Date:**_____

Have any issues been logged on the risk register? Yes ☐ No ☐ N/A **X**☐

Please provide details of issue(s) logged on the risk register:

The Walton Centre NHS Foundation Trust

Project Prioritisation Assessment Tool

Audit title: VTE prophilaxis prescribing in neurosurgical patients

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-
Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume	y	(x2)
High risk		(x3)
Known quality issue	y	(x3)
Wide variation in practice	y	
NICE / NCEPOD related audit	y	(x3)
Defined measurable standards available		
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**9c**	

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit** ☒ **Service Evaluation** ☐

Audit / Service Evaluation Title: VTE prophilaxis prescribing in neurosurgical patients

Division: Neurology ☐ Neurosurgery ☒ Please specify department Click here to enter text.

Project Lead: Davor Dasic

Contact No: **Bleep No:** Click here to enter text.

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale

This project is focused on the current neurosurgical compliance with the hospital policy and guidance in prescribing VTE prophylaxis. We have noticed that some patients do not receive appropriate VTE prophylaxis, including Dalteparin. There seems to be a deviation from the hospital VTE Policy.

Methodology

Retrospective study. The data will be collected from the JAC system, Ep2 and our clinical notes.

Aims / Objectives

We aim to look into reasons why some neurosurgical patients have no VTE / Dalteparin prescribed and identify relevant issues. We aim to address the factors leading to the non-compliance. After that we will complete the re-audit to check if the compliance has improved. Our aim is to reach 100% compliance.

Standards / Criteria Details (service evaluation N/A)

The Walton Centre VTE Policy guidelines

Guideline / Standards available: Yes ☒ No ☐

If yes, please attach a copy or provide web link to the most current version: The Walton Centre VTE Policy

Name of Standard / guideline: VTE Policy

Source of Standard / guideline: NSF ☐ NICE ☒ Royal College ☐
Trust ☒ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☒ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☒	No ☐
High cost	Yes ☐	No ☒
Known quality issue	Yes ☒	No ☐
Wide variation in practice	Yes ☒	No ☐

Sample No: Click here to enter text. **Procedure codes to identify sample:** Click here to enter text.

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☐ No ☒

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Rolling programme duration (number of years): Click here to enter text.

Is Clinical Audit Team support required? Yes ☐ No ☒

If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*

Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date:15/01/2020

Anticipated project completion date: 22/01/2020

Anticipated Action Plan Submission date: Addressing compliance and implanting relevant changes within a week.

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)*** _____ Date: 09/01/2020

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☒ No ☐

Project Prioritisation Assessment Tool

Audit title: Staff Education around Point of Care Testing for INR and development of SOP

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-
Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume		(x2)
High risk		(x3)
Known quality issue		(x3)
Wide variation in practice		
NICE / NCEPOD related audit		(x3)
Defined measurable standards available	Y	
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**1**	

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit** ☐ **Service Evaluation** ☒

Audit / Service Evaluation Title: Staff Education around Point of Care Testing for INR and development of SOP

Division: Neurology ☒ Neurosurgery ☒ Please specify department **Critical Care**

Project Lead:

Contact No: Bleep No:

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)
Will be undertaking personally

Background / Rationale

Aim to educate a cross section of clinical staff. Assessing clinical staff knowledge & understanding of POCT for INR, undertake an education programme then reassess their knowledge post education

Methodology

Questionnaire pre & post teaching session.

Aims / Objectives

To ascertain knowledge of clinical staff that will potentially use POCT.

Standards / Criteria Details (service evaluation N/A)

N/A

Guideline / Standards available: Yes ☒ No ☐

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: Click here to enter text.

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☒ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐ No ☒
High risk	Yes ☐ No ☒
High cost	Yes ☐ No ☒

Known quality issue Yes ☐ No ☒
Wide variation in practice Yes ☐ No ☒

Sample No: Approx 20 Procedure codes to identify sample: Click here to enter text.

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☐ No ☒

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Is Clinical Audit Team support required? Yes ☐ No ☒
If yes, please specify type of assistance required:
- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)
- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*
Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date:January 2020

Anticipated project completion date: May 2020

Anticipated Action Plan Submission date:May 2020

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**

- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

Staff Questionnaire Point of Care Testing- Pre Education

Define Point of Care Testing (POCT)

Who can undertake POCT?

Can you give examples of POCT used within the trust?

Can you name other POCT available on the market?

Name 5 benefits of POCT for the patient

-
-
-
-
-

Name 3 benefits for staff

-
-
-

Name 3 benefits for organisation

-
-
-

Can you identify any disadvantages of POCT?

Are you aware that all POCT devices need to be quality control checked before used for patient testing?

- **Yes**
- **No**
- **Not sure**

How much does it cost for an INR sample to be taken & processed by the labatory

-
-
-

(will give 3 options awaiting current costings)

How much does it cost to do POCT

-
-
-

(will give 3 options once decided on brand to be trialled)

Thank-you for completing the questionnaire

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Action Plan

Ref no:

Clinical Audit Title	Patterns of recurrence and growth following surgical resection of intracranial meningioma		
Date audit complete	10/09/2021	**Date action plan completed**	22/01/2022
Auditor		**Name of policy / guideline**	N/A
Division	Department of Neurosurgery	**Source of policy / guideline**	N/A

Audit Rationale:
Please summarize the rationale of the audit for the members of the Clinical Audit Group (please limit to one or two sentences)

Surgery is required for symptomatic meningioma. Incomplete resection, leaving residual tumour (Simpson grade 4 resection) is seen in 1/3 of cases due to anatomical location and proximity./involvement of critical neurovascular structures. The growth rates of the remaining tumour are currently unknown, and could be used to impact the frequency and duration of MRI surveillance used at follow up.

Summary of Findings:
Please concisely state the main conclusions of the project using bullet points

- *Of 236 residual meningioma identified over a 17 year period, The absolute growth rate was 0.11cm^3 per year and the relative growth rate was 4.3% per year. Only 5% had symptoms of clinical progression of their residual tumour.*
- *Factors associated with growth of the residual tumour were skull base location, use of adjuvant radiotherapy, and elevated Ki-67 index (a pathology marker of tumour activity).*

Key success:
Please concisely state the key success identified by the project – if none identified please state N/A

- **Only 5% of patients with a residual meningioma develop clinical symptoms due to regrowth of their tumour**
- **50% of patients have significant growth (40%) at 5 years of follow up, however 84% of patients are successfully managed conservatively for this.**

Key concerns:
Please concisely state the key concerns identified by the project using bullet points– if none identified please state N/A

- *Adjuvant radiotherapy being a significant predictor of progression of a residual tumour, when this should reduce the incidence of progression. This is likely to be due to the fact that adjuvant radiotherapy is administered to selected patient based on risk of tumour regrowth, rather than radiotherapy causing regrowth.*

Recommendations discussed:

Please concisely summarise the recommendations that were discussed following the completion of the project

- Patients can be monitored conservatively if a residual tumour is identified, and the patient is asymptomatic.
- If tumours grow without causing clinical symptoms, they can still be managed conservatively in most cases without further intervention.
- No recommendation could be made about the frequency or duration of MRI surveillance.

Presentation / Dissemination of Project
Date findings were presented / disseminated: 25/09/21.
Department where discussed or presented: European Association of Neuro-Oncology (EANO) 2021 meeting

Manuscript in preparation for publication in peer-reviewed journal

Actions agreed following recommendations discussed:-
*****Please ensure each action has a named lead, timescale and reportable group stated on the action plan below. Please list the evidence of the action implementation e.g SOP, protocol, standardised template, presentation or meeting minutes etc*

Issue	Action required	Named lead for action	Timescale	Evidence	Reportable to (group/meeting)
1)				.	
2)					
3)					

Re-audit date _____N/A_____ **If no re-audit planned please give reasons why?** _____Rare condition and outcome means re-auditing not suitable_____

Will this be an on-going audit? Yes No X

Are there any potential barriers / problems to prevent the implementation of the above actions? Yes ☐ No X

If yes to the above please state who the issues have been referred to: **Name** _____ **Designation** _____ **Date referred** _____ **Signature:**_____ **Date:**_____
Have any issues been logged on the risk register? Yes ☐ No ☐ N/A ☐ **Please provide details of issue(s) logged on the risk register:**

Project Prioritisation Assessment Tool

Audit title: Patterns of recurrence and growth following surgical resection of intracranial meningioma

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-
Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume	Y	(x2)
High risk		(x3)
Known quality issue		(x3)
Wide variation in practice	Y	
NICE / NCEPOD related audit	Y	(x3)
Defined measurable standards available	Y	
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project	Y	
National / regional or multicentre project	Y	(x2)
Total	**10c**	

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit X☐ Service Evaluation ☐**

Audit / Service Evaluation Title: Patterns of recurrence and growth following surgical resection of intracranial meningioma

Division: Neurology ☐ Neurosurgery X ☐ Please specify department Click here to enter text.

Project Lead:

Contact No: Click here to enter text. **Bleep No:** Click here to enter text.

Email address:

Audit / service evaluation supervisor: Click here to enter text.

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale

Meningiomas are the most common intracranial tumour and account for ~1/3 of all primary brain tumours. Symptomatic meningiomas are managed by surgical resection. There are three histological grades (WHO grades 1-3): Grade I: Benign - 70-80% of cases.
Grade II: Atypical – 20-30% of all cases.
Grade III: Anaplastic – 1-3% of all cases.

Extent of surgical resection is classified according to the Simpson grade (1-5).

- Grade 1: Complete resection including resection of underlying bone and underlying bone and associated dura: 9% symptomatic recurrence at 10 years.
- Grade 2: Complete removal and coagulation of dural attachment: 19% symptomatic recurrence at 10 years.
- Grade 3: Complete removal without resection of dura and coagulation: 29% symptomatic recurrence at 10 years.
- Grade IV: Subtotal resection: 44% symptomatic recurrence at 10 years.
- Grade V: Simple decompression with or without biopsy: 100% symptomatic recurrence at 10 years.

The management and recurrence rate are determined by both Simpson grade and WHO grade. Due to the risk of recurrence patients undergo follow-up with clinical and MRI assessment at intervals of 6-12 months. Some patients will be discharged (e.g. after 5 years) whilst others remain on follow-up for decades. There is wide variation in follow-up practice between clinicians and centres. Even when patients develop radiological recurrence continued follow-up with MRI is often advised – especially in older patients where the recurrent tumour is unlikely to become life-limiting. Although there are guidelines from NICE and the European Association for Neuro-Oncology (EANO) there is still variation in the frequency of MRI follow-up.

Methodology

Retrospective case note audit of all patients diagnosed between 1/1/07 and 31/12/17. Review of clinical presentation, extent of surgical resection (Simpson grade), WHO tumour grade, epilepsy rates, MRI features, frequency of MRI follow-up and recurrence rate and growth of meningiomas.

Aims / Objectives

To determine variation in use and frequency of follow-up MRI in patients undergoing surgical resection of intracranial meningioma and to assess adherence to the current NICE 2018 guidelines and EANO 2016 guidelines.

Output: to standardise follow-up schedule for patients with meningioma

Standards / Criteria Details (service evaluation N/A)

NICE 2018 guidelines, EANO 2016 meningioma guidelines (see title page appended below).

Guideline / Standards available: Yes X ☐ No ☐

If yes, please attach a copy or provide web link to the most current version:
https://www.nice.org.uk/guidance/ng99

Name of Standard / guideline: Brain tumours (primary) and brain metastases in adults. NICE guideline Published: 11 July 2018. www.nice.org.uk/guidance/ng99

Source of Standard / guideline: NSF ☐ NICE X ☐ Royal College ☐
Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes x ☐No ☐

Is the audit / service evaluation issue:

High volume	Yes X ☐ No ☐
High risk	Yes ☐ No X ☐
High cost	Yes ☐ No X ☐
Known quality issue	Yes ☐ No X ☐
Wide variation in practice	Yes X ☐ No ☐

Sample No: ~500 cases identified from Walton Centre neuropathology database between 2007 – 2017

Procedure codes to identify sample: Not needed

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes X ☐ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No **X** ☐

Is this project part of an agreed departmental rolling programme? Yes ☐ No **X** ☐

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: X ☐ Single disciplinary: ☐

Is Clinical Audit Team support required? Yes X☐ No ☐
If yes, please specify type of assistance required:

- ♦ Population Identification ☐
- ♦ Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used) – to be developed

- ♦ Database design ☐
- ♦ Data entry ☐
- ♦ Analysis ☐
- ♦ Presentation ☐

Collection of case notes X ☐ Total number _20___ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*

Will the audit involve direct patient contact? Yes ☐ No X ☐

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☐

Anticipated start date:1/09/20

Anticipated project completion date: 30/8/21

Anticipated Action Plan Submission date:30/11/21

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead *(Signature)* _____ Date: 11/10/19

Comments Click here to enter text.

Divisional Clinical Audit Lead *(Signature)* _____ Date: 28/01/20

Is this topic a key clinical interest for the department / division? Yes ☐ No ☒

EANO guidelines for the diagnosis and treatment of meningiomas

Roland Goldbrunner, Giuseppe Minniti, Matthias Preusser, Michael D Jenkinson, Kita Sallabanda, Emmanuel Houdart, Andreas von Deimling, Pantelis Stavrinou, Florence Lefranc, Morten Lund-Johansen, Elizabeth Cohen-Jonathan Moyal, Dieta Brandsma, Roger Henriksson, Riccardo Soffietti, Michael Weller

Although meningiomas are the most common intracranial tumours, the level of evidence to provide recommendations for the diagnosis and treatment of meningiomas is low compared with other tumours such as high-grade gliomas. The meningioma task force of the European Association of Neuro-Oncology (EANO) assessed the scientific literature and composed a framework of the best possible evidence-based recommendations for health professionals. The provisional diagnosis of meningioma is mainly made by MRI. Definitive diagnosis, including histological classification, grading, and molecular profiling, requires a surgical procedure to obtain tumour tissue. Therefore, in many elderly patients, observation is the best therapeutic option. If therapy is deemed necessary, the standard treatment is gross total surgical resection including the involved dura. As an alternative, radiosurgery can be done for small tumours, or fractionated radiotherapy in large or previously treated tumours. Treatment concepts combining surgery and radiosurgery or fractionated radiotherapy, which enable treatment of the complete tumour volume with low morbidity, are being developed. Pharmacotherapy for meningiomas has remained largely experimental. However, antiangiogenic drugs, peptide receptor radionuclide therapy, and targeted agents are promising candidates for future pharmacological approaches to treat refractory meningiomas across all WHO grades.

Introduction

Meningiomas are the most common primary intracranial tumours, of which most are classified as WHO grade I lesions, with a minority classified as WHO grade II or grade III lesions on the basis of local invasiveness and cellular features of atypia.[1] The vast majority of patients can be cured by surgery alone, particularly patients with WHO grade I tumours in favourable locations (eg, convexity meningiomas, and easily accessible skull-base meningiomas). Beyond surgery, various radiotherapy approaches are often used to increase local control, especially if surgery alone seems insufficient. By contrast, pharmacotherapy has thus far only had a minor role in the management of meningiomas.

Although management might appear to be fairly standardised across the world, controlled clinical trials are uncommon, so standards of care are defined by local experience, long-standing traditional procedures, and experience-based practice. However, numerous situations occur in which more than one approach appears feasible. For example, is intervention needed for incidental meningiomas that have unclear growth kinetics? Do all suspected meningioma lesions require histological verification of the diagnosis? In cases in which radiotherapy is considered, when is the right time and what is the right fractionation approach? How will medical therapy develop in the future and what is the role of molecular profiling? Defining standards of care and outlining answers to some of these questions is the purpose of this Review.

Methods

The European Association of Neuro-Oncology (EANO) meningioma task force assessed the available literature, sorted the scientific evidence into classes I–IV, and rated recommendations at levels A–C, according to the European Federation of the Neurological Societies guidelines.[2] Class I denotes evidence derived from prospective, randomised, controlled clinical trials; class II is evidence derived from prospective studies, including observational studies, cohort studies, and case-control studies; class III evidence is derived from retrospective studies; and class IV evidence is from uncontrolled case series, case reports, and expert opinions. Regarding the recommendations A–C, A requires one or more class I studies or two consistent class II studies, B requires one or more class II studies or overwhelming class III evidence, and C requires two or more consistent class III studies. When sufficient evidence for recommendations was not available, the task force offered advice as a good practice point. We summarise recommendations for the diagnostic and therapeutic management of patients with meningioma in general, including epidemiology and clinical presentation, pathogenesis and risk factors, diagnostic procedures, therapeutic decision making, surgical and radiotherapeutic approaches, and pharmacotherapy (appendix). WHO grading is displayed in panel 1.[3] Specific recommendations for the therapeutic management of meningiomas of WHO grades I–III are outlined in figure 1.

Meningioma WHO grade I

Meningiomas can be diagnosed by MRI and additional CT in most cases (figure 2).[4] They usually present as solitary round tumours, with close contact to the dura mater and strong enhancement after contrast injection. The typical appearance of meningioma is isointense on T1-weighted imaging, isointense or hyperintense on fluid-attenuated inversion recovery, and with high

Lancet Oncol 2016; 17: e383–91

Center of Neurosurgery, Department of General Neurosurgery, University of Cologne, Cologne, Germany (Prof R Goldbrunner MD, P Stavrinou MD); **Radiation Oncology Unit, Sant'Andrea Hospital, Sapienza University of Rome, Rome, Italy** (G Minniti MD); **IRCCS Neuromed, Pozzilli, Italy** (G Minniti); **Department of Medicine I, Comprehensive Cancer Center Vienna, Medical University of Vienna, Vienna, Austria** (M Preusser MD); **Department of Neurosurgery, The Walton Centre NHS Foundation Trust, Liverpool, UK** (M D Jenkinson MD); **Department of Neurosurgery, University Hospital San Carlos, Universidad Cumplutense de Madrid, Madrid, Spain** (K Sallabanda MD); **Department of Oncologia Radioterapia Robotizada—CyberKnife, IMOncology Madrid Arturo Soria, Madrid, Spain** (K Sallabanda); **Service de Neuroradiologie, Hôpital Lariboisière, Paris, France** (Prof E Houdart MD); **Department of Neuropathology, Institute of Pathology, University of Heidelberg, Heidelberg, Germany** (Prof A von Deimling MD); **CCU Neuropathology German Cancer Center (DKFZ), Heidelberg, Germany** (A von Deimling); **Department of Neurosurgery, Hôpital Erasme, Université Libre de Bruxelles, Brussels, Belgium** (F Lefranc MD); **Department of Neurosurgery, Bergen University Hospital, Bergen, Norway** (Prof M Lund-Johansen MD); **Department of Clinical Medicine, Faculty of Medicine and Dentistry, University of Bergen, Bergen, Norway** (Prof M Lund-Johansen); **Department of Radiation Oncology, Institut Universitaire du Cancer de Toulouse Oncopole, Toulouse, France**

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Action Plan

Ref no: 285

Clinical Audit Title	Service evaluation to review recognition and management of delayed ischaemic deficit in aneurysmal subarachnoid haemorrhage		
Date audit complete	July 2021	**Date action plan completed**	
Auditor		**Name of policy / guideline**	Subarachnoid haemorrhage guidelines to support practice
Division	Neurosurgery	**Source of policy / guideline**	Walton Centre

Summary of Findings:

Please concisely state the main conclusions of the project using bullet points

- *Despite the high cost of Intensive care/ rehabilitation; the patient outcomes for those treated consistently and aggressively improved outcomes*
- *Highlighted the value of thorough review and goal setting in management of the SAH patient*
- *Fluid balance charting on the specialist ward was of a good standard*
- *Inconsistency in diagnosing DID by radiological means*
- *Patient management could be supported by use of TCDs in a beneficial way*
- *Inconsistency in management goal setting*
- *Inconsistency in nursing care*
- *Inconsistency in recognising and diagnosing DID and prompt proactive management with ongoing monitoring by*

Key success:

Please concisely state the key success identified by the project – if none identified please state N/A

- The project proved that care and outcomes on the whole was good for this group of patients

Key concerns:

Please concisely state the key concerns identified by the project using bullet points– if none identified please state N/A

- *Inconsistencies or failures of management of DID*
- *Inconsistencies in diagnosing DID*
- *Inadequate fluid balance charting*

Recommendations discussed:

Please concisely summarise the recommendations that were discussed following the completion of the project

- Teaching for ward staff (To be addressed at Friday teaching session and teaching sessions)
- Teaching for registrars (To be addressed at registrar training)
- CTA should be requested for all patients who are displaying symptoms that may be reflective of DID

- Ward rounds should be thorough and consistent, setting BP and Fluid balance goals each day until patient is stable.
- All patients with symptomatic DID should be managed in the critical care unit until safe to transfer.
- Patient care will benefit from management supported by TCDs to minimise the impact of unnecessary prolonged care and use of inotropes, radiological examination and support timely transfer from critical care.

Presentation / Dissemination of Project

Date findings were presented / disseminated: _____

Department where discussed or presented: _____

Actions agreed following recommendations discussed:-

**Please ensure each action has a named lead, timescale and reportable group stated on the action plan below. Please list the evidence of the action implementation e.g. SOP, protocol, standardised template, presentation or meeting minutes etc*

Issue	Action required	Named lead for action	Timescale	Evidence	Reportable to (group/meeting)
Reduced knowledge and need for education on management of SAH patients highlighted by varied practice and inconsistent management plans at ward round Risk of failure to recognise deterioration and rescue	1) Teaching for ward staff - To be addressed at Friday teaching session, PNF and teaching sessions - Ongoing teaching at Neuro course and new starters - Ward link nurses - Nursing care plans -registrar teaching		3 months	*s*	
Inconsistent recognition of vasospasm leading to delays and inconsistent management	- CTA should be requested for all patients who are displaying symptoms that may be reflective of DID - - Registrar training		2 months	NICE 2021	

	- All neurovascular CNS to have protocol to request CTA				
Inconsistent and partial evaluation and review at ward rounds risking failure to rescue and/or pick up deterioration and poor management plans	- Dissemination at neurovascular meeting - Ward rounds should be thorough and consistent, setting BP and Fluid balance goals each day until patient is stable. -		6 months		
Patients not always managed at the right level of care made worse by lack of co-horting – risk of poor management and failure to rescue	- Neurovascular team discussion with ICU and recommendation as agreed - Need now greater with the absolution of specialist wards and high staff turnover - All patients with symptomatic DID should be managed in the critical care unit until safe to transfer		(ongoing discussion)		
SAH patients will beneftit from TCDs to support care and reduce number of CTAs/ radiation	ANP training for TCD Patient care will benefit from management supported by TCDs		6 months	NICE 2021	
Fluid balance charts are inconsistently completed and often to a poor standard risking poor management and failure to recognise deterioration	- Ongoing audit and presentation of fluid balance compliance to highlight it importance in care - Fluid balance audit		3 months		

Re-audit date _ 2022 **If no re-audit planned please give reasons why?** _____

Will this be an on-going audit? Yes ☐ No ☐

Are there any potential barriers / problems to prevent the implementation of the above actions? Yes ☐ No ☐

If yes to the above please state who the issues have been referred to:

Name _ **Designation** _____ **Date referred** _____

Signature:_____ **Date:**_____

Have any issues been logged on the risk register? Yes ☐ No ☐ N/A ☐

Please provide details of issue(s) logged on the risk register:

The Walton Centre NHS
NHS Foundation Trust

Project Prioritisation Assessment Tool

Audit title:

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-
Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume		(x2)
High risk		(x3)
Known quality issue		(x3)
Wide variation in practice	Y	
NICE / NCEPOD related audit		(x3)
Defined measurable standards available	Y	
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division	Y	(x2)
Multidisciplinary project	Y	
National / regional or multicentre project		(x2)
Total	**5c**	

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit ☐ Service Evaluation ☒**

Audit / Service Evaluation Title: service evaluation to review recognition and management of delayed ischaemic deficit in aneurysmal subarachnoid haemorrhage and compare outcomes at discharge and 3 months

Division: Neurology ☐ Neurosurgery ☒ Please specify department **neurovascular team**

Project Lead:

Contact No: Bleep No:

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)
Click here to enter text.

Background / Rationale

In 2019, guidelines were agreed for management of aneurysmal subarachnoid haemorrhage. Those guidelines advise management of the disease and complications; the most devastating being delayed ischaemic deficit. The Walton Centre has proven that its outcomes for aSAH are amongst the best in the UK as determined by HES data. This care is determined by robust team work and a multidisciplinary team approach to excellence in care.

Methodology

The case notes, charts, observations and management including observation and response to changes in physiological parameters will be audited to compare treatment versus outcome at baseline and after 3 months. Data will be collected using the SAH data base

Audit

Aims / Objectives
This service evaluation aims to prove that swift recognition, aggressive management and tight control of the physiological parameters of patients with aneurysmal subarachnoid haemorrhage in both level 2 and 3 care improves outcome at 3 months

All patients who have been assessed as having delayed ischaemic deficit from the SAH data base 2019 will be assessed

Standards / Criteria Details (service evaluation N/A)

guidelines

Guideline / Standards available: Yes ☒ No ☐

If yes, please attach a copy or provide web link to the most current version: available on intranet

Name of Standard / guideline: Guidelines for management of aneurysmal subarachnoid haemorrhage

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☒ Other ☒ State other: European and American guidelines

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☒ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☐	No ☒
High cost	Yes ☐	No ☒
Known quality issue	Yes ☐	No ☒
Wide variation in practice	Yes ☒	No ☐

Sample No: 38 Procedure codes to identify sample: SAH data base

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

BNVG Yes ☒ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☒ Single disciplinary: ☐

Rolling programme duration (number of years): Click here to enter text.

Is Clinical Audit Team support required? Yes ☒ No ☐
If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☒ Total number ___2_ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is <u>not</u> part of the patients usual treatment or care please explain how in this section)*
Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* clinic letters, and mRS scores as determined at outpatient attendance and SAH data base

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date: March 2020

Anticipated project completion date: June 2020

Anticipated Action Plan Submission date: Sept 2020

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead *(Signature)* _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead *(Signature)* _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☒ No ☐

Service review of outcomes following delayed deficit after aSAH

Date of SAH

Date of transfer

Date of treatment

Reason for delay if > 48 hours

Best WFNS / GCS in A+E

Fisher grade

Hydrocpehalus? Y/N

Care immediately post treatment (level 2, 3?)

How long spent in ICU?

Date patient become symptomatic of vasospasm?

Symptoms?

Who noticed? (senior surgeon/junior surgeon/anaesthetist/ specialist nurse/ ward nurse/ ICU nurse/other)

When noticed? : Ward round/ other?

Was this confirmed radiologically? (MR/ CTA/ TCD)

Fluid balance 24 hours prior to deterioration ?

Fluid balance in 4 hours prior to deterioration?

MAP / BP at deterioration

MAP/BP prior to deterioration?

Treatment : HHH/ HH/ close watch/ regular TCDs accurate fluid balance)

Has fluid balance target been set for management?

Has MAP/BP target been set for management?

Length of stay on ICU ?

Date of discharge

Length of stay in hospital?

Discharge destination

mRS at discharge

mRS at 3 months

Project Prioritisation Assessment Tool

Audit title: Blood glucose monitoring for patients on high dose steroid's

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-
Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume		(x2)
High risk		(x3)
Known quality issue	Y	(x3)
Wide variation in practice		
NICE / NCEPOD related audit		(x3)
Defined measurable standards available		
Re-audit / repeat service evaluation	Y	(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**5b**	

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit ☒ Service Evaluation ☐**

Audit / Service Evaluation Title: Blood glucose monitoring for patients on high dose steroid's

Division: Neurology ☐ Neurosurgery ☒ Please specify department **Cancer Services**

Project Lead:

Contact No: Bleep No:

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)
Click here to enter text.

Background / Rationale
To review compliance of blood glucose monitoring for brain tumour patients oh high dose steroids.

Methodology

Case note audit/EP2 audit to review blood glucose charts and nursing documentation. Is the date and time documented? Have the BM's been monitored daily? Have raised BM's been actioned?

Aims / Objectives
To maintain a standard of care by reviewing compliance. Highlight areas for development and education. To compare results to last year's findings.

Standards / Criteria Details (service evaluation N/A)
Evaluate effectiveness of the algorithm, ward education and attendance at ward meetings/safety huddle. Has this had a effect on patient care.

Guideline / Standards available: Yes ☒ No ☐

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: BM Algorithm

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☒ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☒ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐ No ☒
High risk	Yes ☐ No ☒
High cost	Yes ☐ No ☒

Known quality issue Yes ☒ No ☐
Wide variation in practice Yes ☐ No ☒

Sample No: Click here to enter text. **Procedure codes to identify sample:** Click here to enter text.

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☐ No ☒

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☒ No ☐

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Is Clinical Audit Team support required? Yes ☒ No ☐
If yes, please specify type of assistance required:
- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)
- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☒ Total number 40(20 cairns/20 outlying wards) / per week 10____

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*
Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Review of casenotes/EP2

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date:Feb 2020

Anticipated project completion date: April 2020

Anticipated Action Plan Submission date:May 2020

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Departmental Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Action Plan

Ref no: NS 287

Clinical Audit Title	**Investigating clinical outcomes of Long-standing overt ventriculomegaly in adults (LOVA)**		
Date audit complete	25/06/2021	**Date action plan completed**	30/06/2021
Auditor		**Name of policy / guideline**	N/A
Division	Neurosurgery	**Source of policy / guideline**	N/A

Summary of Findings:

- Long standing overt ventriculomegaly (LOVA) is a heterogenous group of conditions, with varied clinical presentations in the audit.
- Both Endoscopic third ventriculostomy (ETV) and Ventriculoperitoneal shunt (VPS) lead to symptom resolution in over 80% of LOVA patients when used as a first line treatment, but VPS is associated with a significantly higher risk of post-operative complications, including infection.

Key success:

- At the Walton Centre, 84% of patients treated for LOVA with any operation will report symptom resolution or improvement at 1 year after surgery. There is no difference between the success rates of ETV and VP shunts (84 and 85% respectively)
- The complication rate for ETV as a first line treatment was only 4%, in comparison to 45% with a VP shunt

Key concerns:

- Patients with LOVA are still managed without formal guidelines- many patients are managed conservatively, some undergo ETV, and some VP shunt.

Recommendations discussed:

- Both ETV and VPS have similar success rates for symptomatic improvement when used for LOVA.
- Consider that VPS has a significantly higher infection rate when deciding which intervention to select in adult hydrocephalus patients.

Presentation / Dissemination of Project

Date findings were presented / disseminated: 1. SBNS Annual meeting Dundee (25th September 2021, Oral presentation)
2. European Association of Neurosurgical Societies (EANS) 2021 meeting (7th-8th October 2021, Oral presentation)

Department where discussed or presented: Society of British Neurosurgeons (SBNS), European Association of Neurosurgical Societies (EANS)

Actions agreed following recommendations discussed:-

Issue	Action required	Named lead for action	Timescale	Evidence	Reportable to (group/meeting)
1) Highlight the issue of LOVA patient management to neurosurgeons at the Walton Centre, to inform them of the significant difference in complication rates between the two procedures.	Present the local data at the next available Walton Centre audit research meetings. If this is not possible, or the next meeting is not in the foreseeable future due to COVID, the findings could be communicated in a consultants meeting or trust newsletter.		Present to local consultants when next audit presentation meeting is available.	*Record of attendance to meeting, consultant feedback*	
2) Communicate findings to consultant neurosurgeon who is also the CSF lead at the Walton Centre	Email completed manuscript to MM (CSF lead at the Walton Centre) for review and discussion.		Submitted to MM 14/10/2021	Email receipt	
3) Inform radiologist teams of the study findings, to increasingly recognise LOVA on reporting scans	Contact consultant radiologist to advise on best way to inform radiologists of need to refer LOVA diagnoses for specialist appointments when possible.		October 2021-January 2022	Email receipt/in-person meeting	

Re-audit date ____n/a_____**If no re-audit planned please give reasons why?** Not enough new patients identified

Will this be an on-going audit? Yes No x

Are there any potential barriers / problems to prevent the implementation of the above actions? Yes No x

If yes to the above please state who the issues have been referred to:

Name _____ **Designation** _____ **Date referred** _____

Signature:____ _____ **Date:**_____23/10/2021_____

Have any issues been logged on the risk register? Yes No x N/A

Please provide details of issue(s) logged on the risk register:

Project Prioritisation Assessment Tool

Audit title: Investigating clinical outcomes of Long-standing overt ventriculomegaly in adults (LOVA)

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-
Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume		(x2)
High risk		(x3)
Known quality issue		(x3)
Wide variation in practice	Y	
NICE / NCEPOD related audit		(x3)
Defined measurable standards available		
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project	Y	
National / regional or multicentre project		(x2)
Total	**2c**	

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit ☒ Service Evaluation ☐**

Audit / Service Evaluation Title: Investigating clinical outcomes of Long-standing overt ventriculomegaly in adults (LOVA)

Division: Neurology ☐ Neurosurgery ☒ Please specify department **Department of Neurosurgery**

Project Lead:

Contact No: Bleep No:

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)
Abdurrahman Islim (data analysis, general advice), members of the audit team (audit approval), Clinical coding and informatics (to identify and acquire cases)

Background / Rationale

Long-standing overt ventriculomegaly in adults (LOVA) is a unique form of hydrocephalus that develops during childhood, but manifests symptoms during adulthood. It is presumed that the hydrocephalus arrests before becoming clinically detectable, with most patients presenting typically in the 5th and 6th decades. The exact mechanism of this phenomenon remains unclear. LOVA defines a cohort of adult patients with symptoms of chronic hydrocephalus (mainly headache, cognitive decline, imbalance and visual disturbance), a head circumference more than 2 standard deviations above the 98th centile and overt tri-ventriculomegaly on neuroimaging, in the absence of a secondary cause for aqueduct stenosis in adulthood.
Only a small number of case series have been published in this condition (three most recent papers have 14, 16 and 4 total cases respectfully) (Rekate 2007, Ved et al 2016, Xiao et al 2019), and thus ambiguity exists with regards to the exact aetiology, presentation of the condition, and preferred treatment paradigms. Endoscopic third ventriculostomy (ETV) has been suggested as an effective surgical intervention in these patient groups if symptomatic, however the case series patient numbers and overall statistical power supporting this are small. Being able to conduct a robust, retrospective review of cases, their presentation, clinical status, and surgical outcomes if pertinent would greatly enhance the existing literature and help guide treatment paradigms in this condition if successful.

Methodology

This will be a retrospective study cohort of all cases of LOVA diagnosed at the Walton Centre between 2008 and 2019. Upon Audit approval, the project lead will liaise with the audit department, clinical coding and informatics team. We will use defined search terms to identify all cases diagnosed or treated at the Walton Centre between the two study times. This will include identifying key terms such as 'LOVA', 'Adult onset ventriculomegaly', 'late/adult onset hydrocephalus', 'operation ETV' etc. These will be used to generate an excel spreadsheet of cases identified, which will then be screened for eligibility by the project lead. If eligible, these cases will be inputted into a password protected, anonymised excel spreadsheet, delineating the clinical outcomes, surgical interventions if applicable, and clinical follow up over time. This information will be acquired through a combination of searching the PACS and EP2 databases to delineate the relevant clinical information and management. Once this has been completed and reviewed by the project supervisor, we will carry out statistical analysis of data acquired using a statistical software programme such as SPSS Version 25. Once this has been completed, if the number of cases identified exceeds those listed above in the literature, we will hope to disseminate the findings in a scientific manuscript, submitting this to a scientific journal to consider for publication. The inclusion criteria is as follows: All cases of LOVA diagnosed or managed at the Walton Centre from

2008-2019.
Exclusion criteria: All cases where LOVA was not the actual diagnosis, identified outside study period, previous history of congenital hydrocephalus/previous shunt procedure <18 yrs.

Aims / Objectives

Identify number of cases of LOVA diagnosed or treated at the Walton Centre between 2008 and 2019.
Investigate and delineate the clinical presentation, patient characteristics and clinical outcome of patients with LOVA.
Evaluate the use of endoscopic third ventriculostomy (ETV) as a surgical treatment option in LOVA patients if pertinent.

Standards / Criteria Details (service evaluation N/A)

None at present, may be identified later on as the project develops.

Guideline / Standards available: Yes ☐ No ☒

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: Click here to enter text.

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☐ No ☒

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☐	No ☒
High cost	Yes ☐	No ☒
Known quality issue	Yes ☐	No ☒
Wide variation in practice	Yes ☒	No ☐

Sample No: 10-50 anticipated, may be more/less depending on case/volume/exclusion criteria

Procedure codes to identify sample: To consult with clinical coding and informatics prior to search, but will include: 'LOVA', 'Adult onset ventriculomegaly', 'late/adult onset hydrocephalus', 'operation ETV', 'long standing overt ventriculomegaly in adults'

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☒ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☒ Single disciplinary: ☐

Is Clinical Audit Team support required? Yes ☒ No ☐

If yes, please specify type of assistance required:

- Population Identification ☒
- Design of data collection tool ☒

(If not required please, attach a copy of the tool to be used)

- Database design ☒
- Data entry ☒
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*

Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date: Click here to enter text.

Anticipated project completion date: Click here to enter text.

Anticipated Action Plan Submission date: Click here to enter text.

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
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Departmental Clinical Audit Lead *(Signature)* _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead *(Signature)* _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

The Walton Centre NHS Foundation Trust

Project Prioritisation Assessment Tool

Audit title: VTE prophilaxis prescribing in neurosurgical patients

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-

Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume		(x2)
High risk	Y	(x3)
Known quality issue	Y	(x3)
Wide variation in practice	Y	
NICE / NCEPOD related audit	Y	(x3)
Defined measurable standards available	Y	
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division	Y	(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**13**	**3A**

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

Clinical Audit / Service Evaluation Registration Form

Clinical Audit definition

Clinical Audit is a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and the implementation of change. Aspects of the structure, processes and outcomes of care are selected and systematically evaluated against explicit criteria. Where indicated, changes are implemented at an individual, team or service level and further monitoring is used to confirm improvement in healthcare delivery.

Service evaluation

Service Evaluation is undertaken to benefit those who use a particular service and is designed and conducted to define or judge current service. Your participants will normally be those who use the service or deliver it. It involves an intervention where there is no change to the standard service being delivered (e.g. no randomization of service users into different groups). This does not require ethical approval.
It is possible to use data collected from participants during a service evaluation for later research as long as:

- the data is completely anonymous;
- it is not possible to identify participants from any resulting report;
- use of the data will not cause substantial damage and distress

Please note that to complete this form your project **must be clinical audit or service evaluation**. If you are unsure whether your project is clinical audit, service review or research brief definitions are given below as a guide:

Clinical Audit

- Measures existing practice against **best practice**, **evidence based clinical standards** *(this may include Royal College, British Association, NICE or Local guidance etc.)*

Research

- Generates new knowledge where there is no or limited research evidence available and which has the potential to be generalisable.

Service Evaluation:

- Seeks to evaluate the effectiveness or efficiency of a new or existing service to help inform local decision making (has been also referred to as service review, benchmarking or a baseline audit). This includes patient or staff satisfaction surveys.

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit ☒ Service Evaluation ☐**

Audit / Service Evaluation Title: VTE prophilaxis prescribing in neurosurgical patients

Division: Neurology ☐ Neurosurgery ☒ Please specify department Click here to enter text.

Project Lead:

Contact No: **Bleep No:** Click here to enter text.

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale

This project is focused on the current neurosurgical compliance with the hospital new policy and guidance in prescribing VTE prophylaxis.

Methodology

Retrospective study. The data will be collected from the JAC system, Ep2 and our clinical notes.

Aims / Objectives

Our aim is to reach 100% compliance auditing a new VTE prophylaxis policy to see if there are any improvements in the compliance following the implmentation of the new VTE Policy**Standards / Criteria Details (service evaluation N/A)**

The Walton Centre VTE Policy guidelines

Guideline / Standards available: Yes ☒ No ☐

If yes, please attach a copy or provide web link to the most current version: The Walton Centre VTE Policy

Name of Standard / guideline: VTE Policy

Source of Standard / guideline: NSF ☐ NICE ☒ Royal College ☐ Trust ☒ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☒ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☒	No ☐
High cost	Yes ☐	No ☒
Known quality issue	Yes ☒	No ☐
Wide variation in practice	Yes ☒	No ☐

Sample No: Click here to enter text. **Procedure codes to identify sample:** Click here to enter text.

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☐ No ☒

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Rolling programme duration (number of years): Click here to enter text.

Is Clinical Audit Team support required? Yes ☐ No ☒

If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is <u>not</u> part of the patients usual treatment or care please explain how in this section)*

Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date:15/01/2020

Anticipated project completion date: 22/01/2020

Anticipated Action Plan Submission date: Addressing compliance and implanting relevant changes within a week.

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
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Departmental Clinical Audit Lead ***(Signature)*** _____ Date: 09/01/2020

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☒ No ☐

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Action Plan

Ref no: NS 289

Clinical Audit Title	VTE pharmacological prophylaxis prescribing in neurosurgical patients – Re-audit		
Date audit complete	18/03/2020	**Date action plan completed**	18/03/2020
Auditor		**Name of policy / guideline**	VTE Policy
Division	Neurosurgery	**Source of policy / guideline**	

Summary of Findings:

Please concisely state the main conclusions of the project using bullet points

- Evidence of significant improvement in prescribing pharmacological prophylaxis in neurosurgical patients.
- Improved compliance with the new VTE policy.
- Failure to prescribe pharmacological VTE prophylaxis was noted in only 1 out of 71 patients audited on that day. That constitutes 1.4% (P<0.05 Chi-square test). Previously non-compliance was at 9.8%
- Very important role of pharmacists in maintaining the required standards on VTE prophylaxis..

Key success:

Please concisely state the key success identified by the project – if none identified please state N/A

- **Clear identification of improvement in prescribing pharmacological VTE prophylaxis in neurosurgical patients following the introduction of the new VTE guidelines.**
- **Compliance was improved from 9.8% of non-compliance to only 1.4% non-compliance following the introduction of the new VTE protocol.**
- **This improvement is statistically significant. Initially the audit registered non-compliance in 5 out of 51 patients. The re-audit registered non-compliance in only 1 out of 71 patients audited in March 2020. This represents Chi-square statistic value of 4.4737. This gives a P value of 0.3442. Hence this is significant change at P<0.05**
- **The VTE guidelines were followed.**
- **The discussions with the teams involved responsible for patients' care contributed to this significant improvement.**

Key concerns:

Please concisely state the key concerns identified by the project using bullet points– if none identified please state N/A

- Maintenance of the current level of compliance, even further improvement so that there are no non-compliant cases, may be challenging with the time.
- Although the re-audit demonstrated success of the new VTE protocol and significant improvement in compliance (Chi-square P value = 0.3442, and P<0.05), if we use Yates correction the Chi-square with the correction is 2.8585, thus giving the P value = 0.0908.

Recommendations discussed:
Please concisely summarise the recommendations that were discussed following the completion of the project

- Maintenance of the current level of compliance.
- Continuous insistence on the new VTE protocol, so that there are no non-compliant cases.
- Familiarisation with the new VTE protocol for all staff remains to be essential.
- Very important and continuous role of pharmacists, doctors and nurses in maintaining the required standards related to the VTE prophylaxis.

Presentation / Dissemination of Project
Date findings were presented / disseminated: 15/04/2020

Department where discussed or presented: Neurosurgery

Actions agreed following recommendations discussed:-
**Please ensure each action has a named lead, timescale and reportable group stated on the action plan below. Please list the evidence of the action implementation e.g SOP, protocol, standardised template, presentation or meeting minutes etc*

Issue	Action required	Named lead for action	Timescale	Evidence	Reportable to (group/meeting)
1) Maintenance of required standards in prescribing the pharmacological VTE prophylaxis as per our new guidelines and the policy	No need for another re-audit at the present. There is clear evidence that the neurosurgery department has accepted and closely followed the new VTE policy. I would recommend a second audit in 6 to 12 months time. This is in order to check if the standards on the VTE prophylaxis are maintained.				
2)					
3)					
4)					

Re-audit date _____ **If no re-audit planned please give reasons why?** This is the re-audit. It demonstrated a significant improvement in compliance with the new VTE protocol and significant improvement in prescribing pharmacological prophylaxis in neurosurgical patients. The improvement went from 9.8% of non-compliant cases to 1.4% of non-compliancy (1/71) with the new VTE protocol. This demonstrates a significant change with the P value (Chi-square test) of 0.3442. Thus P<0.005. Further follow up may be necessary in the future, in order to check that the current level of compliance is maintained. Currently, the new VTE protocol is followed through, and pharmacological prophylaxis is appropriately prescribed.

Will this be an on-going audit? Yes ☐ **No X**

Are there any potential barriers / problems to prevent the implementation of the above actions? Yes ☐ **No X**

If yes to the above please state who the issues have been referred to:

Name _____ **Designation** _____ **Date referred** _____

Signature:_____ **Date:**_____

Have any issues been logged on the risk register? Yes ☐ No ☐ **N/A X**

Please provide details of issue(s) logged on the risk register:

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Action Plan

Ref no: NS 290 & 306

Clinical Audit Title	CovidSurg		
Date audit complete	26th May 2020	**Date action plan completed**	20th April 2021
Auditor		**Name of policy / guideline**	N/A
Division	Neurosurgery/Crit Care	**Source of policy / guideline**	N/A

Summary of Findings:

Please concisely state the main conclusions of the project using bullet points

- Participation in global multi-centre study looking at the outcome of patients who undergo surgery following COVID infection. Data from study generate 4 peer-reviewed publications, details below:
- Paper 1 - Postoperative pulmonary complications occur in half of patients with perioperative SARS-CoV-2 infection and are associated with high mortality. Thresholds for surgery during the COVID-19 pandemic should be higher than during normal practice, particularly in men aged 70 years and older. Consideration should be given for postponing non-urgent procedures and promoting non-operative treatment to delay or avoid the need for surgery.
- Paper 2 - Patients who underwent surgery within COVID-19–free surgical pathways were younger with fewer comorbidities than those in hospitals with no defined pathway but with similar proportions of major surgery. After adjustment, pulmonary complication rates were lower with COVID-19–free surgical pathways (2.2% *v* 4.9%; adjusted odds ratio [aOR], 0.62; 95% CI, 0.44 to 0.86). Within available resources, dedicated COVID-19–free surgical pathways should be established to provide safe elective cancer surgery during current and before future SARS-CoV-2 outbreaks.
- Paper 3 - Preoperative testing strategies were adjusted for confounding using mixed-effects models. Results: Of 8784 patients (432 hospitals, 53 countries), 2303 patients (26.2%) underwent preoperative testing: 1458 (16.6%) had a swab test, 521 (5.9%) CT only, and 324 (3.7%) swab and CT. Pulmonary complications occurred in 3.9% while SARS-CoV-2 infection was confirmed in 2.6%. After risk adjustment, having at least one negative preoperative nasopharyngeal swab test (adjusted odds ratio 0.68, 95% confidence interval 0.68-0.98, p=0.040) was associated with a lower rate of pulmonary complications. Swab testing was beneficial before major surgery and in areas with a high 14-day SARS-CoV-2 case notification rate but not before minor surgery or in low risk areas. To prevent one pulmonary complication in major or minor surgery the respective number needed to swab test was 18 and 48 in high, and 73 and 387 in low risk areas.
- Paper 4 - As global roll out of SARS-CoV-2 vaccination proceeds, patients needing elective surgery should be prioritized ahead of the general population.

Key success:
Please concisely state the key success identified by the project – if none identified please state N/A

- Positive results published in peer-reviewed journal – manuscripts attached.

Key concerns:

- *N/A*

Recommendations discussed:

-

Presentation / Dissemination of Project
Date findings were presented / disseminated: Each manuscript published has its own date
Department where discussed or presented: Not presented locally, online presentations by study group have been held and papers distributed

Actions agreed following recommendations discussed:- N/A
**Please ensure each action has a named lead, timescale and reportable group stated on the action plan below. Please list the evidence of the action implementation e.g SOP, protocol, standardised template, presentation or meeting minutes etc*

Issue	Action required	Named lead for action	Timescale	Evidence	Reportable to (group/meeting)
1) Nil action due to the rapidity of COVID pandemic and change in guidelines					

Re-audit date _____ **If no re-audit planned please give reasons why?** One-off study by a group external to ourselves.

Will this be an on-going audit? Yes ☐ No ☒

Are there any potential barriers / problems to prevent the implementation of the above actions? Yes ☐ No ☐

If yes to the above please state who the issues have been referred to:

Name _____ **Designation** _____ **Date referred** _____

Signature:_____ **Date:**_____

Have any issues been logged on the risk register? Yes ☐ No ☒ N/A ☐

Please provide details of issue(s) logged on the risk register:

Project Prioritisation Assessment Tool

Audit title: CovidSurg

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-

Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost	Y	(x3)
High volume		(x2)
High risk	Y	(x3)
Known quality issue		(x3)
Wide variation in practice	Y	
NICE / NCEPOD related audit		(x3)
Defined measurable standards available		
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project	Y	
National / regional or multicentre project		(x2)
Total	**8**	**4B**

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

Clinical Audit / Service Evaluation Registration Form

Clinical Audit definition

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Service evaluation

Service Evaluation is undertaken to benefit those who use a particular service and is designed and conducted to define or judge current service. Your participants will normally be those who use the service or deliver it. It involves an intervention where there is no change to the standard service being delivered (e.g. no randomization of service users into different groups). This does not require ethical approval.
It is possible to use data collected from participants during a service evaluation for later research as long as:

- the data is completely anonymous;
- it is not possible to identify participants from any resulting report;
- use of the data will not cause substantial damage and distress

Please note that to complete this form your project **must be clinical audit or service evaluation**. If you are unsure whether your project is clinical audit, service review or research brief definitions are given below as a guide:

Clinical Audit

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Research

- Generates new knowledge where there is no or limited research evidence available and which has the potential to be generalisable.

Service Evaluation:

- Seeks to evaluate the effectiveness or efficiency of a new or existing service to help inform local decision making (has been also referred to as service review, benchmarking or a baseline audit). This includes patient or staff satisfaction surveys.

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit ☒ Service Evaluation ☐**

Audit / Service Evaluation Title: CovidSurg

Division: Neurology ☐ Neurosurgery ☒ Please specify department **Neurosurgery**

Project Lead:

Contact No: Click here to enter text. **Bleep No:**

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)
Click here to enter text.

Background / Rationale
There is an urgent need to understand the outcomes of COVID-19 infected patients who undergo surgery. Capturing real-world data and sharing international experience will inform the management of this complex group of patients who undergo surgery throughout the COVID-19 pandemic, improving their clinical care.

Methodology

This investigator-led, non-commercial, non-interventional study is extremely low risk, or even zero risk. This study does not collect any patient identifiable information (including no dates) and data will not be analysed at hospital-level. The inclusion criteria are:• Patients undergoing ANY type of surgery in an operating theatre, this includes obstetrics.AND•The patient had COVID-19 infection diagnosed within 7 days before or 30 days after surgery, based on(i) positive COVID-19 lab test or computed tomography (CT) chest scan.OR (ii) clinical diagnosis (no COVID-19 lab test or CT chest performed).If COVID-19 infection is diagnosed >30 days after surgery, the patient should not be included. Collection period will be March – September 2020.

Aims / Objectives

To determine 30-day mortality in patients with COVID-19 infection who undergo surgery. This will inform future risk stratification, decision making, and patient consent.

Standards / Criteria Details (service evaluation N/A)

See attached documents.

Guideline / Standards available: Yes ☐ No ☒

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: No guidelines for this area but will compare mortality to SBNS age adjusted rates for all procedures.

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☐ Other ☒ State other:

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☒ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☒	No ☐
High cost	Yes ☒	No ☐
Known quality issue	Yes ☐	No ☒
Wide variation in practice	Yes ☒	No ☐

Sample No: not known yet Procedure codes to identify sample: Click here to enter text.

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☒ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☒ Single disciplinary: ☐

Is Clinical Audit Team support required? Yes ☒ No ☐
If yes, please specify type of assistance required:

- Population Identification ☒
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*
Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date: March 2020

Anticipated project completion date: September 2020

Anticipated Action Plan Submission date: Click here to enter text.

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

The Walton Centre NHS Foundation Trust

Project Prioritisation Assessment Tool

Audit title: Neurosurgical referral and decision patterns in the wake of COVID 19

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-

Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume		(x2)
High risk		(x3)
Known quality issue		(x3)
Wide variation in practice		
NICE / NCEPOD related audit		(x3)
Defined measurable standards available		
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**0**	**5C**

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

Clinical Audit / Service Evaluation Registration Form

Clinical Audit definition

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Service evaluation

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It is possible to use data collected from participants during a service evaluation for later research as long as:

- the data is completely anonymous;
- it is not possible to identify participants from any resulting report;
- use of the data will not cause substantial damage and distress

Please note that to complete this form your project **must be clinical audit or service evaluation**. If you are unsure whether your project is clinical audit, service review or research brief definitions are given below as a guide:

Clinical Audit

- Measures existing practice against **best practice**, **evidence based clinical standards** *(this may include Royal College, British Association, NICE or Local guidance etc.)*

Research

- Generates new knowledge where there is no or limited research evidence available and which has the potential to be generalisable.

Service Evaluation:

- Seeks to evaluate the effectiveness or efficiency of a new or existing service to help inform local decision making (has been also referred to as service review, benchmarking or a baseline audit). This includes patient or staff satisfaction surveys.

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit** ☐ **Service Evaluation** X

Audit / Service Evaluation Title: Neurosurgical referral and decision patterns in the wake of COVID 19

Division: Neurology ☐ Neurosurgery X Please specify department **Neurosurgery**

Project Lead:

Contact No: Bleep No: Click here to enter text.

Email address:

Audit / service evaluation supervisor: Click here to enter text.

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale

All neurosurgical on-call referrals are processed through the orion on line referral platform run from Cambridge. Since the start of the COVID 19 pandemic, it appears that referrals may have been changing and it is suggested that the decisions made have been altering as well. The audit aims to add two fields to the orion database – one to ask if there has been a change in the management of the referral since COVID, and the second to briefly explain what that is. This will be combined with data from the Cambridge and AlderHey databases to look at patterns across the country during this time..

Methodology

All on call referrals received through the orion database will also have two additional fields that will be filled in by the on call neurosurgical registrar. These will be used to examine the effects of the COVID 19 pandemic on rate of referrals, and the decisions made to admit or see those referrals.

Aims / Objectives

To see if there is a noticeable change in referrals or decision to treat/admit in light of the COVID 19 pandemic.

Standards / Criteria Details (service evaluation N/A)

This will be compared to data from previous referrals, for which we have more than 5 years worth of data

---

Guideline / Standards available: Yes ☐ No X

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: Click here to enter text.

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☐ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐ No X
High risk	Yes ☐ No X
High cost	Yes ☐ No X
Known quality issue	Yes ☐ No X
Wide variation in practice	Yes ☐ No X

Sample No: approximately 40-50 patients a day during the study Procedure codes to identify sample: N/A

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes X No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes X No ☐

Is this project part of an agreed departmental rolling programme? Yes ☐ No X

Rolling programme duration (number of years): N/A

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Is Clinical Audit Team support required? Yes ☐ No X

If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*
Will the audit involve direct patient contact? Yes ☐ No X

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A X

Anticipated start date:1st of April or as soon after that as possible once/if approval given.

Anticipated project completion date: 1st July or up to 6 months. (if covid 19 pandemic last longer

Anticipated Action Plan Submission date: Click here to enter text.

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
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Departmental Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

The Walton Centre NHS Foundation Trust

Project Prioritisation Assessment Tool

Audit title: AUDIT ON ANAESTHESIA MANAGEMENT OF EMOBLISATION OF INTRACRANIAL AV MALFORMATION

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-

Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume		(x2)
High risk		(x3)
Known quality issue		(x3)
Wide variation in practice	Y	
NICE / NCEPOD related audit		(x3)
Defined measurable standards available		
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**C1**	

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

Clinical Audit / Service Evaluation Registration Form

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- the data is completely anonymous;
- it is not possible to identify participants from any resulting report;
- use of the data will not cause substantial damage and distress

Please note that to complete this form your project **must be clinical audit or service evaluation**. If you are unsure whether your project is clinical audit, service review or research brief definitions are given below as a guide:

Clinical Audit

- Measures existing practice against **best practice**, **evidence based clinical standards** *(this may include Royal College, British Association, NICE or Local guidance etc.)*

Research

- Generates new knowledge where there is no or limited research evidence available and which has the potential to be generalisable.

Service Evaluation:

- Seeks to evaluate the effectiveness or efficiency of a new or existing service to help inform local decision making (has been also referred to as service review, benchmarking or a baseline audit). This includes patient or staff satisfaction surveys.

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit ☒ Service Evaluation ☐**

Audit / Service Evaluation Title: AUDIT ON ANAESTHESIA MANAGEMENT OF EMOBLISATION OF INTRACRANIAL AV MALFORMATION

Division: Neurology ☐ Neurosurgery ☒ Please specify department Click here to enter text.

Project Lead:

Contact No: Bleep No:

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale

Intracranial AV Malformation is managed by either surgical excision or embolisation by intervention radiologist. Later one is minimal invasive with good outcome. During recent year there is significant change in technique of embolisation of AV Malformation. In recent years most of AV Malformation are embolised through arterial and venous route, which is observed as better than the arterial route alone.

Newer technique of embolisation needs intraprocedure hypotension during venous phase of embolisation. This audit is to review the current practise.

Methodology

1) Retrospective audit of all patients who underwent arterial and venous embolisation of intracranial AV Malformation 2) Patient data collection form attached

Aims / Objectives

To evaluate current practise, measure the outcomes and associated complications

Standards / Criteria Details (service evaluation N/A)

Not available

Guideline / Standards available: Yes ☐ No ☒

If yes, please attach a copy or provide web link to the most current version:

Name of Standard / guideline: Click here to enter text.

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☐ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☐	No ☒
High cost	Yes ☐	No ☒
Known quality issue	Yes ☐	No ☒
Wide variation in practice	Yes ☒	No ☐

Sample No: 15-20 **Procedure codes to identify sample:** Click here to enter text.

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☒ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☒ Single disciplinary: ☐

Is Clinical Audit Team support required? Yes ☐ No ☒

If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*

Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☐

Anticipated start date: Soon after Audit approval

Anticipated project completion date: 3 months from audit approval

Anticipated Action Plan Submission date: 6 months from audit approval

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Departmental Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Registration Form

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- it is not possible to identify participants from any resulting report;
- use of the data will not cause substantial damage and distress

Please note that to complete this form your project **must be clinical audit or service evaluation**. If you are unsure whether your project is clinical audit, service review or research brief definitions are given below as a guide:

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Research

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Service Evaluation:

- Seeks to evaluate the effectiveness or efficiency of a new or existing service to help inform local decision making (has been also referred to as service review, benchmarking or a baseline audit). This includes patient or staff satisfaction surveys.

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit** ☒ **Service Evaluation** ☐

Audit / Service Evaluation Title: Audit of Stroke Thrombectomy Times & Outcomes during the COVID Pandemic

Division: Neurology ☐ Neurosurgery ☒ Please specify department **Anaesthesia**

Project Lead:

Contact No: Bleep No:

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)
Click here to enter text.

Background / Rationale

Intraarterial thrombectomy for stroke is a service provided by our trust currently 9am-5pm 7 days a week.During the current COVID Pandemic extra precautions are being implemented.They include changes in the way this service is done in terms of extra PPE,Location of Anaesthesia induction & extubation,recovery-with a view to minimise AGPs and facilitate decontamination.This has increased the time scales involved in every part of the patient journey.We plan to audit some of the times involved to determine the influence the effect of the COVID specific modifications to our routine practice in terms of the timing and outcomes.This will inform us and help us modify and improve this service and our practice to the benefit of patients in terms of outcomes since the whole process is timecritical. Also the COVID Pandemic is going to be longterm and this miniaudit will help us improve and modify our practice.

Methodology

1.Retrospective Mini audit; 2. Review & Record -Arrival to Femoral Puncture,Arrival to Revascularisation,Duration of Anaesthesia,Postprocedure destination -The above will be retrieved from Patients' Clinical,Radiology,Theatre,Anaesthesia records ; 3. Study period- 17/3/20-17/5/20 ; 4. Likely to review ~20 patients during this period.For other details please refer Audit Data sheet.These will be compared with our previous figures from similar Audits conducted in 2018/19.This will help us determine the quantum of the delays due to COVID precautions and their assosciation with outcomes.We will obtain future outcomes using the scoring systems used for stroke follow up from the clinical records.

Aims / Objectives

Review modify and improve the current practice.

Standards / Criteria Details (service evaluation N/A)

N/A

Guideline / Standards available: Yes ☐ No ☒

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: e of Standard / guideline: NSF ☐ NICE ☐
Royal College ☐

Trust ☐ Other ☒ State other: times from previous Audits from the Pre COVID period

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☒ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☐	No ☒
High cost	Yes ☐	No ☒
Known quality issue	Yes ☐	No ☒
Wide variation in practice	Yes ☐	No ☒

Sample No: About 20 cases Procedure codes to identify sample: Click here to enter text.

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☒ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☒ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☒

Is Clinical Audit Team support required? Yes ☐ No ☒
If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is <u>not</u> part of the patients usual treatment or care please explain how in this section)*
Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date:May-June 2020

Anticipated project completion date: Jan 2021

Anticipated Action Plan Submission date:2 months after the date of completion.

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)*** __ _____ Date: 12/05/20

Comments Own project-in appropriate for me to comment

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☒ No ☐

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Action Plan

Ref no: NS 294

Clinical Audit Title	Audit on Anaesthetic management and outcome of patients undergoing posterior circulation stroke thrombectomy		
Date audit complete	30/06/20	**Date action plan completed**	22/04/21
Auditor		**Name of policy / guideline**	
Division	Neurosurgery	**Source of policy / guideline**	

Summary of Findings:

- 14 patients underwent mechanical thrombectomy for PCS during the audit period.
- Of these 11 were male and 3 were female.
- Age distribution ranged from 44 to 79 years.
- Mean NIHSS score was 13 with a range of 1 to 42.
- Onset of symptoms to arrival time at the hospital ranged from 240 to 1020 minutes.
- Mean door-to-needle time was 23 minutes.
- 12 procedures were performed under GA and 2 patients had conscious sedation.
- 7 of the 12 GA cases were GA transfers from referring hospitals.
- All the patients had vertebra-basilar involvement and were transferred to critical care after the procedure.
- Both the patients in the conscious sedation group survived with a good functional outcome.
- 50% of the patients who received a GA died within 3 months of the procedure. 5 patients had a failed procedure and 1 patient suffered a re-occlusion of the vessel after successful thrombectomy.
- 6 of the 14 patients had died at 90 days. (Mortality rate:42%)

Key success:

Please concisely state the key success identified by the project – if none identified please state N/A

- Our overall mortality is comparable to the one quoted in the literature (W Brinjikji et al. Conscious Sedation Versus General Anesthesia During Endovascular Acute Ischemic Stroke Treatment: A Systematic Review and Meta- Analysis. AJNR Am J Neuroradiol 2015 Mar;36(3):525-9

Key concerns:

- *N/A*

Recommendations discussed:

- Although there was increased mortality in GA group (50%) when compared to sedation group (0%) in our audit, our sample size was small we could not conclude any one technique is superior to other. There was no observed difference in the outcomes between the GA group and LA/sedation group in a large study of 1200 patients
- Some of these patients (58%) were already intubated prior to transfer; therefore we cannot choose a particular technique.

Presentation / Dissemination of Project
Date findings were presented / disseminated: 10/09/20
Department where discussed or presented: Anaesthetic departmental audit meeting.

Actions agreed following recommendations discussed:-
**Please ensure each action has a named lead, timescale and reportable group stated on the action plan below. Please list the evidence of the action implementation e.g SOP, protocol, standardised template, presentation or meeting minutes etc*

Issue	Action required	Named lead for action	Timescale	Evidence	Reportable to (group/meeting)
1) None					

Re-audit date: None **If no re-audit planned please give reasons why?** Will collect the data as part of the stroke thrombectomy audit.

Will this be an on-going audit? Yes ☐ No X

Are there any potential barriers / problems to prevent the implementation of the above actions? Yes ☐ No X☐

If yes to the above please state who the issues have been referred to:

Name _____ **Designation** _____ **Date referred** _____

Signature:_____ **Date:**_____

Have any issues been logged on the risk register? Yes ☐ No X☐ N/A ☐

Please provide details of issue(s) logged on the risk register:

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Registration Form

Clinical Audit definition

Clinical Audit is a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and the implementation of change. Aspects of the structure, processes and outcomes of care are selected and systematically evaluated against explicit criteria. Where indicated, changes are implemented at an individual, team or service level and further monitoring is used to confirm improvement in healthcare delivery.

Service evaluation

Service Evaluation is undertaken to benefit those who use a particular service and is designed and conducted to define or judge current service. Your participants will normally be those who use the service or deliver it. It involves an intervention where there is no change to the standard service being delivered (e.g. no randomization of service users into different groups). This does not require ethical approval.
It is possible to use data collected from participants during a service evaluation for later research as long as:

- the data is completely anonymous;
- it is not possible to identify participants from any resulting report;
- use of the data will not cause substantial damage and distress

Please note that to complete this form your project **must be clinical audit or service evaluation**. If you are unsure whether your project is clinical audit, service review or research brief definitions are given below as a guide:

Clinical Audit

- Measures existing practice against **best practice**, **evidence based clinical standards** *(this may include Royal College, British Association, NICE or Local guidance etc.)*

Research

- Generates new knowledge where there is no or limited research evidence available and which has the potential to be generalisable.

Service Evaluation:

- Seeks to evaluate the effectiveness or efficiency of a new or existing service to help inform local decision making (has been also referred to as service review, benchmarking or a baseline audit). This includes patient or staff satisfaction surveys.

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit** ☒ **Service Evaluation** ☐

Audit / Service Evaluation Title:

Division: Neurology ☐ Neurosurgery ☒ Please specify department **Anaesthesia**

Project Lead:

Contact No: Bleep No:

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)
Click here to enter text.

Background / Rationale

Intraarterial thromectomy for stroke of the posterior circulation and its anaesthetic management isn't studies extensively. We would like to review our institution's methodology and outcome.

Methodology

1.Retrospective audit; 2. Anaesthetic Chart review; 3. Study period 2013-2019; 4. Likely to review ~20 patients during this period.

Aims / Objectives

Review the current practice; Effect of the type of anaesthesia on the outcome.

Standards / Criteria Details (service evaluation N/A)

N/A

Guideline / Standards available: Yes ☐ No ☒

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: NICE guidelines for intervention evidence review 2018.

Source of Standard / guideline: NSF ☐ NICE ☒ Royal College ☐
Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☒ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☐	No ☒
High cost	Yes ☐	No ☒
Known quality issue	Yes ☐	No ☒

Wide variation in practice Yes ☒ No ☐

Sample No: 10-20 Procedure codes to identify sample: Click here to enter text.

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☒ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☒

Is Clinical Audit Team support required? Yes ☐ No ☒

If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number _5___ / per week _____

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*

Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date:June 2020

Anticipated project completion date: September 2020

Anticipated Action Plan Submission date:2 months from the date of completion.

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**

- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)***

Date: 20/5/20

Comments

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☒ No ☐

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Registration Form

Clinical Audit definition

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Service evaluation

Service Evaluation is undertaken to benefit those who use a particular service and is designed and conducted to define or judge current service. Your participants will normally be those who use the service or deliver it. It involves an intervention where there is no change to the standard service being delivered (e.g. no randomization of service users into different groups). This does not require ethical approval.
It is possible to use data collected from participants during a service evaluation for later research as long as:

- the data is completely anonymous;
- it is not possible to identify participants from any resulting report;
- use of the data will not cause substantial damage and distress

Please note that to complete this form your project **must be clinical audit or service evaluation**. If you are unsure whether your project is clinical audit, service review or research brief definitions are given below as a guide:

Clinical Audit

- Measures existing practice against **best practice**, **evidence based clinical standards** *(this may include Royal College, British Association, NICE or Local guidance etc.)*

Research

- Generates new knowledge where there is no or limited research evidence available and which has the potential to be generalisable.

Service Evaluation:

- Seeks to evaluate the effectiveness or efficiency of a new or existing service to help inform local decision making (has been also referred to as service review, benchmarking or a baseline audit). This includes patient or staff satisfaction surveys.

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - HIST/349 Project Type: - **Clinical Audit ☒ Service Evaluation ☐**

Audit / Service Evaluation Title: Re-audit of molecular data obtained on gliomas between June 2019 to May 2020 at the Walton Centre

Division: Neurology ☐ Neurosurgery ☒ Please specify department **The Neuroscience Laboratories**

Project Lead:

Contact No: Bleep No: Click here to enter text.

Email address:

Audit / service evaluation supervisor: Click here to enter text.

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale

This is a re-audit to follow up the results obtained from 'Audit of molecular data obtained on gliomas between January 2018 to May 2019 at the Walton Centre'.

Methodology

As before this retrospective study will include glioma cases which were sent for NGS analysis between June 2019 and May 2020. In-house IHC results (on IDH1, ATRX, H3.3K27M) and results of PCR, FISH and MGMT promoter methylation analysis performed on this cohort will also be taken into consideration. The data will be retrieved from laboratory information system and analysed.

Aims / Objectives

To review the completeness of the molecular diagnostic pathway and assess compliance with the NICE guidelines.

Standards / Criteria Details (service evaluation N/A)

The National Institute Health and Care Excellence (NICE) guidelines on Brain tumours (primary) and brain metastases in adults (published on 11 July 2018) recommend:

1. The use of following molecular markers to determine prognosis or guide treatment for glioma:
   - IDH1 and IDH2 mutations
   - ATRX mutations to identify IDH mutant astrocytomas and glioblastomas (GBM)
   - 1p/19q codeletion to identify oligodendrogliomas
   - Histone H3.3K27M mutations in midline gliomas
   - BRAF fusion and gene mutation to identify pilocytic astrocytoma (PA)
2. Test all high-grade glioma specimens for MGMT promoter methylation to inform prognosis and guide treatment.
3. Consider testing IDH-wildtype glioma specimens for TERT promoter mutations for prognostication.

Click here to enter text.

Guideline / Standards available: Yes ☒ No ☐

If yes, please attach a copy or provide web link to the most current version:
https://www.nice.org.uk/guidance/ng99/chapter/Recommendations

Name of Standard / guideline: As above.

Source of Standard / guideline: NSF ☐ NICE ☒ Royal College ☐
Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☒ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☐	No ☒
High cost	Yes ☐	No ☒
Known quality issue	Yes ☐	No ☒
Wide variation in practice	Yes ☐	No ☒

Sample No: 75 Procedure codes to identify sample: NGS code on TD-HC

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☐ No ☒

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☒ No ☐

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): ongoing

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Rolling programme duration (number of years): ongoing

Is Clinical Audit Team support required? Yes ☐ No ☒
If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*

Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date: July 2020

Anticipated project completion date: November 2020

Anticipated Action Plan Submission date: December 2020

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**

- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature*** Date: 02/06/2020

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☒

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Action Plan

Ref no: NS 295 HIST/349

Clinical Audit Title	Re-audit of molecular data obtained on gliomas reported at WCFT between June 2019 and May 2020.		
Date audit complete	26/01/2021	**Date action plan completed**	26/01/2021
Auditor		**Name of policy / guideline**	Guidelines on brain tumours (primary) and brain metastases
Division	Neurosurgery, Anaesthesia, Critical Care, Pain and Pathology	**Source of policy / guideline**	NICE

Summary of Findings:
Please concisely state the main conclusions of the project using bullet points

- **Please see attached copy of the audit-**

Key success:
Please concisely state the key success identified by the project – if none identified please state N/A

- **This audit showed that the gliomas reported at The Walton Centre between June 2019 and May 2020 are in concordance with the 2018 NICE guidelines.**
- **Shortfalls identified in the previous audit (HIST 347) have not recurred.**

Key concerns:
Please concisely state the key concerns identified by the project using bullet points– if none identified please state N/A

- **N/A**

Recommendations discussed:
Please concisely summarise the recommendations that were discussed following the completion of the project

- Since the revised 4th edition of WHO classification (2016), a lot has changed in CNS tumour diagnosis and pathologists at the Walton Centre have strived to keep up with the changes. Our data has now been audited twice against the NICE guidelines (2018). RCPath published a Molecular diagnostic algorithm for adult gliomas in March 2020 which is far more advanced than the NICE guidelines. Currently we follow the standards published by the RCPath. The 5th edition of the WHO classification of CNS tumours is overdue. It is expected to incorporate some important changes as outlined in cIMPACT recommendations. In view of this a fresh audit will be planned once all the recommended changes

have been implemented in the department.

Presentation / Dissemination of Project
Date findings were presented / disseminated: Will be presented in the next departmental audit meeting

Department where discussed or presented: The Neuroscience Laboratories

Actions agreed following recommendations discussed:-
**Please ensure each action has a named lead, timescale and reportable group stated on the action plan below. Please list the evidence of the action implementation e.g SOP, protocol, standardised template, presentation or meeting minutes etc*

Issue	Action required	Named lead for action	Timescale	Evidence	Reportable to (group/meeting)
1) New WHO CNS Tumour Book is overdue and is expected in 2021.	Implementation of the new recommendations in the department.		-	-	Neuropathology & Neuro-oncology

Re-audit date X **If no re-audit planned please give reasons why?** New WHO Tumour Book is expected in 2021. Our practice will be audited once changes recommended by WHO are in place.

Will this be an on-going audit? Yes ☐ No ☒

Are there any potential barriers / problems to prevent the implementation of the above actions? Yes ☐ No ☒

If yes to the above please state who the issues have been referred to:

Name _____ **Designation** _____ **Date referred** _____

Signature: _____ **Date:** _____

Have any issues been logged on the risk register? Yes ☐ No ☐ N/A ☒

Please provide details of issue(s) logged on the risk register:

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Registration Form

Clinical Audit definition

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Service evaluation

Service Evaluation is undertaken to benefit those who use a particular service and is designed and conducted to define or judge current service. Your participants will normally be those who use the service or deliver it. It involves an intervention where there is no change to the standard service being delivered (e.g. no randomization of service users into different groups). This does not require ethical approval.
It is possible to use data collected from participants during a service evaluation for later research as long as:

- the data is completely anonymous;
- it is not possible to identify participants from any resulting report;
- use of the data will not cause substantial damage and distress

Please note that to complete this form your project **must be clinical audit or service evaluation**. If you are unsure whether your project is clinical audit, service review or research brief definitions are given below as a guide:

Clinical Audit

- Measures existing practice against **best practice**, **evidence based clinical standards** *(this may include Royal College, British Association, NICE or Local guidance etc.)*

Research

- Generates new knowledge where there is no or limited research evidence available and which has the potential to be generalisable.

Service Evaluation:

- Seeks to evaluate the effectiveness or efficiency of a new or existing service to help inform local decision making (has been also referred to as service review, benchmarking or a baseline audit). This includes patient or staff satisfaction surveys.

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit ☐ Service Evaluation ☒**

Audit / Service Evaluation Title: CSF rhinorrhoea after endonasal intervention to the anterior skull base (CRANIAL)

Division: Neurology ☐ Neurosurgery ☒ Please specify department Click here to enter text.

Project Lead:

Contact No: Bleep No:

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale

The endonasal transsphenoidal approach (TSA) has emerged as the preferred approach in order to treat pituitary adenoma and related sellar pathologies owing to its superior effectiveness and safety profile when compared to transcranial approaches. The recently adopted expanded endonasal approach (EEA) has improved access to the ventral skull base whilst retaining the principles of minimally invasive surgery. Despite the advantages these approaches offer, cerebrospinal fluid (CSF) leak remains a common complication. There is currently a lack of comparative evidence to guide the best choice of skull base reconstruction, resulting in considerable heterogeneity of current practice. The aim of this study is to determine: (1) the scope of the methods of skull base repair; and (2) the corresponding rates of post-operative CSF rhinorrhoea in contemporary neurosurgical practice in the UK & Ireland.

Methodology

We will adopt a multicentre, prospective, observational cohort design. All neurosurgical units (NSUs) in the UK and Ireland performing the relevant surgeries (TSA and EEA) will be eligible to participate. Eligible cases will be prospectively recruited over 6 months with 6 months of post-op follow-up. Anonymised data will be collected locally and submitted to a secure web-based central database (Castor Electronic Data Capture). Data points collected will include: demographics, tumour characteristics, operative data, and post-operative outcomes. Illustrations and clear definitions will be presented to support the accurate recognition of the various skull base repair techniques. The primary outcomes of the study will be: (1) methods of intra-operative skull base reconstruction used and (2) post-operative CSF rhinorrhoea requiring intervention (CSF diversion and/or operative repair). Pooled data will be analysed using descriptive statistics. All skull base repair methods used and the proportion of total surgeries that adhere to each method will be presented. CSF leak rates for TSA and EEA will be compared against rates listed in the literature.

Aims / Objectives

The need for this multicentre, prospective, observational study is highlighted by the relative paucity of literature and the resultant lack of consensus on the topic. It is hoped that the results will give insight into contemporary practice in the UK and Ireland and inform future studies. Therefore, the aim of this study is to determine: (1) the scope of the methods of skull base repair; and (2) the corresponding rates of post-operative CSF rhinorrhoea in contemporary neurosurgical practice in the UK & Ireland.

Standards / Criteria Details (service evaluation N/A)

N/A

Guideline / Standards available: Yes ☐ No ☒

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: n/a

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☐ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☒	No ☐
High cost	Yes ☒	No ☐
Known quality issue	Yes ☒	No ☐
Wide variation in practice	Yes ☒	No ☐

Sample No: n/a Procedure codes to identify sample: n/a

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☒ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): n/a

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Is Clinical Audit Team support required? Yes ☐ No ☒
If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*

Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date:To be restarted nationally – delayed due to Covid

Anticipated project completion date: 6 MONTHS DATA COLLECTION,

Anticipated Action Plan Submission date:12 MONTHS FROM START, PENDING RESULTS FROM NATIONAL TEAM RUNNING PROJECT

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead *(Signature)* _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead *(Signature)* _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Action Plan

Ref no: NS 297

Clinical Audit Title	**Laterality of ACDF**		
Date audit complete	15/09/2020	**Date action plan completed**	
Auditor		**Name of policy / guideline**	
Division	Neurosurgery	**Source of policy / guideline**	

Summary of Findings:

Please concisely state the main conclusions of the project using bullet points

- *146 eligible patients identified*
- *64 had right sided anterolateral approach to subaxial spine (R group)*
- *82 had left sided anterolateral approach to subaxial spine (L group)*
- *Rate of dysphagia: 3/64 R (1 permanent, all C3/4 level involved), 2/82 L (permanent)*
- *Rate of dysphonia: 0/64 R, 2/82 (transient)*
- *Rate of Horner's syndrome: 0/146*
- *Rate of major vessel injury: 1/64 R, 0/82 L*
- *Early reoperation rate: 1/64 R (1 swelling, infection)*
- *Late reoperation rate: 0*
- *Rate of surgical site infection: 1/64 R (requiring washout and iv antibiotic treatment)*
- *No significant difference in PROMs (VAS, COMI as per Spine Tango Database)*

Key success:

Please concisely state the key success identified by the project – if none identified please state N/A

- **Confirmation that in anterolateral subaxial spine approaches for ACDF, side of approach does not significantly correlate with different early and late complication rate as well as patient reported outcome measures (COMI and VAS)**
-

Key concerns:

Please concisely state the key concerns identified by the project using bullet points– if none identified please state N/A

- *Retrospective analysis of database*
- *Mixed 1 and 2 level cases*
- *Mixed aetiology (myelopathy and radiculopathy)*

Recommendations discussed:
Please concisely summarise the recommendations that were discussed following the completion of the project

- Not formally discussed – my opinion is that no change of practice is needed as results very much reflect findings in the literature
-

Presentation / Dissemination of Project
Date findings were presented / disseminated: _____

Department where discussed or presented: _____

Actions agreed following recommendations discussed:-
**Please ensure each action has a named lead, timescale and reportable group stated on the action plan below. Please list the evidence of the action implementation e.g SOP, protocol, standardised template, presentation or meeting minutes etc*

Issue	Action required	Named lead for action	Timescale	Evidence	Reportable to (group/meeting)
1)					
2)					
3)					
4)					

Re-audit date _____ **If no re-audit planned please give reasons why?** _____

Will this be an on-going audit? Yes ☐ No ☐

Are there any potential barriers / problems to prevent the implementation of the above actions? Yes ☐ No ☐

If yes to the above please state who the issues have been referred to:

Name _____ **Designation** _____ **Date referred** _____

Signature:_____ **Date:**_____

Have any issues been logged on the risk register? Yes ☐ No ☐ N/A ☐

Please provide details of issue(s) logged on the risk register:

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Registration Form

Clinical Audit definition

Clinical Audit is a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and the implementation of change. Aspects of the structure, processes and outcomes of care are selected and systematically evaluated against explicit criteria. Where indicated, changes are implemented at an individual, team or service level and further monitoring is used to confirm improvement in healthcare delivery.

Service evaluation

Service Evaluation is undertaken to benefit those who use a particular service and is designed and conducted to define or judge current service. Your participants will normally be those who use the service or deliver it. It involves an intervention where there is no change to the standard service being delivered (e.g. no randomization of service users into different groups). This does not require ethical approval.
It is possible to use data collected from participants during a service evaluation for later research as long as:

- the data is completely anonymous;
- it is not possible to identify participants from any resulting report;
- use of the data will not cause substantial damage and distress

Please note that to complete this form your project **must be clinical audit or service evaluation**. If you are unsure whether your project is clinical audit, service review or research brief definitions are given below as a guide:

Clinical Audit

- Measures existing practice against **best practice**, **evidence based clinical standards** *(this may include Royal College, British Association, NICE or Local guidance etc.)*

Research

- Generates new knowledge where there is no or limited research evidence available and which has the potential to be generalisable.

Service Evaluation:

- Seeks to evaluate the effectiveness or efficiency of a new or existing service to help inform local decision making (has been also referred to as service review, benchmarking or a baseline audit). This includes patient or staff satisfaction surveys.

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit ☒ Service Evaluation ☐**

Audit / Service Evaluation Title: Laterality of ACDF

Division: Neurology ☐ Neurosurgery ☒ Please specify department Click here to enter text.

Project Lead:

Contact No: Ext:

Email address:

Audit / service evaluation supervisor: Click here to enter text.

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale

Right sided anterolateral neck approach for cervical spine fusion is historically linked to higher incidence of dysphagia and dysphonia yet is routinely used in spinal care. Left sided approach has been used at Walton Neurosurgery for last four years by two of the project members. No evidence in the literature or guidelines available with regards to which side (if any) carries more prevalent or significant perioperative complications in comparative series.

Methodology

Retrospective analysis of all right and left anterior cervical discectomy and fusion (ACDF) one or two levels primary operations done at Walton from Feb. 2016 to Feb. 2020 under two Consultant members of the project, who routinely perform both right and left approaches. Independent data collection by ST member of the project.

Aims / Objectives

To highlight any differences in the prevalence and nature of perioperative (early) complications in right and left approaches for ACDF, namely Postoperative Haematoma requiring evacuation, Recurrent Laryngeal Nerve Palsy, Dysphagia, Dysphonia, Horner's syndrome, Pharyngeal or Oesophageal injury, Carotid Artery injury, Jugular Vein injury, and any reason for unintended return to the operating theatre in the first 30 days after the index procedure.

Standards / Criteria Details (service evaluation N/A)

Anterolateral approaches to the lower cervical spine for decompression and fusion have been described in the 1950's independently by Cloward (Neurosurgery, right sided approach) and Robinson (Orthopaedic Surgeon, left sided approach) and are still taught and practiced today in this polarised fashion by spinal surgeons trained in the two different specialties. Since 2016, Walton Neurosurgery has had Orthopaedic Consultants who are familiar with both approaches. As the literature is non-conclusive with regards to the reasons behind why either approach should be safer, it would be useful to compare the internal Walton data to develop evidence and implement the service if needed.

Guideline / Standards available: Yes ☒ No ☐

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: Spine (Phila Pa 1976). 2007 Oct 1;32(21):2310-7. doi: 10.1097/BRS.0b013e318154c57e. Anterior Cervical Discectomy and Fusion Associated Complications. Kostas N , Eftychia Z, Leonidas G et al.

Source of Standard / guideline: NSF ☐ NICE ☒ Royal College ☐
Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☒ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☒	No ☐
High cost	Yes ☐	No ☒
Known quality issue	Yes ☐	No ☒
Wide variation in practice	Yes ☒	No ☐

Sample No: 130 Procedure codes to identify sample: Click here to enter text.

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☒ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Is Clinical Audit Team support required? Yes ☒ No ☐
If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☒

(If not required please, attach a copy of the tool to be used)

- Database design ☒
- Data entry ☒
- Analysis ☒
- Presentation ☐

Collection of case notes ☒ Total number __130__ / per week __35__

Patient Contact / Involvement – *(If project involves patient contact that is <u>not</u> part of the patients usual treatment or care please explain how in this section)*
Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date: asap

Anticipated project completion date: Click here to enter text.

Anticipated Action Plan Submission date: Click here to enter text.

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead *(Signature)* _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead *(Signature)* _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Action Plan

Ref no: NS 301

Clinical Audit Title	NS 201 - Re-audit of spinal deformity practice		
Date audit complete	28/09/2020	**Date action plan completed**	
Auditor		**Name of policy / guideline**	
Division	Neurosurgery	**Source of policy / guideline**	

Summary of Findings:
Please concisely state the main conclusions of the project using bullet points

- *Rate of mechanical complications in adult spinal deformity surgery correlated with age, fusion to pelvis and extent of correction*
- *Rate of surgical site infection has decreased since routine use of Vancomycin powder*
- *No pedicle screws were revised for misplacement after routine use of intraoperative Ct / navigation*

Key success:
Please concisely state the key success identified by the project – if none identified please state N/A

- **Lower rate of pedicle screw misplacement since intraoperative CT implemented**
- **Lower rate of SSI since second since Vancomycin powder used**

Key concerns:
Please concisely state the key concerns identified by the project using bullet points– if none identified please state N/A

- **Mechanical complications increase since part I of Audit (pre 2019) with higher age and complexity of Patients treated**
- **Two catastrophic neurological complications (one stroke, one spinal cord injury) seen in two different Patients over 70**

Recommendations discussed:
Please concisely summarise the recommendations that were discussed following the completion of the project

- To be discussed
-

Presentation / Dissemination of Project
Date findings were presented / disseminated: _____

Department where discussed or presented: _____

Actions agreed following recommendations discussed:-
*****Please ensure each action has a named lead, timescale and reportable group stated on the action plan below. Please list the evidence of the action implementation e.g SOP, protocol, standardised template, presentation or meeting minutes etc*

Issue	Action required	Named lead for action	Timescale	Evidence	Reportable to (group/meeting)
1)					
2)					
3)					
4)					

Re-audit date _____ **If no re-audit planned please give reasons why?** _____

Will this be an on-going audit? Yes ☐ No X

Are there any potential barriers / problems to prevent the implementation of the above actions? Yes ☐ No X

If yes to the above please state who the issues have been referred to:

Name _____ **Designation** _____ **Date referred** _____

Signature:_____ **Date:**_____

Have any issues been logged on the risk register? Yes ☐ No ☐ N/A ☐

Please provide details of issue(s) logged on the risk register:

Version: 2019
Review: 2020

The Walton Centre NHS
NHS Foundation Trust

Project Prioritisation Assessment Tool

Audit title: Re-audit of spinal deformity practice

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-

Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost	Y	(x3)
High volume		(x2)
High risk	Y	(x3)
Known quality issue		(x3)
Wide variation in practice	Y	
NICE / NCEPOD related audit	Y	(x3)
Defined measurable standards available	Y	
Re-audit / repeat service evaluation	Y	(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**13**	**Lvl 3 Cat A**

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit** ☐ **Service Evaluation** ☐

Audit / Service Evaluation Title: Re-audit of spinal deformity practice

Division: Neurology ☐ Neurosurgery ☒ Please specify department Click here to enter text.

Project Lead:

Contact No: Bleep No: Click here to enter text.

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)
Click here to enter text.

Background / Rationale
Re-audit of spinal deformity practice (first done in 2018)

Methodology

PROMs and complications survey

Aims / Objectives
To compare local practice to international standards and highlight areas of improvement or strengths

Standards / Criteria Details (service evaluation N/A)

COMi scores

Guideline / Standards available: Yes ☒ No ☐

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: Click here to enter text.

Source of Standard / guideline: NSF ☐ NICE ☒ Royal College ☐
Trust ☐ Other ☒ State other: British Scoliosis Society

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☒ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☒	No ☐
High cost	Yes ☒	No ☐
Known quality issue	Yes ☐	No ☒
Wide variation in practice	Yes ☒	No ☐

Sample No: Click here to enter text. **Procedure codes to identify sample:** Click here to enter text.

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☒ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☒ No ☐

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Is Clinical Audit Team support required? Yes ☐ No ☒

If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is <u>not</u> part of the patients usual treatment or care please explain how in this section)*

Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date:as approved

Anticipated project completion date: one month

Anticipated Action Plan Submission date:Sept 2020

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
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- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Registration Form

Clinical Audit definition

Clinical Audit is a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and the implementation of change. Aspects of the structure, processes and outcomes of care are selected and systematically evaluated against explicit criteria. Where indicated, changes are implemented at an individual, team or service level and further monitoring is used to confirm improvement in healthcare delivery.

Service evaluation

Service Evaluation is undertaken to benefit those who use a particular service and is designed and conducted to define or judge current service. Your participants will normally be those who use the service or deliver it. It involves an intervention where there is no change to the standard service being delivered (e.g. no randomization of service users into different groups). This does not require ethical approval.
It is possible to use data collected from participants during a service evaluation for later research as long as:

- the data is completely anonymous;
- it is not possible to identify participants from any resulting report;
- use of the data will not cause substantial damage and distress

Please note that to complete this form your project **must be clinical audit or service evaluation**. If you are unsure whether your project is clinical audit, service review or research brief definitions are given below as a guide:

Clinical Audit

- Measures existing practice against **best practice**, **evidence based clinical standards** *(this may include Royal College, British Association, NICE or Local guidance etc.)*

Research

- Generates new knowledge where there is no or limited research evidence available and which has the potential to be generalisable.

Service Evaluation:

- Seeks to evaluate the effectiveness or efficiency of a new or existing service to help inform local decision making (has been also referred to as service review, benchmarking or a baseline audit). This includes patient or staff satisfaction surveys.

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit** ☒ **Service Evaluation** ☐

Audit / Service Evaluation Title: Omission of critical medicines in intensive care

Division: Neurology ☐ Neurosurgery ☒ Please specify department:

Project Lead:

Contact No: - Bleep No:

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)
Click here to enter text.

Background / Rationale
Methodology
Aims / Objectives
Standards / Criteria Details (service evaluation N/A)

Please see attached

Guideline / Standards available: Yes ☒ No ☐

If yes, please attach a copy or provide web link to the most current version: Medicines Policy

Name of Standard / guideline: Section 3.3 of Medicines Policy (Critical Medicines and Missed Doses)

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☒ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☒ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☒	No ☐
High cost	Yes ☐	No ☒
Known quality issue	Yes ☐	No ☒
Wide variation in practice	Yes ☐	No ☒

Sample No: Weekly for 6-8 weeks **Procedure codes to identify sample:** Click here to enter text.

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☐ No ☒

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Rolling programme duration (number of years): Click here to enter text.

Is Clinical Audit Team support required? Yes ☐ No ☒

If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is <u>not</u> part of the patients usual treatment or care please explain how in this section)*

Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date: August 2020

Anticipated project completion date: October 2020

Anticipated Action Plan Submission date: November 2020

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
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- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☒ No ☐

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Action Plan

Ref no: NS 304

Clinical Audit Title	Omission and delay of critical medicines in neurocritical care		
Date audit complete	25/11/20	**Date action plan completed**	12/01/21
Auditor		**Name of policy / guideline**	Medicines Policy
Division	Pharmacy	**Source of policy / guideline**	Trust intranet

Summary of Findings:

- From 2173 doses of critical medicines reviewed, 37 (1.7%) inappropriately omitted or delayed
- Majority of delayed critical medicines were stat doses, which on average were delayed by 2 hours and 5 minutes
- Majority of omitted critical medicines were due to lack of documentation (i.e. not signed for as given, or no reason for omission documented)

Key success:

- Rate of omission/delay lower compared to other ICUs/Trusts according to literature
- No patients came to any harm from any of the delayed/omitted critical medicines
- No delays/omissions secondary to failure to adhere to neurosurgical post-operative instructions identified

Key concerns:

- Poor documentation accounting for large proportion of inappropriately omitted critical medicines
- Neurosurgical administration of intrathecal antibiotics contributing largely to delayed critical medicines
- Need for awareness within nursing staff of which medicines deemed critical, and communication between prescribers and nurses re. stat doses

Recommendations discussed:

- List of critical medicines to be incorporated into each patient's bedside folder
- Pharmacy bulletin to be emailed to Horsley staff and included in Horsley internal newsletter summarising audit findings and outcomes
- Pharmacy or medicines-related inductions for new nurses and doctors to be updated based on findings/concerns
- Senior nurse for clinical governance currently recruiting nurse to undertake re-audit 6-monthly (pharmacists to contribute to data analysis)
- ACCP previously agreed to undertake administration of intrathecal antibiotics on Horsley and are awaiting training and sign-off

Presentation / Dissemination of Project

Date findings were presented / disseminated: Presented to Safer Medicines Group (05/01/21) and ITU Operational Group (12/01/21)
Department where discussed or presented: as above

Actions agreed following recommendations discussed:-

Issue	Action required	Named lead for action	Timescale	Evidence	Reportable to (group/meeting)
1) Raise awareness of critical medicines	List of critical medicines to be incorporated into each patient's bedside folder		2 months	Printed in end-of-bed folder	
2) Raise awareness of issues leading to inappropriate omission/delay of critical medicines	Pharmacy bulletin to be emailed to Horsley staff and included in Horsley internal newsletter summarising audit findings and outcomes		1 month	Pharmacy bulletin	
	Include audit findings/concerns in pharmacy-led induction for new doctors/nurses		3 months	Presentation	
3) Monitor progress following actions listed above	Re-auditing 6-monthly (with view to decrease frequency after 1 year)		6 months	Re-audit results	

Re-audit date Planned for April 2021 **If no re-audit planned please give reasons why?** _____

Will this be an on-going audit? Yes ☒ No ☐

Are there any potential barriers / problems to prevent the implementation of the above actions? Yes ☐ No ☒

If yes to the above please state who the issues have been referred to:

Name _____ **Designation** _____ **Date referred** _____

Signature: **Date:** 12/01/21

Have any issues been logged on the risk register? Yes ☐ No ☒ N/A ☐

Please provide details of issue(s) logged on the risk register:

The Walton Centre NHS Foundation Trust

Project Prioritisation Assessment Tool

Audit title: GlobalSurg/CovidSurg Week

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-
Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume	Y	(x2)
High risk	Y	(x3)
Known quality issue		(x3)
Wide variation in practice		
NICE / NCEPOD related audit		(x3)
Defined measurable standards available		
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**5**	**Lvl 5 Cat B**

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

Clinical Audit / Service Evaluation Registration Form

Clinical Audit definition

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Service evaluation

Service Evaluation is undertaken to benefit those who use a particular service and is designed and conducted to define or judge current service. Your participants will normally be those who use the service or deliver it. It involves an intervention where there is no change to the standard service being delivered (e.g. no randomization of service users into different groups). This does not require ethical approval.
It is possible to use data collected from participants during a service evaluation for later research as long as:

- the data is completely anonymous;
- it is not possible to identify participants from any resulting report;
- use of the data will not cause substantial damage and distress

Please note that to complete this form your project **must be clinical audit or service evaluation**. If you are unsure whether your project is clinical audit, service review or research brief definitions are given below as a guide:

Clinical Audit

- Measures existing practice against **best practice**, **evidence based clinical standards** *(this may include Royal College, British Association, NICE or Local guidance etc.)*

Research

- Generates new knowledge where there is no or limited research evidence available and which has the potential to be generalisable.

Service Evaluation:

- Seeks to evaluate the effectiveness or efficiency of a new or existing service to help inform local decision making (has been also referred to as service review, benchmarking or a baseline audit). This includes patient or staff satisfaction surveys.

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit** ☒ **Service Evaluation** ☐

Audit / Service Evaluation Title: GlobalSurg/CovidSurg Week

Division: Neurology ☐ Neurosurgery ☒ Please specify department **All neurosurgery subspec**

Project Lead:

Contact No: **Bleep No: N/A**

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale

The globalSurg/CovidSurg project lead by Birmingham has entered data for 35,840 patients, from 1005 hospitals in 86 countries. Results from the first analysis (including Walton data) has been published in The Lancet this month. The CovidSurg Cohort study has demonstrated the adverse outcomes of surgery in SARS-CoV-2 infected patients. Early signals from CovidSurg-Cancer study show that surgery following SARS-CoV-2 infection is associated with poor outcomes, even if surgery is several weeks after initial diagnosis. However, more granular data are needed to explore this.

Methodology

GlobalSurg | CovidSurg Week is an international multi-centre prospective cohort study which will require data input onto the online platform RedCap during a specified week in November 2020. A summary is attached to this application.

Aims / Objectives

(1) determine the optimal timing for surgery in patients previously infected with SARS-CoV-2
(2) determine key global surgical indicators, such as perioperative mortality rates

Standards / Criteria Details (service evaluation N/A)

An audit of mortality at 30 days, 30 day pulmonary complications, 30 day venous thromboembolism, and 30 day Clavien-Dindo grade. These are routinely collected and auditable criteria for surgical patients, but will be specifically evaluated in the context of previous COVID, COVID after surgery, and no COVID which will also be uploaded to the online platform. Therefore, no specific guideline exists for this purpose.

Guideline / Standards available: Yes ☐ No ☒

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: Not applicable

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐

Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☐ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☒	No ☐
High risk	Yes ☒	No ☐
High cost	Yes ☐	No ☒
Known quality issue	Yes ☐	No ☒
Wide variation in practice	Yes ☐	No ☒

Sample No: Unknown Procedure codes to identify sample: Not necessary

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☒ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☒

Is Clinical Audit Team support required? Yes ☐ No ☒
If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*
Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date: October 2020

Anticipated project completion date: November 2020

Anticipated Action Plan Submission date: May 2021

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE – not yet released.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

The Walton Centre NHS Foundation Trust

Project Prioritisation Assessment Tool

Audit title: Primrose – A national prospective observational study in breast cancer patients with central nervous system involvement in the UK

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-
Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost	y	(x3)
High volume		(x2)
High risk		(x3)
Known quality issue	y	(x3)
Wide variation in practice	y	
NICE / NCEPOD related audit	y	(x3)
Defined measurable standards available	y	
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project		
National / regional or multicentre project	y	(x2)
Total	**13**	**Lvl 3 Cat A**

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

Clinical Audit / Service Evaluation Registration Form

Clinical Audit definition

Clinical Audit is a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and the implementation of change. Aspects of the structure, processes and outcomes of care are selected and systematically evaluated against explicit criteria. Where indicated, changes are implemented at an individual, team or service level and further monitoring is used to confirm improvement in healthcare delivery.

Service evaluation

Service Evaluation is undertaken to benefit those who use a particular service and is designed and conducted to define or judge current service. Your participants will normally be those who use the service or deliver it. It involves an intervention where there is no change to the standard service being delivered (e.g. no randomization of service users into different groups). This does not require ethical approval.
It is possible to use data collected from participants during a service evaluation for later research as long as:

- the data is completely anonymous;
- it is not possible to identify participants from any resulting report;
- use of the data will not cause substantial damage and distress

Please note that to complete this form your project **must be clinical audit or service evaluation**. If you are unsure whether your project is clinical audit, service review or research brief definitions are given below as a guide:

Clinical Audit

- Measures existing practice against **best practice**, **evidence based clinical standards** *(this may include Royal College, British Association, NICE or Local guidance etc.)*

Research

- Generates new knowledge where there is no or limited research evidence available and which has the potential to be generalisable.

Service Evaluation:

- Seeks to evaluate the effectiveness or efficiency of a new or existing service to help inform local decision making (has been also referred to as service review, benchmarking or a baseline audit). This includes patient or staff satisfaction surveys.

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit ☒ Service Evaluation ☐**

Audit / Service Evaluation Title: Primrose – A national prospective observational study in breast cancer patients with central nervous system involvement in the UK

Division: Neurology ☐ Neurosurgery ☒ Please specify department **Neuro-Oncology**

Project Lead:

Contact No: Bleep No:

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details

Background / Rationale

PRIMROSE aims to use the trainee collaborative model to establish an observational prospective database that will aim to prospectively register all patients with newly diagnosed CNS involvement secondary to BC in the UK, and to collect data relating to presentation, diagnosis, management and outcome.

Methodology

This is a prospective multicentre audit co-ordinated by members of the PRIMROSE steering committee, and will aim to register and collect data on patients with histological confirmed locally advanced or metastatic BC who meet the entry criteria. The anonymous data will be collected in a central database**.** All oncological and neurosurgical centres in the UK treating BC or CNS disease will be eligible to participate in the study. Trainees from across the UK will be invited to participate in the study through the National Research Collaborative network and other relevant professional bodies. Full details in attached protocol.

Aims / Objectives

Primary Objective: To report the survival of patients diagnosed with CNS disease secondary to BC Secondary Objectives: 1. To define the incidence of metastatic breast cancer (MBC) involving the central nervous system in the UK. 2. To prospectively describe the current practice in diagnosis, staging and management of CNS disease secondary to BC in relation to national and international guidelines including the NICE guidelines for the management of brain metastases in adults (NG99, July 2018), EANO (2017) and the NCCN guidelines (version1.2018 Central Nervous System Cancers). 3. To evaluate the outcomes of patients treated for BC-related CNS metastases in the UK. 4. To generate data to help guide best practice guidelines in thefuture.5. To inform and help in the development of potential prospective studies and clinical trials

Standards / Criteria Details (service evaluation N/A)

As detailed above

Guideline / Standards available: Yes ☒ No ☐

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: Not applicable

Source of Standard / guideline: NSF ☐ NICE ☒ Royal College ☐
Trust ☐ Other ☒ State other: EANO and NCCN

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☐ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☐	No ☒
High cost	Yes ☒	No ☐
Known quality issue	Yes ☒	No ☐
Wide variation in practice	Yes ☒	No ☐

Sample No: Unknown Procedure codes to identify sample: Not necessary

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☒ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☒

Is Clinical Audit Team support required? Yes ☐ No ☒
If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*
Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date:To be determined by Primrose team

Anticipated project completion date: 2 years post-start

Anticipated Action Plan Submission date:3 years post-start

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE – within protocol.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

The Walton Centre NHS Foundation Trust

Project Prioritisation Assessment Tool

Audit title: **Audit on Anaesthetic management of elderly neuro surgical patients and outcome**

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-
Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume	y	(x2)
High risk		(x3)
Known quality issue		(x3)
Wide variation in practice	y	
NICE / NCEPOD related audit		(x3)
Defined measurable standards available	y	
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division	y	(x2)
Multidisciplinary project	y	
National / regional or multicentre project		(x2)
Total	**7**	**Lvl 4 Cat B**

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

Clinical Audit / Service Evaluation Registration Form

Clinical Audit definition

Clinical Audit is a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and the implementation of change. Aspects of the structure, processes and outcomes of care are selected and systematically evaluated against explicit criteria. Where indicated, changes are implemented at an individual, team or service level and further monitoring is used to confirm improvement in healthcare delivery.

Service evaluation

Service Evaluation is undertaken to benefit those who use a particular service and is designed and conducted to define or judge current service. Your participants will normally be those who use the service or deliver it. It involves an intervention where there is no change to the standard service being delivered (e.g. no randomization of service users into different groups). This does not require ethical approval.
It is possible to use data collected from participants during a service evaluation for later research as long as:

- the data is completely anonymous;
- it is not possible to identify participants from any resulting report;
- use of the data will not cause substantial damage and distress

Please note that to complete this form your project **must be clinical audit or service evaluation**. If you are unsure whether your project is clinical audit, service review or research brief definitions are given below as a guide:

Clinical Audit

- Measures existing practice against **best practice**, **evidence based clinical standards** *(this may include Royal College, British Association, NICE or Local guidance etc.)*

Research

- Generates new knowledge where there is no or limited research evidence available and which has the potential to be generalisable.

Service Evaluation:

- Seeks to evaluate the effectiveness or efficiency of a new or existing service to help inform local decision making (has been also referred to as service review, benchmarking or a baseline audit). This includes patient or staff satisfaction surveys.

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit ☒ Service Evaluation ☐**

Audit / Service Evaluation Title: Audit on Anaesthetic management of elderly neuro surgical patients and outcome

Division: Neurosurgery

Project Lead:

Contact No: Bleep No: Click here to enter text.

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale

>80 years of age is a high risk group for cranio-spinal surgery, carrying high mortality, higher risk of post op complications eg AKI, CVS complications, delirium, sepsis etc. We plan to review our anaesthetic practice and patient outcomes and compare with the AAGBI guidelines for anaesthesia for elderly patients although there are no specific guidelines for neurosurgical patients available till date.

Methodology: Retrospective review of notes and blood results

Aims / Objectives:

1. To assess the outcomes of surgery both elective and emergency in > 80 year old patients
2. To assess the post op complication eg AKI and delirium, CVS/resp, sepsis etc.
3. To assess the length of stay and causes of delay discharge if any

Click here to enter text.

Standards / Criteria Details (service evaluation N/A)
Peri operative care of the elderly, AAGBI

Guideline / Standards available: Yes ☒ No ☐

If yes, please attach a copy or provide web link to the most current version:
https://doi.org/10.1111/anae.12524
BUT these guidelines are for geriatric patients for general surgery, not for neuroanaesthesia

Name of Standard / guideline: Peri-operative care of the elderly 2014

https://doi.org/10.1111/anae.12524

Source of Standard / guideline: AAGBI (Association of anaesthetists of Great Britain and Ireland)

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☒

Is the audit / service evaluation issue: No

High volume	Yes ☒	No ☐
High risk	Yes ☐	No ☒
High cost	Yes ☐	No ☒
Known quality issue	Yes ☐	No ☒
Wide variation in practice	Yes ☒	Expected

Sample No: 150 Procedure codes to identify sample: Click here to enter text.

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☒ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? No ☒

Is this project part of an agreed departmental rolling programme? No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☒ Single disciplinary: ☐

Is Clinical Audit Team support required? No ☒

If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☒ Total number ___20_ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is <u>not</u> part of the patients usual treatment or care please explain how in this section)*

Will the audit involve direct patient contact? No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date: 01/09/20

Anticipated project completion date: 30/04/21

Anticipated Action Plan Submission date: 30/06/21

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)*** ___ _____ Date: 3/08/20

Comments I fully support the planned Audit.This will enable us to review and improve the anaesthetic care of the elderly perioperatively.In my opinion this fits in with the trust's overall values and strategy for improving the care of the elderly.Apotential benefit of this will be to flag up any issues concerning the elderly leading to a wider review of hospital practice and potential improvements /outcomes for this group of patients.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☒ No ☐

The Walton Centre NHS Foundation Trust

Project Prioritisation Assessment Tool

Audit title: Audit of Seizure Kits at the Walton Centre

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-
Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume		(x2)
High risk	Y	(x3)
Known quality issue		(x3)
Wide variation in practice		
NICE / NCEPOD related audit		(x3)
Defined measurable standards available	Y	
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**4**	**Lvl 4 Cat B**

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit** ☒ **Service Evaluation** ☐

Audit / Service Evaluation Title: Audit of Seizure Kits at the Walton Centre

Division: Neurology ☐ Neurosurgery ☒ Please specify department Critical Care

Project Lead:

Contact No: Bleep No:

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)
Click here to enter text.

Background / Rationale

Seizure Kits were introduced in 2018 at the Walton Centre in order to facilitate access to emergency antiepileptic drugs and equipment necessary for the treatment of patients with prolonged seizures. Surgical and Medical Response Team (SMART) led on the implementation of the kits across the Trust including decision on the contents, checklist for re-filling the bags by ward staff after use and procedure for date checking.

The new guideline for Status Epilepticus (SE) management at the Walton Centre was finalised and circulated in June 2020. Due to the change in practice the drug content of the Seizure Kits had to be updated to include additional medicines. This provided an opportunity to audit the management of Seizure Kits by ward staff.

Methodology

All available seizure kits in the trust will be inspected on the day of the audit. Storage location, contents (including quantity and expiry date), labelling and presence of seal will be recorded and compared the checklist for re-filling of the seizure kits.

Aims / Objectives

The aim of this audit is to ensure that the Seizure Kits at the Walton Centre are managed according to established protocols.

The objectives of the audit are to ensure that Seizure Kits:

- Are stored safely and appropriately
- Have appropriate contents
- Are sealed and labelled with the shortest expiry date of the contents

The new SE guideline advises the use of IM midazolam (5mg/ml) as a third line benzodiazepine option. The availability of this formulation is restricted across the trust to Critical Care Area; however this formulation is available in the Intubation Kits which are supplied to wards by Pharmacy. Therefore the availability of the Intubation Kit will also be checked in order to ensure the access to the IM midazolam in an emergency situation.

Standards / Criteria Details (service evaluation N/A)

It is expected that 100% of Seizure Kits in the Trust will be stored appropriately (Kit A in the emergency trolley and Kit B in a fridge), have the appropriate contents and are sealed and labelled with correct expiry date as per re-filling of seizure kits by ward staff checklist.

Guideline / Standards available: Yes ☒ No ☐

If yes, please attach a copy or provide web link to the most current version:

Name of Standard / guideline: Checklist for re-filling of seizure kits.

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☒ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☒ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☒	No ☐
High cost	Yes ☐	No ☒
Known quality issue	Yes ☐	No ☒
Wide variation in practice	Yes ☐	No ☒

Sample No: all seizure kits available in the Walton Centre. **Procedure codes to identify sample:** n/a

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☐ No ☒

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Rolling programme duration (number of years): Click here to enter text.

Is Clinical Audit Team support required? Yes ☐ No ☒
If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is <u>not</u> part of the patients usual treatment or care please explain how in this section)*

Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date: Oct 2020

Anticipated project completion date: Nov 2020

Anticipated Action Plan Submission date: Dec 2020

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead *(Signature)* _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead *(Signature)* _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

The Walton Centre NHS
NHS Foundation Trust

Project Prioritisation Assessment Tool

Audit title: Deep Brain Stimulation Service during Covid-19

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-
Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume		(x2)
High risk		(x3)
Known quality issue		(x3)
Wide variation in practice		
NICE / NCEPOD related audit		(x3)
Defined measurable standards available		
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division	Y	(x2)
Multidisciplinary project	Y	
National / regional or multicentre project		(x2)
Total	**3**	**Lvl 5 Cat C**

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit** ☐ **Service Evaluation** ☒

Audit / Service Evaluation Title: **Deep Brain Stimulation Service during Covid-19**

Division: Neurology ☐ Neurosurgery ☒ Please specify department Click here to enter text.

Project Lead:

Contact No: Bleep No:
Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale
We are keen to maintain and improve the quality of the Deep Brain Stimulation service, and in particular evaluate our service during the covid 19 lockdown.

Methodology

Questionnaire, quantitative. Patients will be asked after the review if they will participate and then we will give them it- post, face to face or over the phone. We will follow IG guidance already obtained. We will be asking all patients who we review (if we think it is appropriate) to participate for the next 4 months.

Aims / Objectives
Establish the standard that the dbs service achieves, identify opportunities for improvement and share the information and learning

Standards / Criteria Details (service evaluation N/A)

NA

Guideline / Standards available: Yes ☐ No ☒

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: NA

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☐ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☐	No ☒
High cost	Yes ☐	No ☒
Known quality issue	Yes ☐	No ☒
Wide variation in practice	Yes ☐	No ☒

Sample No: Click here to enter text. **Procedure codes to identify sample:** Click here to enter text.

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☐ No ☒ potentially posters or presentations

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): ongoing

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☒ Single disciplinary: ☐

Rolling programme duration (number of years): ongoing

Is Clinical Audit Team support required? Yes ☐ No ☒

If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is <u>not</u> part of the patients usual treatment or care please explain how in this section)*

Will the audit involve direct patient contact? Yes ☐ No ☐

How will the patient be involved?

Patient Questionnaire ☒ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☒ No ☐ N/A ☐

Anticipated start date: asap

Anticipated project completion date: TBC, possibly January 2021

Anticipated Action Plan Submission date:

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☒ No ☐

The Walton Centre NHS Foundation Trust

Project Prioritisation Assessment Tool

Audit title: How has COVID-19 influenced the referral pattern within a physiotherapy spinal triage service?

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-

Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume		(x2)
High risk		(x3)
Known quality issue		(x3)
Wide variation in practice		
NICE / NCEPOD related audit		(x3)
Defined measurable standards available		
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**0**	**Lvl 5 Cat C**

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit ☐ Service Evaluation x**

Audit / Service Evaluation Title: How has COVID-19 influenced the referral pattern within a physiotherapy spinal triage service?

Division: Neurosurgery **MCAS**

Project Lead:

Contact No: Bleep No: N/A

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale

MCAS (Musculoskeletal assessment service) which is a spinal Physiotherapy specialist-led triage service prior to COVID-19 saw all patients with spinal pain in face to face clinics. Where after assessment a decision was made as to where they should be referred to. Most commonly to Physiotherapy, Pain clinic, urgent root block injection clinic, Neurosurgery or discharged with advice. Since June 2020 following the COVID-19 outbreak the MCAS service resumed seeing the majority of patients via telephone consultation, with a few patients selected to attend a face to face clinic usually after an initial assessment via telephone consultation. My project is my dissertation for my MSc which I am studying at MMU where I am looking to see if there is a change in referral pattern for face to face consultations in 2019 to telephone consultations in 2020. I wish to evaluate the effectiveness of telephone consultations compared to face to face consultations in order to develop the MCAS service moving forward to inform as to whether to include telephone consultations as part of normal practice post COVID-19 pandemic. I will also look at patient satisfaction regarding telephone consultation compared to face to face consultations to help inform future practice.

Methodology

The electronic database of the Walton Centre will be examined to identify all new and revisit patients who attended an MCAS clinic who were referred to The Walton centre during August September and October in 2019. Prospective data is currently being collected by the MCAS practitioners for the months of August September and October 2020. The electronic data base will be examined also for the months of August September and October 2020 to ensure no clinics or patients were missed. If any patient outcomes are unclear, the letter for the patient will be manually searched to find the outcome.

Study design: Retrospective and prospective observational study

Participants

- Adults (aged >16 years old)
- Seen in MCAS clinics referred to The Walton Centre.
- Patients with spinal pain with or without radicular pain

The data to be collected are patient demographics - age, sex and diagnosis.

Discharge destination i.e. where they were referred usually Pain clinic, neurosurgery, physiotherapy locally, back to GP for a change of medication, urgent nerve root block injection service or discharge with advice.

Whether a new patient or a revisit.

To identify the number of patients who required a face to face consultation and to determine the factors which made that decision

To include 2 questions asking the patients who were selected to attend a face to face clinic how satisfied they were with the telephone and face to face consultations.

Data will be initially transferred to an excel spreadsheet and then exported to SPSS Statistics where data analysis will be performed. Results will be analysed to identify if there are any changes to referral pattern of patients with spinal pain who attend the MCAS service comparing telephone consultations to face to face consultations and to determine the proportion of patients who require a face to face consultation.

Aims / Objectives

To determine the changes in referral pattern from face to face consultations to telephone consultations.

To identify why patients are selected to attend a face to face clinic

To assess patient satisfaction of those patients who attended a face to face clinic following a telephone consultation.

Standards / Criteria Details (service evaluation N/A)

Guideline / Standards available: Yes ☐ No ☐

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: Click here to enter text.

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐ Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☐ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No x
High risk	Yes ☐	No x
High cost	Yes ☐	No x
Known quality issue	Yes ☐	No x
Wide variation in practice	Yes ☐	No x

Sample No: 1200-1400 **Procedure codes to identify sample:** Patients attending MCAS clinics during August/September/October 2019 and 2020

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes x No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No **x**

Is this project part of an agreed departmental rolling programme? Yes ☐ No **x**

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: x

Is Clinical Audit Team support required? Yes ☐ No x
If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is <u>not</u> part of the patients usual treatment or care please explain how in this section)*
Will the audit involve direct patient contact? Yes ☐ No x

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A x

Anticipated start date: November 2020

Anticipated project completion date: March 2020

Anticipated Action Plan Submission date: September/October 2020 or 2021 I wasn't sure

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- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
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- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Action Plan

Ref no: NS316

Clinical Audit Title	Has COVID-19 influenced the referral pattern within a tertiary physiotherapy spinal triage service.		
Date audit complete	31/05/2021	**Date action plan completed**	
Auditor		**Name of policy / guideline**	
Division	Neurosurgery	**Source of policy / guideline**	

Audit Rationale:
Please summarize the rationale of the audit for the members of the Clinical Audit Group (please limit to one or two sentences)
The Covid-19 pandemic forced healthcare to rapidly adopt telehealth into normal practice to prevent the spread of infection to patients and staff. The aim of this study was to determine if there was a change in referral pattern pre Covid-19 when all consultations were face-to-face compared to post Covid-19 when all consultations were telephone consultations.

Summary of Findings:
Please concisely state the main conclusions of the project using bullet points

- Covid-19 influenced the referral pattern in a spinal tertiary Physiotherapy MCAS service
- A reduced number of patients were discharged post Covid-19 compared to the pre Covid-19 period.
- The number of follow up appointments increased post Covid-19
- The reasons for some patients to be seen face-to face post Covid-19 were to aid diagnosis (93.8%) and patient preference/request (6.2%)
- The numbers of patients seen post Covid-19 who were discharged were less than the pre Covid-19 group.

Key success:
Please concisely state the key success identified by the project – if none identified please state N/A

- The study did conclude there was a change in referral pattern post Covid-19
- Some patients still wish to be seen face-to-face even if not considered necessary by the clinician, indicating some patients still wish to be seen face-to-face therefore in person consultations are still desired
- The study shows face-to-face consultations are still needed in some cases to aid diagnosis
- The study raises further questions as to which patients are more suited to telehealth consultations or face-to-face consultations, and should we be considering a more personal approach for the care of our patients and offering more patient choice in type of consultation.

Key concerns:

Please concisely state the key concerns identified by the project using bullet points– if none identified please state N/A

- The accuracy of data is not known as the patient outcomes are manually inputted into the system therefore, human error and quality of data cannot be guaranteed, although any missing data was hand searched by the auditor to improve the accuracy
- The results are limited to one hospital which is also a leading tertiary centre for spinal pain which may not be generalisable to other MCAS settings due to differences in populations e.g., socioeconomic status.
- More complex cases were triaged to MCAS post Covid-19 compared to pre Covid19 due to the increased waiting times for Neurosurgery, which could have influenced the referral pattern.
- Safety of telephone consultations versus face-to-face consultations regarding missed diagnosis is a concern.

Recommendations discussed:

Please concisely summarise the recommendations that were discussed following the completion of the project

- The use of telephone /telehealth consultations should be integrated into normal practice particularly as our patients are from a wide catchment area
- Patient choice of type of consultation should be considered
- The MCAS service at Walton should also consider video consultation as an alternative to face-to-face or telephone consultation

Presentation / Dissemination of Project

Date findings were presented / disseminated:

Department where discussed or presented:

Actions agreed following recommendations discussed:-

**Please ensure each action has a named lead, timescale and reportable group stated on the action plan below. Please list the evidence of the action implementation e.g SOP, protocol, standardised template, presentation or meeting minutes etc*

Issue	Action required	Named lead for action	Timescale	Evidence	Reportable to (group/meeting)
1)					
2)					

3)					

Re-audit date _____ **If no re-audit planned please give reasons why?** _This was the service evaluation as part of my MSc. It took a considerable amount of time. Time would have to be allocated to repeat the service evaluation._____

Will this be an on-going audit? Yes ☐ No x☐

Are there any potential barriers / problems to prevent the implementation of the above actions? Yes ☐ No x☐

If yes to the above please state who the issues have been referred to:

Name _____ **Designation** _MCAS Physiotherapist_____ **Date referred** _____

Signature:____ _____ **Date:**___28/05/1968_____

Have any issues been logged on the risk register? Yes ☐ No x☐ N/A ☐
Please provide details of issue(s) logged on the risk register:

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Action Plan

Ref no: NS 317

Clinical Audit Title	Outcomes of patients with GBM treated at WCFT in 2019. *To evaluate the median survival time of patients who have undergone biopsy or surgery with Glioblastoma Multiforme at the Walton Centre.*		
Date audit complete		**Date action plan completed**	
Auditor		**Name of policy / guideline**	
Division	Neurosurgery	**Source of policy / guideline**	

Summary of Findings:

The audit looked at the outcomes for patients in 2019 and assessed the impact of various factors on the survival. The standard used for comparison was the median survival time as reported by NICE 2018, which was 14-18 months. The Shapiro-Wilk test of normality was p<.001, and therefore, this audit will comment on mean survival time instead.
The analysis revealed that the mean survival for patients with glioblastoma multiforme at the Walton Centre was 10.40 months (+/- 7.45).

Data collection included the following factors: age, gender, residence, intervention, use of 5-ALA, site of surgery, surgeon, IDH1 status, MGMT status, ATRX status and performance status. The factors that came back as statistically significant in individual Kaplan-Meier analysis (not accounting for confounding variables) were age, intervention, performance status and MGMT status. Increase in age correlates to a decrease in survival time (p=.047). Surgical intervention correlates to an increase in survival time (p<.001). Mean survival time for biopsy was 6.89 months versus 11.92 months for surgery. Better performance status correlates to an increase in survival time (p=.033). Methylated MGMT status correlates to an increase in survival time (p=.046). Mean survival time for unmethylated MGMT status was 9.19 months, versus 11.35 months for methylated MGMT status. Multivariate analysis using cox regression model, revealed female gender (p=0.29) and use of 5-ALA (p=.026) to have the most statistically significant correlation to a longer mean survival time.

Key success:

- **A reduction in variability between surgeons survival times.**
- **Consistent survival times between centres.**

Key concerns:

Recommendations discussed:

- To increase the use of 5-ALA in clinical practise alongside continuing holistic patient care

Presentation / Dissemination of Project
Date findings were presented / disseminated: presented after oncology mdt Thursday 16th Sept 2021
Department where discussed or presented:

Actions agreed following recommendations discussed:-
**Please ensure each action has a named lead, timescale and reportable group stated on the action plan below. Please list the evidence of the action implementation e.g SOP, protocol, standardised template, presentation or meeting minutes etc*

Issue	Action required	Named lead for action	Timescale	Evidence	Reportable to (group/meeting)
1) Increase use of 5 ALA	Continue to support / suggest 5 ala use in neuroncology mdt		Sept 2021	*Improved use on further audit*	
2) Improve outcomes for tumour patients	Discuss treatments in MDT and increase enrolment into clinical trials		Discussed 16/09/21 at oncology MDT		

Re-audit date _____ **If no re-audit planned please give reasons why?** __we would plan to reaudit in 2-3 yrs time. _____

Will this be an on-going audit? Yes X No ☐

Are there any potential barriers / problems to prevent the implementation of the above actions? Yes ☐ No ☐

If yes to the above please state who the issues have been referred to:

Name _____ **Designation** _____ **Date referred** _____

Signature:_____ **Date:**_____

Have any issues been logged on the risk register? Yes ☐ No ☐ N/A ☐

Please provide details of issue(s) logged on the risk register:

Version: 2019
Review: 2020

The Walton Centre NHS Foundation Trust

Project Prioritisation Assessment Tool

Audit title: To evaluate the median survival time of patients who have undergone biopsy or surgery with Glioblastoma Multiforme at the Walton Centre.

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-

Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume		(x2)
High risk		(x3)
Known quality issue		(x3)
Wide variation in practice		
NICE / NCEPOD related audit		(x3)
Defined measurable standards available		
Re-audit / repeat service evaluation	Y	(x2)
Topic is a key clinical interest for the department / division	Y	(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**4**	**Lvl 4 Cat B**

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit** ☒ **Service Evaluation** ☐

Audit / Service Evaluation Title: To evaluate the median survival time of patients who have undergone biopsy or surgery with Glioblastoma Multiforme at the Walton Centre.

Division: Neurology ☐ Neurosurgery ☒ Please specify department: MEDICAL STUDENT

Project Lead:

Contact No: Bleep No:

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)
Click here to enter text.

Background / Rationale

An audit was conducted in 2017 to look at the outcome of all patients treated at the Walton Centre during 2017 with Glioblastoma, after which a plan was introduced to improve the overall care for these patients. This audit aims to look at the outcome for the cohort in 2019 given the improved care plan.

Methodology

To review all patients with Glioblastoma diagnosed in 2019 using the electronic patient record and correlate them with the following data points: age, Welsh or English resident, biopsy or surgery, date of intervention, date of death, surgeon, IDH1, and MGMT status.

Aims / Objectives

This audit aims to assess the outcome from treatment of patients with Glioblastoma at the Walton Centre and identify factors that influence prognosis.

Standards / Criteria Details (service evaluation N/A)

The median survival time for patients treated with Glioblastoma is 12-14 months according to the literature.

Guideline / Standards available: N/A Yes ☐ No ☐

Name of Standard / guideline:

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☐ No ☐

Is the audit / service evaluation issue:
High volume Yes ☐ No ☒
High risk Yes ☐ No ☒

High cost Yes ☐ No ☒
Known quality issue Yes ☐ No ☒
Wide variation in practice Yes ☐ No ☒

Sample No: about 100 **Procedure codes to identify sample:** Patient group identified from pathology records.

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☐ No ☒

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☒ No ☐

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☒

Is Clinical Audit Team support required? Yes ☐ No ☒
If yes, please specify type of assistance required:
- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)
- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*
Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date: Monday 5th October 2020

Anticipated project completion date: Monday 21st December 2020

Anticipated Action Plan Submission date: January 2021

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**

- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)*** _____ Date: 01/10/2020

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☒ No ☐

The Walton Centre NHS Foundation Trust

Project Prioritisation Assessment Tool

Audit title: COVID-19 impact on UK neurosurgery activity – a national SBNS/BNTRC service evaluation study

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-

Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume		(x2)
High risk	Y	(x3)
Known quality issue		(x3)
Wide variation in practice	Y	
NICE / NCEPOD related audit		(x3)
Defined measurable standards available		
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**4**	**Lvl 4 Cat B**

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit ☐ Service Evaluation ☒**

Audit / Service Evaluation Title: COVID-19 impact on UK neurosurgery activity – a national SBNS/BNTRC service evaluation study

Division: Neurology ☐ Neurosurgery ☒ Please specify department Click here to enter text.

Project Lead:

Contact No: Bleep No:

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale

The Covid-19 pandemic has had an impact on neurosurgery services and activity across the UK. Several organisation and professional societies issued guidelines during the height of the pandemic. Several publications have reported very high mortality (~20%) for patients having surgery who then developed Covid-19 infection.[1, 2] These publications had very few neurosurgery patients and the data are therefore do not necessarily represent the real-world risk. The purpose of this service evaluation study is to capture high level surgical activity data from all UK neurosurgery units and has the backing of the SBNS and BNTRC. **This investigator-led, non-commercial, non-interventional study is low risk.**

Methodology

Eligibility criteria: All patients undergoing neurosurgery (excluding isolated ICP for cranial trauma) between 1st April and 30th June in 2019 & 2020. Data for April 2020 will be put into Castor EDC, an online database custom built by the British Neurosurgical Trainees Research Collaborative. Castor EDC is a validated system approved by external auditors and complies with all applicable laws and regulations, including ICH E6 Good Clinical Practice (GCP), 21 CFR Part 11, EU Annex 11, General Data Protection Regulation (GDPR), HIPAA (US), ISO 9001 and ISO 27001. Data for the month of April 2020 will be analysed centrally and a peer-reviewed manuscript summarising activity will be published. In addition to this national project, locally we are extending data collection across May and June of 2020, and also collecting data for the equivalent period in the year prior 2019. Only anonymised data will be uploaded to the database. No patient identifiable data will be collected. We will collect data on: Age range, Sex (male / female), Type of admission (emergency / elective), Category of surgery (Cranial trauma (excluding ICP monitoring), Tumours (gliomas, metastases, meningiomas, others), Skull base (vestibular schwannoma, meningioma, others), Pituitary, Functional (DBS, SCS), Hydrocephalus, Paediatrics (use for all patients under 18 years), Spine), Pre-op Covid-19 infection (yes / no / not tested), Post-op Covid-19 infection within 30 days (yes / no), Death due to Covid-19 (yes / no / not applicable / not known). Statistical analysis - Descriptive statistics will be generated to include baseline demographics, proportion of surgical categories, proportion of overall and SARS-CoV-2 infection related deaths.

Aims / Objectives

- Determine the number of operated cases during April, May, June in 2019 & 2020
- Determine the number and timing of pre-op SARS-CoV-2 infections
- Determine the number and timing of post-op SARS-CoV-2 infections
- Establish baseline characteristics (age, sex, co-morbidities)

- Establish risk of mortality according to general scoring criteria for SARS-CoV-2 infection (4C score)[3]
- Determine the overall and SARS-CoV-2 related mortality.

Standards / Criteria Details (service evaluation N/A)

N/A

Guideline / Standards available: Yes ☐ No ☒

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: n/a

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☐ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☒	No ☐
High cost	Yes ☐	No ☒
Known quality issue	Yes ☐	No ☒
Wide variation in practice	Yes ☒	No ☐

Sample No: n/a Procedure codes to identify sample: n/a

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☒ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): n/a

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Is Clinical Audit Team support required? Yes ☐ No ☒
If yes, please specify type of assistance required:
- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)
- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is <u>not</u> part of the patients usual treatment or care please explain how in this section)*
Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date:ASAP

Anticipated project completion date: 18th December

Anticipated Action Plan Submission date: 6 MONTHS FROM START, PENDING RESULTS FROM NATIONAL TEAM RUNNING PROJECT

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE – Not yet released formally, data points described above.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

References

1. COVIDSurg Collaborative (2020) Mortality and pulmonary complications in patients undergoing surgery with perioperative SARS-CoV-2 infection: an international cohort study. Lancet (London, England). https://doi.org/10.1016/S0140-6736(20)31182-X

2. Lei S, Jiang F, Su W, et al (2020) Clinical characteristics and outcomes of patients undergoing surgeries during the incubation period of COVID-19 infection. EClinicalMedicine 21:100331

3. Knight SR, Ho A, Pius R, et al (2020) Risk stratification of patients admitted to hospital with covid-19 using the ISARIC WHO Clinical Characterisation Protocol: development and validation of the 4C Mortality Score. BMJ 370:m3339

The Walton Centre NHS Foundation Trust

Clinical Audit / Service Evaluation Action Plan

Ref no: NS 319

Clinical Audit Title	Service evaluation for the investigation and follow-up of subarachnoid haemorrhage patients with negative angiography		
Date audit complete	25/10/2020	**Date action plan completed**	20/03/22
Auditor		**Name of policy / guideline**	Walton Centre NHS Foundation Trust SAH guidance
Division	Neurovascular (surgery)	**Source of policy / guideline**	Trust guidelines

Summary of Findings:

Please concisely state the main conclusions of the project using bullet points

- There is significant heterogeneity in time interval and imaging modality chosen to investigate SAH patients with negative angiography
- <2% of angiogram-negative patients were found to have clinically relevant findings in the delayed setting (>4 weeks).
- No variables were significant predictors of detecting which patients would have clinically relevant findings on delayed imaging.
- MDT discussion will continue to be required in the follow-up of these patients until further prospective data is available.

Key success:

Please concisely state the key success identified by the project – if none identified please state N/A

- DSA is the highest yield modality for detecting clinically relevant findings in the setting of delayed angiography
- Perimesencephalic and 'perimesencephalic plus' patients have significantly better outcomes than others, and very few are found to have clinically relevant delayed diagnoses.
- 83% of clinically relevant findings identified at delayed angiography were found between 9 and 17 days after presentation, suggesting early repeat DSA may be of diagnostic benefit.

Key concerns:

Please concisely state the key concerns identified by the project using bullet points– if none identified please state N/A

- The addition of long-term follow up data is not mandated by the guidance but is recommended and would therefore be a useful addition to future research from this database.
- The heterogeneity of this cohort means that MDT discussion will continue to be required in the follow-up of these patients until further prospective data is available.

Recommendations discussed:

Please concisely summarise the recommendations that were discussed following the completion of the project

- Continue MDT discussion for these patients in relation to delayed imaging
- There may be a greater role for early repeat DSA (2 weeks), as this interval scan had the highest detection rate for clinically relevant delayed diagnoses
- Addition of long-term data (6- and 12-month outcomes) to the centralised database would be beneficial, but at present is not feasible. May be

suitable for future medical student projects.

Presentation / Dissemination of Project
Date findings were presented / disseminated: MDT 06/04/22; SBNS 15/04/21

Department where discussed or presented: Neurovascular MDT; Neurosurgical dept.; SBNS Spring Meeting 2021

Actions agreed following recommendations discussed:-
*****_Please ensure each action has a named lead, timescale and reportable group stated on the action plan below. Please list the evidence of the action implementation e.g SOP, protocol, standardised template, presentation or meeting minutes etc_

Issue	Action required	Named lead for action	Timescale	Evidence	Reportable to (group/meeting)
1) Long term outcome data collection	Not immediately actionable, nor mandatory; to consider collection of such data as potential project for medical students		n/a	*Future medical student projects*	Neurovascular MDT
2) Delayed imaging time interval	Continue prospective data collection; consider early repeat scans at 2 weeks		n/a		Neurovascular MDT
3)					
4)					

Re-audit date _____ **If no re-audit planned please give reasons why?** _____Further prospective data required; date not set at present_____

Will this be an on-going audit? Yes ☐ No X

Are there any potential barriers / problems to prevent the implementation of the above actions? Yes ☐ No X

If yes to the above please state who the issues have been referred to:

Name _____ **Designation** _____ **Date referred** _____ **Signature:**_____ **Date:**_____	
Have any issues been logged on the risk register? Yes ☐ No ☐ N/A X **Please provide details of issue(s) logged on the risk register:**	

Project Prioritisation Assessment Tool

Audit title: Investigation and follow-up of subarachnoid haemorrhage in patients with negative angiography at a tertiary centre

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-
Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume	Y	(x2)
High risk		(x3)
Known quality issue		(x3)
Wide variation in practice	Y	
NICE / NCEPOD related audit		(x3)
Defined measurable standards available	Y	
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**4**	**Lvl 4 Cat B**

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit** ☐ **Service Evaluation** ☒

Audit / Service Evaluation Title: Investigation and follow-up of subarachnoid haemorrhage in patients with negative angiography at a tertiary centre

Division: Neurology ☐ Neurosurgery ☒ Please specify department Click here to enter text.

Project Lead:

Contact No: Bleep No:

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale

15% of subarachnoid haemorrhage are non-aneurysmal and are categorised according to the blood distribution on CT into perimesencephalic (pmSAH) and non-perimesencephalic bleeds. The pathological process underpinning each of these is unclear, but a significantly more favourable prognosis is associated with pmSAH. Determining a) whether or not to investigate these patients beyond initial angiography and b) with what imaging modality, is disputed. It is recommended that non-perimesencephalic cases undergo a second, delayed DSA (Euro Stroke Association, 2013) however a recent meta-analysis suggests that in fact a repeat DSA in this setting may be of greater risk than benefit. Clinicians may therefore opt for any of MRI, DSA or CTA, at any given period of time after presentation. Because of the wide variation in practice seen, current Trust guidance suggests that a 'case by case' approach discussed at MDT is appropriate. The MDT approach allows for comparison of different practices but is not necessarily the most efficient. At present no primary data from the centre has been analysed to determine a) the most frequently employed follow-up pathway b) the most efficient pathway or c) whether any risks are associated with the follow-up methods chosen.

Methodology

Data is already regularly input into Excel spreadsheets categorised by year and is therefore readily accessible. Yearly databases will be collated into a single SAH database for analysis and angiogram-negative patients will be identified within this. PACS will be used to determine which of the following were used in the follow-up of these patients: i) scan modality ii) time to delayed scan iii) number of delayed scans iv) yield of delayed scans v) complications associated with delayed scans. Data will be analysed and presented using SPSS v24.

Aims / Objectives

Determine which scan modalities and timings are most frequently employed in following-up angiogram-negative SAH patients at the Trust, comparing both yield and risks associated with these pathways. We aim to assess whether Trust guidance is followed for all non-perimesencephalic patients (i.e they receive at least 1 delayed DSA), and to establish whether an evidence-based pathway is possible for following up patients based on blood distribution.

Standards / Criteria Details (service evaluation N/A)

Trust guidance for following-up non-aneurysmal SAH revolves around a 'case by case' discussion at MDT at present, however non-perimesencephalic patients are advised to undergo at least 1 delayed DSA.

Guideline / Standards available: Yes ☒ No ☐

If yes, please attach a copy or provide web link to the most current version: Walton Centre SAH guidance on Trust intranet

Name of Standard / guideline: Subarachnoid Haemorrhage Guidelines to Support Practice

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☒ Other ☒ State other: European Stroke Association

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☒ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☒	No ☐
High risk	Yes ☐	No ☒
High cost	Yes ☐	No ☒
Known quality issue	Yes ☐	No ☒
Wide variation in practice	Yes ☒	No ☐

Sample No: Click here to enter text. **Procedure codes to identify sample:** Click here to enter text.

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☒ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Is Clinical Audit Team support required? Yes ☐ No ☒
If yes, please specify type of assistance required:
- ♦ Population Identification ☐
- ♦ Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)
- ♦ Database design ☐
- ♦ Data entry ☐
- ♦ Analysis ☐
- ♦ Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*
Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date:25/10/2020

Anticipated project completion date: 05/11/2020

Anticipated Action Plan Submission date:08/11/2020

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE. – the data has already been collected and collated in an Excel spreadsheet; a blank copy of this is attached**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead *(Signature)* _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead *(Signature)* _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

Project Prioritisation Assessment Tool

Audit title: 72 hours MRI for Glioma surgery

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-
Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume		(x2)
High risk		(x3)
Known quality issue	Y	(x3)
Wide variation in practice	Y	
NICE / NCEPOD related audit	Y	(x3)
Defined measurable standards available	Y	
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**8**	**Lvl 4 – Cat B**

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit ☒ Service Evaluation ☐**

Audit / Service Evaluation Title: 72 hours MRI for Glioma surgery

Division: Neurology ☐ Neurosurgery ☒ Please specify department Click here to enter text.

Project Lead:

Contact No: Bleep No:

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale

Literature shows good evidence that extent of resection correlates with favourable outcome in glioma surgery. For this reason it is recommended an early post-op MRI scan with and without contrast to assess the extent of resection for prognostication and indication of adjuvant therapies. However, extent of resection will be difficult to assess on studies performed more than 72 hours from the surgery due to emerging of gliosis which can be misinterpreted for residual tumour.

Methodology

Electronically assess all patients operated for brain gliomas between Dec 2019 and Febr 2020 if post-op MRI was performed within 72 hours from the surgery

Aims / Objectives

Compliance with NICE recommendation and assess, identify any departmental difficulties in achieving this and formulate recommendations where necessary

Standards / Criteria Details (service evaluation N/A)

According to NICE guidelines all patient undergoing glioma surgery should have a post-op MRI within the first 72 hours following the surgery.

Guideline / Standards available: Yes ☒ No ☐

If yes, please attach a copy or provide web link to the most current version:
https://www.nice.org.uk/guidance/ng99/chapter/Recommendations#follow-up-for-glioma

Name of Standard / guideline: Brain tumours (primary) and Brain metastasis in adults – Section 1.3.7

Source of Standard / guideline: NSF ☐ NICE ☒ Royal College ☐
Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured

Yes ☒ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☐
High risk	Yes ☐	No ☐
High cost	Yes ☐	No ☐
Known quality issue	Yes ☒	No ☐
Wide variation in practice	Yes ☒	No ☐

Sample No: Click here to enter text. **Procedure codes to identify sample:** Click here to enter text.

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☒ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☒

Is Clinical Audit Team support required? Yes ☐ No ☒

If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*

Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☒ N/A ☐

Anticipated start date:7/10/2020

Anticipated project completion date: 25/10/2020

Anticipated Action Plan Submission date: Click here to enter text.

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)*** _____ Date: 9/10/20

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Action Plan

Ref no: 322

Clinical Audit Title	Review of overall activity regarding shunt admissions and procedure at WCNN during 01.04.2019 – 31.03.2020		
Date audit complete	01/12/2020	**Date action plan completed**	
Auditor		**Name of policy / guideline**	UK Shunt Registry
Division	Neurosurgery	**Source of policy / guideline**	UK Shunt Registry

Summary of Findings:
Please concisely state the main conclusions of the project using bullet points

- The primary finding of this audit is that reporting of local procedure data to UKSR through Orion has significantly improved and is close to 100%.
- Where under-reporting was found, this has been highlighted to the clinical outcomes team and Orion records are being updated. These under-reporting may be attributed to the limitations of retrospective data collection.

Key success:
Please concisely state the key success identified by the project – if none identified please state N/A

- Reporting of local procedure data to UKSR through Orion has significantly improved and is close to 100%. This is a significant improvement from previous audit completed by Anca Merla on 01/09/2019 which identified a serious failing in data reporting in WCNN

Key concerns:
Please concisely state the key concerns identified by the project using bullet points– if none identified please state N/A

- *N/A*

Recommendations discussed:
Please concisely summarise the recommendations that were discussed following the completion of the project

- Shunt procedures completed from 2020 onwards will have been prospectively added onto the UKSR as outlined in the SOP; which will further increase compliance with reporting into the future.

Presentation / Dissemination of Project
Date findings were presented / disseminated: _____

Department where discussed or presented: _____

Actions agreed following recommendations discussed:-
**Please ensure each action has a named lead, timescale and reportable group stated on the action plan below. Please list the evidence of the action implementation e.g SOP, protocol, standardised template, presentation or meeting minutes etc*

Issue	Action required	Named lead for action	Timescale	Evidence	Reportable to (group/meeting)
1)					
2)					
3)					
4)					

Re-audit date _____ **If no re-audit planned please give reasons why?** Shunt reporting is excellent at WCFT and data will be added onto Orion prospectively to further ensure no patient data is missed from inclusion on this national registry.

Will this be an on-going audit? Yes ☐ No ☒

Are there any potential barriers / problems to prevent the implementation of the above actions? Yes ☐ No ☒

If yes to the above please state who the issues have been referred to:

Name _____ **Designation** _____ **Date referred** _____

Signature:_____ **Date:**_____
Have any issues been logged on the risk register? Yes ☐ No ☐ N/A ☒ **Please provide details of issue(s) logged on the risk register:**

The Walton Centre NHS Foundation Trust

Project Prioritisation Assessment Tool

Audit title: Review of overall activity regarding shunt admissions and procedure at WCNN during 01/04/19 – 30/09/19

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-
Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume		(x2)
High risk		(x3)
Known quality issue		(x3)
Wide variation in practice		
NICE / NCEPOD related audit		(x3)
Defined measurable standards available		
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**n/a – Parts of form incomplete**	

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit** ☒ **Service Evaluation** ☐

Audit / Service Evaluation Title: Review of overall activity regarding shunt admissions and procedure at WCNN during 01/04/19 – 30/09/19

Division: Neurology ☐ Neurosurgery ☒ Please specify department Click here to enter text.

Project Lead:

Contact No: Bleep No:

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)
Click here to enter text.

Background / Rationale

A previous audit completed at The Walton Centre NHS Foundation Trust shows significant under-reporting of shunt procedures, revisions and complications to the national shunt registry. Since the initial audit was completed in 1.09.19, a number of measures have been introduced to improve reporting. This re-audit will evaluate whether this has led to improved reporting standards and whether further measures are necessary.

Methodology

The audit will involve assessing shunt records within the national Orion shunt registry and comparing this to locally stored data. Results will be presented as frequencies. Finally, an analysis will be provided which compares any improvement/worsening of reporting standards since that last audit period. The period to be audited will be from 01.04.19 to 30.09.19.

Aims / Objectives

- Re-audit the reporting of shunt procedures, revisions, and complications at The Walton Centre to the national shunt registry.

Standards / Criteria Details (service evaluation N/A)

Click here to enter text.

Guideline / Standards available: Yes ☐ No ☐

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: Click here to enter text.

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☐ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☐
High risk	Yes ☐	No ☐
High cost	Yes ☐	No ☐
Known quality issue	Yes ☐	No ☐
Wide variation in practice	Yes ☐	No ☐

Sample No: Click here to enter text. **Procedure codes to identify sample:** Click here to enter text.

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☐ No ☒

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☒ No ☐

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☐

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Is Clinical Audit Team support required? Yes ☒ No ☐

If yes, please specify type of assistance required:

- Population Identification ☒
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*

Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date: 01.10.2020

Anticipated project completion date: 01.12.2020

Anticipated Action Plan Submission date: 01.12.2020

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

Project Prioritisation Assessment Tool

Audit title: Lumbar Puncture Proforma – An Audit to Improve Patient Safety

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-
Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume		(x2)
High risk	Y	(x3)
Known quality issue	Y	(x3)
Wide variation in practice	Y	
NICE / NCEPOD related audit		(x3)
Defined measurable standards available		
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**7**	**Lvl 4 Cat B**

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit ☒ Service Evaluation ☐**

Audit / Service Evaluation Title: Lumbar Puncture Documentation Audit

Division: Neurology ☒ Neurosurgery ☒ Please specify department Click here to enter text.

Project Lead:

Contact No: Bleep No: Click here to enter text.

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale

Lumbar puncture is one of the most common procedures performed in the both neurology and neurosurgery. Despite being a relatively simple procedure, complications may arise including headache, persistent spinal fluid leak, brain herniation, bleeding, and infection. These complications are mostly preventable if proper pre-procedure, procedure and post-procedure checks and documentations are strictly adhered. In many areas of medicine and surgery, proformas have proved to increase the quality of documentation and often reminds the physician of checks to be done which were otherwise missed. This greatly improves the accuracy and consistence of service delivery for patients. In our trust, although we have a good LP protocol, documentation could sometimes be an issue. We do actually have 5 proformas in EP2 namely: Lumbar Puncture – Observations, Lumbar Puncture - Pre-Procedure Checks, Lumbar Puncture - Risk Assessment, Lumbar Puncture - Procedure / Post Procedure, Lumbar Puncture - Discharge Needs. However, these are not being used routinely by the doctors performing the LPs. This could potentially cause gaps in patient care and inability to perform the necessary check

Methodology

This project will involve retrospective audit of documentation of previous lumbar punctures done in the trust using previous case notes from patients' charts. We will include auditing at least 20 previous LPs and see whether they adhered with the minimum documentation in EP2. The parameters that should be included in the documentation (mentioned in the Standards / Criteria Details below) will be checked.

A proforma that includes pre-procedure, within the procedure and post-procedure checks will then be developed. This will be a simple, single paged proforma that needs to be compiled in patient's notes or filled-up in EP2 to endure better documentation.This form will be produced and circulated for comments within the surgical medical and nursing groups and a new form then developed.

Doctors performing the lumbar punctures will be briefed with this proforma and education sessions will be conducted regarding the importance of documentation and safety check before, during and after the procedure. A post-implementation audit will be conducted after in at least 20 LPs to check improvements in practice of documentation.

Aims / Objectives

To audit and improve the practice of documentation and safety checks of lumbar punctures in the trust and to introduce a proforma.

Standards / Criteria Details (service evaluation N/A)

The following areas of best practice for lumbar were identified though thorough literature review and should be included in the proforma:

1. Pre-procedure checks: indication, any contraindications, imaging reviewed, anticoagulants/clotting reviewed, history, consent taken
2. Procedure checks: Patient position, sterility/skin preparation, anaesthetic type and dose, procedure site, needle size or type, number of attempts, opening pressure, CSF appearance, total volume taken, stylet reinserted prior to needle withdrawal
3. Post-procedure checks: Specimen sent for which test, any complications, did patient tolerate the procedure, post-procedure advice given
4. Signature Physician name and grade.

Guideline / Standards available: Yes ☐ No ☒

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: Click here to enter text.

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☒ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☒	No ☐
High cost	Yes ☐	No ☒
Known quality issue	Yes ☒	No ☐
Wide variation in practice	Yes ☒	No ☐

Sample No: Click here to enter text. **Procedure codes to identify sample:** Click here to enter text.

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☒ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): ongoing

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Rolling programme duration (number of years): ongoing

Is Clinical Audit Team support required? Yes ☒ No ☐

If yes, please specify type of assistance required:

- Population Identification ☒
- Design of data collection tool ☒

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number ____ / per week ____

Patient Contact / Involvement – *(If project involves patient contact that is <u>not</u> part of the patients usual treatment or care please explain how in this section)*

Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date: 1 November 2020

Anticipated project completion date: March 2021

Anticipated Action Plan Submission date: December 2020

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

Project Prioritisation Assessment Tool

Audit title: Generation of baseline audit data of meningioma patients treated at The Walton Centre NHS Foundation Trust.

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-

Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost		(x3)
High volume	Y	(x2)
High risk	Y	(x3)
Known quality issue		(x3)
Wide variation in practice	Y	
NICE / NCEPOD related audit		(x3)
Defined measurable standards available		
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**6**	**Lvl 4 Cat B**

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit** ☐ **Service Evaluation** ☒

Audit / Service Evaluation Title: Generation of baseline audit data of meningioma patients treated at The Walton Centre NHS Foundation Trust.

Division: Neurology ☐ Neurosurgery ☒ Please specify department Click here to enter text.

Project Lead:

Contact No: Bleep No:

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale

Meningiomas are the most common intracranial tumour, but only in more recent years has there been interest even comparable to other intracranial tumours. The European Association of Neuro-Oncology published guidelines for the diagnosis and treatment of meningiomas in 2016, and while the guideline does not provide audit criteria per se, it provides a framework that suggests current best practice. This **service review** aims to generate baseline audit data for meningioma patients treated at The Walton Centre. In order to evaluate the service we provide, we first need to review how meningioma patients are treated at The Walton Centre.

Methodology

This **service review** will be completed by populating an existing database built in Microsoft Access. The database contains tables that allow the following baseline data to be recorded:

Demographics and baseline co-morbidities

Details of patient's presentation at the time of diagnosis

Radiological details documenting number, location, size, and other imaging characteristics

Timeline summary of interventions (including surgery, SRS, radiotherapy)

Morbidity associated with surgical intervention (Surgical, neurological, medical)

Histopathological data from surgical patients

Aims / Objectives

To populate a meningioma database with baseline audit data for the purposes of evaluating the service provided to meningioma patients at The Walton Centre.

Standards / Criteria Details (service evaluation N/A)

N/A

Guideline / Standards available: Yes ☐ No ☒

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: n/a

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☐ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☒	No ☐
High risk	Yes ☒	No ☐
High cost	Yes ☐	No ☒
Known quality issue	Yes ☐	No ☒
Wide variation in practice	Yes ☒	No ☐

Sample No: n/a Procedure codes to identify sample: n/a

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☒ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☒ No ☐

Multiple meningioma databases have been built over the past 10 years at The Walton Centre, but they all concern a specific data point (for instance patients with seizures, or patients with incidental meningioma). This work proposes to record details for all meningioma patients, without stratification.

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

However, once the database has been populated, we will propose further discussion regarding an annual update of the database in order to maintain a prospective meningioma database.

Rolling programme duration (number of years): n/a

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Is Clinical Audit Team support required? Yes ☒ No ☐

If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐ Total number 60 / per week

Patient Contact / Involvement – *(If project involves patient contact that is not part of the patients usual treatment or care please explain how in this section)*

Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date:ASAP

Anticipated project completion date: 18th December

Anticipated Action Plan Submission date: 6 MONTHS FROM START, PENDING RESULTS FROM NATIONAL TEAM RUNNING PROJECT

- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE – Basic data points described above.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead *(Signature)* _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead *(Signature)* _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

Project Prioritisation Assessment Tool

Audit title: An assessment of patient outcomes following clipping of aneurysms previously treated with endovascular intervention

The below table provides a system for prioritising locally conceived projects and what level of clinical audit team resource should be offered / provided.

If the project is mandatory please specify what priority level:-
Level 1 – External 'must do' ☐ Level 2 'Internal 'must do' ☐

Criteria	Tick all that apply	Score
High cost	Y	(x3)
High volume		(x2)
High risk	Y	(x3)
Known quality issue		(x3)
Wide variation in practice	Y	
NICE / NCEPOD related audit		(x3)
Defined measurable standards available		
Re-audit / repeat service evaluation		(x2)
Topic is a key clinical interest for the department / division		(x2)
Multidisciplinary project		
National / regional or multicentre project		(x2)
Total	**7**	**Lvl 4 Cat B**

Priority levels and audit team support

Priority level	Priority score
Level 1 – External 'must do'	Category A
Level 2 – Internal 'must do'	Category A
Level 3 – High local priority	> 10
Level 4 – Medium local priority	4 – 9
Level 5 – Low local priority	< 4

Priority level	Audit team resource	
Level 1, 2 & 3	Category A – Full support	Full practical assistance offered
Level 4	Category B – Moderate support	Level of practical assistance will be negotiated and agreed with project lead
Level 5	Category C – Minimal support	Advice, registration and monitoring

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - _____ **Project Type: -** Clinical Audit ☐ Service Evaluation ☒

Audit / Service Evaluation Title:
An assessment of patient outcomes following clipping of aneurysms previously treated with endovascular intervention

Project Lead: **Contact No: Bleep No**:

Division: Neurology ☐ Neurosurgery ☒ Please specify department
_____

Email address:

Audit / service evaluation supervisor: Supervisor signature:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale
Endovascular treatment is the initial consideration for treatment of intracranial aneurysms. However, for some aneurysms with complex anatomy, clipping remains an option. Clipping of an aneurysm that has previously been treated with endovascular intervention is more challenging than primary clipping and is associated with increased risk of complications. We therefore aim to assess the outcomes and complications in patients who have had clipping with a previous history of coiling.

Methodology
Retrospective analysis of all patient who received clipping of an aneurysm at the Walton Centre from 2005 to date.
For all patients, past imaging will be screened for evidence of endovascular treatment. If previous endovascular treatment found, patients to be included in the study.
Data to be collected:

- Patient demographics: age at clipping, gender, smoking Hx, Family Hx,
- Presentation (Incidental, symptomatic or ruptured)
- Coiled aneurysms details: location of aneurysm(s), endovascular treatment type, and recurrence.
- Operative details: Clipped aneurysm location, clips used, obliteration of aneurysm intraoperatively, obliteration of aneurysm post-op on CTA/DSA
- Post-op complications including: stroke, seizures, CSF leak etc

Aims / Objectives
Assess the outcomes for patients treated with clipping of intracranial aneurysms with a previous history of endovascular treatment to the same aneurysms.

Care Quality Commission:
The CQC assess the quality and safety of the care provided, they will look at whether the service is:

Safe ☒ Effective ☒ Caring ☐ Responsive to people's needs ☐
Well-led ☐

*** Please tick which category this audit / service evaluation will fall into ***

Standards / Criteria Details
Service evaluation – no standards against which to compare.

Standards / Guidelines / Criteria to be measured by audit project *(service evaluation N/A)*

Guideline / Standards available: Yes ☐ No ☒

If yes, please attach a copy or provide web link to the most current version:
_____

Name of Standard / guideline:
_____

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☐ Other ☐ State other: _____

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☐ No ☐

Is the audit / service evaluation issue: ☒	High volume	Yes ☐	No
☐	High risk	Yes ☒	No
☐	High cost	Yes ☒	No
☒	Known quality issue	Yes ☐	No
☐	Wide variation in practice	Yes ☒	No

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Sample No: Aim to catch all eligible patients Procedure codes to identify sample: L332

Are you planning to publish your audit/service evaluation findings nationally *(e.g. Medical journal)?*

Yes ☒ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously?
Yes ☐ No ☒
Will this be an on-going audit/service evaluation? Yes ☒ No ☐

Multidisciplinary: ☒ Single disciplinary: ☐

Is Clinical Audit Team support required? Yes ☒ No ☐

If yes, please specify type of assistance required:
- Population Identification ☒
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)
- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐
- Collection of case notes ☒

Total number of case notes – All eligible patients to be included, after screening of radiology

Number to be collected per week – aim for 20 per week, following screening to identify eligible patients

Patient Contact / Involvement

Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?
- Patient Questionnaire ☐ At clinic appointment ☐
- Other *(please give details)* _____

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☐

Date submitted to Audit team: 15/10/2020 Anticipated start date: 22/10/2020
Anticipated project completion date: _____
Anticipated Action Plan Submission date: _____

Proposer *(Signature)* _____ Date _____
Departmental Clinical Audit Lead *(Signature)* _____
Comments_____

_
Divisional Clinical Audit Lead *(Signature)* _____ Date _____
Is this topic a key clinical interest for the department / division? Yes ☐ No ☐

PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.

FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.

PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit X Service Evaluation ☐**

Audit / Service Evaluation Title: Management and outcome of intracranial infections with frontal sinus or mastoid source.

Division: Neurology ☐ Neurosurgery X Please specify department Click here to enter text.

Project Lead:

Contact No: Bleep No:

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale

Management of uncomplicated frontal sinusitis and mastoiditis is often conservative, a more aggressive approach is often advocated for frontal sinusitis and mastoiditis complicated by intracranial infection. It is possible that delayed surgical treatment of mastoiditis and frontal sinusitis may complicate the management of intracranial infection. This audit will appraise the current practice in the Walton Centre and aims to identify the potential risk factors for poor patient outcome and potential improvement for the pathway for this condition cared jointly with ENT.

Methodology

1. Acquire list of all admitted patients from 2000 to 2020 diagnosed with the following (diagnostic codes attached):
    a. Mastoiditis
    b. Frontal Sinusitis
    c. Intracranial Abscess/Empyema
2. Acquire list of all admitted patients who underwent the following procedures (operation codes attached):
    a. Mastoidectomy
    b. Drainage of Cerebral Abscess/Empyema
    c. Sinus Infection Washout
3. Review imaging, case, and patient notes for:
    a. Patient details (including co-morbidity, symptoms and timeline of presentation)
    b. Timing of referral
    c. Details and timing of Surgery (Neurosurgery and/or ENT procedure)
    d. Antibiotics
    e. Outcome
        i. Mortality (30 day and 6 months)
        ii. Organism Cultured
        iii. Functional outcome
        iv. Length of stay
        v. Discharge location (home/care/local hospital)

Aims / Objectives
Review management of intracranial infections with frontal sinus or mastoid source. Identify relationship between organism, timing of surgery and outcome, if potential delays to treatment could be improved.

Standards / Criteria Details (service evaluation N/A)

Comparisons of the management outcomes of patients with intracranial infections with frontal sinus or mastoid source jointly managed with ENT from guidelines and literature.

Compare cases managed early vs. late.

Guideline / Standards available: Yes X No ☐

If yes, please attach a copy or provide web link to the most current version:
https://www.entuk.org/sites/default/files/files/Mastoiditis%20flowchart%20v7.pdf

Name of Standard / guideline: British Society of Otology Acute mastoiditis guideline

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☐ Other X State other: British Society of Otology

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes X No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No X
High risk	Yes X	No ☐
High cost	Yes X	No ☐
Known quality issue	Yes X	No ☐
Wide variation in practice	Yes X	No ☐

Sample No: Click here to enter text. **Procedure codes to identify sample:** Click here to enter text.

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes X No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No X

Is this project part of an agreed departmental rolling programme? Yes ☐ No X

Rolling programme duration (number of years): Click here to enter text.

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Rolling programme duration (number of years): Click here to enter text.

Is Clinical Audit Team support required? Yes X No ☐
If yes, please specify type of assistance required:

- Population Identification X
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry X
- Analysis ☐
- Presentation ☐

Collection of case notes X Total number 30

Patient Contact / Involvement – *(If project involves patient contact that is <u>not</u> part of the patients usual treatment or care please explain how in this section)*

Will the audit involve direct patient contact? Yes ☐ No X

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details):*

Has approval been sought from the Patient Information Panel? Yes ☐ No X N/A X

Anticipated start date: 20/11/2020

Anticipated project completion date: 20/05/2021

Anticipated Action Plan Submission date: TBC

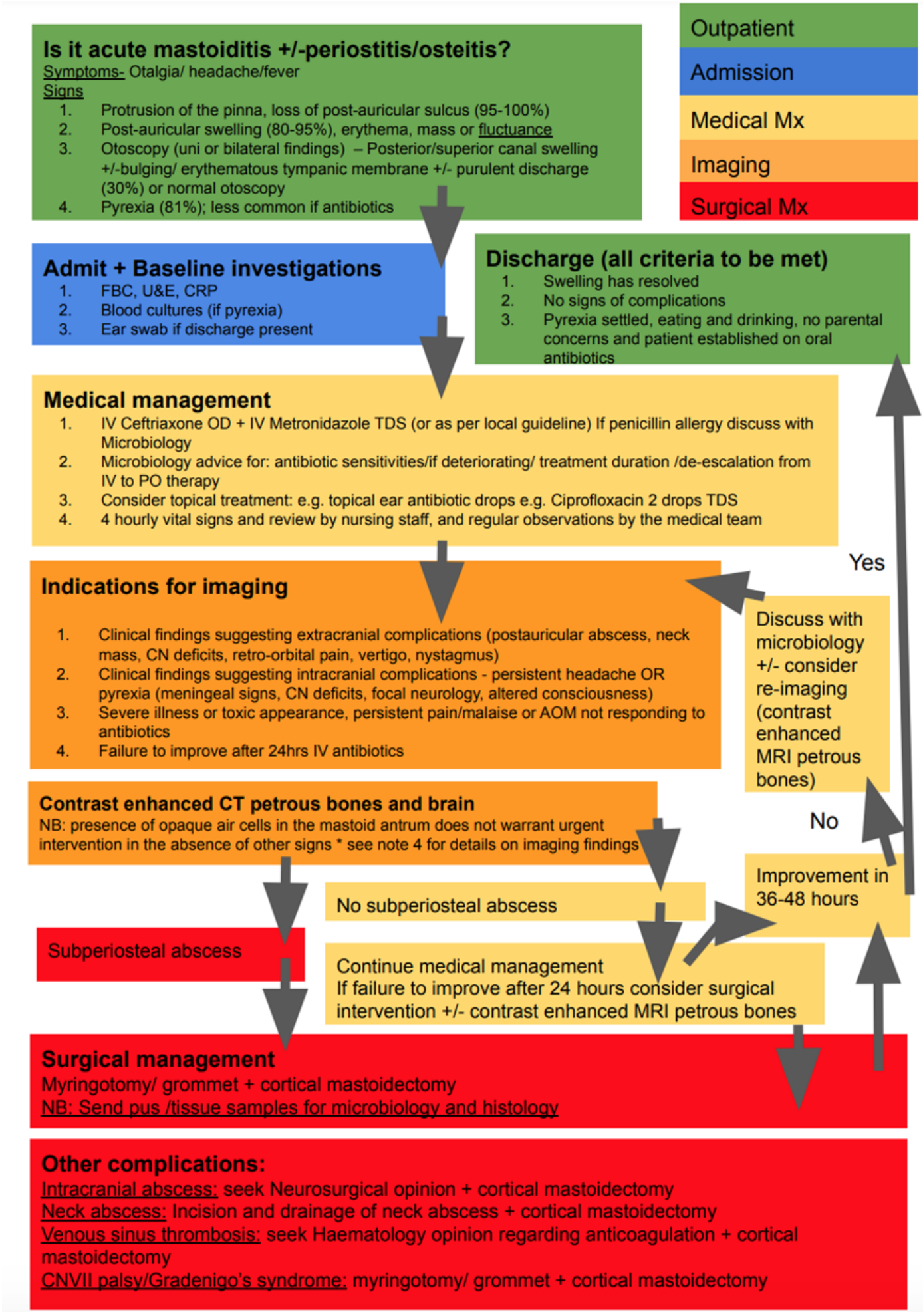
- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead *(Signature)* _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead *(Signature)* _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐


Outpatient
Admission
Medical Mx
Imaging
Surgical Mx
Is it acute mastoiditis +/-periostitis/osteitis?
Symptoms- Otalgia/ headache/fever
Signs
1. Protrusion of the pinna, loss of post-auricular sulcus (95-100%)
2. Post-auricular swelling (80-95%), erythema, mass or fluctuance
3. Otoscopy (uni or bilateral findings) – Posterior/superior canal swelling +/-bulging/ erythematous tympanic membrane +/- purulent discharge (30%) or normal otoscopy
4. Pyrexia (81%); less common if antibiotics
Admit + Baseline investigations
1. FBC, U&E, CRP
2. Blood cultures (if pyrexia)
3. Ear swab if discharge present
Discharge (all criteria to be met)
1. Swelling has resolved
2. No signs of complications
3. Pyrexia settled, eating and drinking, no parental concerns and patient established on oral antibiotics
Medical management
1. IV Ceftriaxone OD + IV Metronidazole TDS (or as per local guideline) If penicillin allergy discuss with Microbiology
2. Microbiology advice for: antibiotic sensitivities/if deteriorating/ treatment duration /de-escalation from IV to PO therapy
3. Consider topical treatment: e.g. topical ear antibiotic drops e.g. Ciprofloxacin 2 drops TDS
4. 4 hourly vital signs and review by nursing staff, and regular observations by the medical team
Indications for imaging
1. Clinical findings suggesting extracranial complications (postauricular abscess, neck mass, CN deficits, retro-orbital pain, vertigo, nystagmus)
2. Clinical findings suggesting intracranial complications - persistent headache OR pyrexia (meningeal signs, CN deficits, focal neurology, altered consciousness)
3. Severe illness or toxic appearance, persistent pain/malaise or AOM not responding to antibiotics
4. Failure to improve after 24hrs IV antibiotics
Yes
Discuss with microbiology +/- consider re-imaging (contrast enhanced MRI petrous bones)
No
Improvement in 36-48 hours
Contrast enhanced CT petrous bones and brain
NB: presence of opaque air cells in the mastoid antrum does not warrant urgent intervention in the absence of other signs * see note 4 for details on imaging findings
No subperiosteal abscess
Subperiosteal abscess
Continue medical management
If failure to improve after 24 hours consider surgical intervention +/- contrast enhanced MRI petrous bones
Surgical management
Myringotomy/ grommet + cortical mastoidectomy
NB: Send pus /tissue samples for microbiology and histology
Other complications:
Intracranial abscess: seek Neurosurgical opinion + cortical mastoidectomy
Neck abscess: Incision and drainage of neck abscess + cortical mastoidectomy
Venous sinus thrombosis: seek Haematology opinion regarding anticoagulation + cortical mastoidectomy
CNVII palsy/Gradenigo's syndrome: myringotomy/ grommet + cortical mastoidectomy

OPERATION AND DIAGNOSIS CODES

Operation Codes

Mastoidectomy	D10.1 – D10.9
Drainage Abscess	D04.2
Mastoid Operation	D12.1 – D12.9
Frontal Sinus	E14.1 – E14.9
Maxillary Antrum	E13.1 – E13.9
	E16.1 – E16.9
	E17.1 – E17.9
Drainage abscess	A05.1
	A41.2
	A40.8 – A40.9

Diagnosis Codes

Mastoiditis	H70.0 – H70.9
Frontal Sinusitis	J32.0 – J32.9
	J01.0 – J01.9
Empyema	G06.0, G06.2

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Action Plan

Ref no: NS 341

Clinical Audit Title	**The use of suction drains in neurosurgery**		
Date audit complete	04th Jan 2021	**Date action plan completed**	20th April 2021
Auditor		**Name of policy / guideline**	N/A, service evaluatiion
Division	Neurosurgery	**Source of policy / guideline**	N/A, service evaluation

Summary of Findings:

- The use of drains, including suction drains in neurosurgery is individual preference-based, rather than scientific evidence-based.
- Furthermore, the use of suction drains has been associated with significant risks to patients, including sudden death.
- We presented 2 cases of unfortunate sudden deaths following uneventful cranioplasty procedures, both of which were associated with the use of a suction drain.
- We have reviewed the use of suctions drains at our institution following both craniotomy and cranioplasty procedures in 2016 and 2017 (the period over which our reported cases occurred). During this time, 1395 craniotomies and 51 cranioplasties were performed. Suction drains were used in 28 (2%) of craniotomies and in 9 (17.6%) of cranioplasties. We did not observe any sudden deaths following craniotomy when suction drains were used, and noted only the 2 fatalities after cranioplasty.
- We also reviewed the literature focusing on the benefits and risks in the use of suction drains, and discussed pathophysiological mechanisms underlying sudden death associated with their use.
- There is no substantial evidence to support the use of suction drains in neurosurgery. Furthermore, they have been associated with significant complications, including risk to life.

Key success:

- Peer-reviewed manuscript describing these findings has been published.

Key concerns:

- Our experience and literature review suggest that the risk of sudden death is disproportionately higher following cranioplasty.

Recommendations discussed:

- We do not recommend the use of suction drains in cranial neurosurgery, and we strongly recommend against their use in cranioplasty procedures.

Presentation / Dissemination of Project
Date findings were presented / disseminated: Manuscript published
Department where discussed or presented: Neurosurgeon's Consultant meeting

Actions agreed following recommendations discussed:-

Issue	Action required	Named lead for action	Timescale	Evidence	Reportable to (group/meeting)
1) Risk of sudden death is disproportionately higher following cranioplasty, strongly recommend against the use of suction drains	Change in practice – not to use suction drains		Completed		NS Risk and Governance
	Publish results and feedback in the Neurosurgeon Consultants meeting		Completed		NS Risk and Governance

Re-audit date _____ **If no re-audit planned please give reasons why?** _____

Will this be an on-going audit? Yes ☐ No ☒

Are there any potential barriers / problems to prevent the implementation of the above actions? Yes ☐ No ☐

If yes to the above please state who the issues have been referred to:

Name _____ **Designation** _____ **Date referred** _____

Signature:_____ **Date:**_____

Have any issues been logged on the risk register? Yes ☐ No ☐ N/A ☐

Please provide details of issue(s) logged on the risk register:

The Walton Centre NHS
NHS Foundation Trust

Clinical Audit / Service Evaluation Registration Form

Clinical Audit definition

Clinical Audit is a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and the implementation of change. Aspects of the structure, processes and outcomes of care are selected and systematically evaluated against explicit criteria. Where indicated, changes are implemented at an individual, team or service level and further monitoring is used to confirm improvement in healthcare delivery.

Service evaluation

Service Evaluation is undertaken to benefit those who use a particular service and is designed and conducted to define or judge current service. Your participants will normally be those who use the service or deliver it. It involves an intervention where there is no change to the standard service being delivered (e.g. no randomization of service users into different groups). This does not require ethical approval.
It is possible to use data collected from participants during a service evaluation for later research as long as:

- the data is completely anonymous;
- it is not possible to identify participants from any resulting report;
- use of the data will not cause substantial damage and distress

Please note that to complete this form your project **must be clinical audit or service evaluation**. If you are unsure whether your project is clinical audit, service review or research brief definitions are given below as a guide:

Clinical Audit

- Measures existing practice against **best practice**, **evidence based clinical standards** *(this may include Royal College, British Association, NICE or Local guidance etc.)*

Research

- Generates new knowledge where there is no or limited research evidence available and which has the potential to be generalisable.

Service Evaluation:

- Seeks to evaluate the effectiveness or efficiency of a new or existing service to help inform local decision making (has been also referred to as service review, benchmarking or a baseline audit). This includes patient or staff satisfaction surveys.

CLINICAL AUDIT / SERVICE EVALUATION PROJECT REGISTRATION FORM

Ref No: - Project Type: - **Clinical Audit** ☐ **Service Evaluation** ☒

Audit / Service Evaluation Title: The historical use of suction drains after cranial neurosurgery at The Walton Centre NHS Foundation Trust.

Division: Neurology ☐ Neurosurgery ☒ Please specify department Click here to enter text.

Project Lead: /Ajay Sinha

Contact No: Bleep No:

Email address:

Audit / service evaluation supervisor:

Other professionals involved / project team members details
(Please provide names and roles within the project eg data collection, analysis etc.)

Background / Rationale

The use of drains after cranial neuro surgery, including suction drains is highly variable across neurosurgical units within the UK and other countries. There is increasing recognition that suction drains in particular offer no added benefit over non-suction drains, and may be associated with harm, including death. There are multiple reports within the literature of sudden death associated with their use and there seems to be a general trend away from their use.

We (The Walton Centre) currently have a manuscript under review with the British Journal of Neurosurgery describing two unfortunate deaths from our own trust that occurred following cranioplasty, in the time period 2016-2017. Like many case reports describing this event, suction drain use seems to be an associated risk factor, but by no means a definitive cause of sudden death.

The editor of the British Journal of Neurosurgery, like ourselves recognises that the literature (including our two unpublished cases) seems to demonstrate that sudden death associated with the use of suction drains is more prevalent after cranioplasty in particular. This is a novel observation which they are keen to publish in their journal. The editor – Patrick Mitchell has requested that we supplement the manuscript with a description of the prevalence of the use of suction drains across cranial neurosurgery in general. We know anecdotally that the use of suction drains has probably diminished within this trust. However, the editor requests historical data on their use. Therefore, I intend to identify from a sample of craniotomies, cases where suction drain use is described in the operation notes, and any unexpected hyperacute/acute clinical deterioration with their use.

There are a number of clear limitations with this work, principally that drain use description in operation notes may be limited, absent, or not representative of the drain used, including suction. This work does not intend to prove any association of the use of suction drains as a cause of sudden death. The only intention is to appreciate the prevalence if their use over a historical time-period.

This work is principally to supplement the manuscript under final review with the aforementioned journal, which we are of course keen to publish in order to make this important observation for the global neurosurgery community. However, it would be of interest to ourselves to repeat this piece of work to confirm if in fact the use of suction drains after cranial neurosurgery has indeed diminished within our trust. This could then be presented for educational purposes within the trust and as a national service evaluation.

Methodology

1) **Identify operative cases coded as craniotomy in the years 2016-2017**
2) **Identify from operation notes descriptions of suction drain use post-operatively.**
3) **Identify from EP2 and description of hyperacute/acute clinical deterioration or death.**
4) **Identify proportion of cranioplasty cases (already completed from prior work)**

Aims / Objectives

Identify the prevalence of the use of suction drain use following craniotomy with a particular emphasis on cranioplasty over the years 2016-2017 and sudden death/clinical deterioration.

Specifically:

a) the number of craniotomies performed over a time period, b) the proportion of cases describing the use of suction drains, c) Sudden death in any of the craniotomies identified d) the proportion of cases which are cranioplasties from the above.

Standards / Criteria Details (service evaluation N/A)

N/A

Guideline / Standards available: Yes ☐ No ☒

If yes, please attach a copy or provide web link to the most current version: Click here to enter text.

Name of Standard / guideline: n/a

Source of Standard / guideline: NSF ☐ NICE ☐ Royal College ☐
Trust ☐ Other ☐ State other: Click here to enter text.

Review/assessment of guideline/standard undertaken to ensure it is appropriate & can be measured
Yes ☐ No ☐

Is the audit / service evaluation issue:

High volume	Yes ☐	No ☒
High risk	Yes ☒	No ☐
High cost	Yes ☐	No ☒
Known quality issue	Yes ☒	No ☐
Wide variation in practice	Yes ☒	No ☐

Sample No: n/a Procedure codes to identify sample: n/a

http://www.raosoft.com/samplesize.html - link to tool that may be used to calculate sample size

Are you planning to publish your audit/service evaluation findings nationally

(e.g. Medical journal)? Yes ☒ No ☐

Is this a re-audit or if service evaluation, has service been reviewed previously? Yes ☐ No ☒

Is this project part of an agreed departmental rolling programme? Yes ☐ No ☒

Rolling programme duration (number of years): n/a

Rolling programme frequency: Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐

Multidisciplinary: ☐ Single disciplinary: ☐

Is Clinical Audit Team support required? Yes ☐ No ☒

If yes, please specify type of assistance required:

- Population Identification ☐
- Design of data collection tool ☐

(If not required please, attach a copy of the tool to be used)

- Database design ☐
- Data entry ☐
- Analysis ☐
- Presentation ☐

Collection of case notes ☐

Patient Contact / Involvement – *(If project involves patient contact that is <u>not</u> part of the patients usual treatment or care please explain how in this section)*

Will the audit involve direct patient contact? Yes ☐ No ☒

How will the patient be involved?

Patient Questionnaire ☐ At clinic appointment ☐

Other *(please give details)* Click here to enter text.

Has approval been sought from the Patient Information Panel? Yes ☐ No ☐ N/A ☒

Anticipated start date: ASAP

Anticipated project completion date: 18th December

Anticipated Action Plan Submission date: 1 month from completion date

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- **PLEASE ATTACH A COPY OF YOUR DATA COLLECTION TOOL / PATIENT QUESTIONNAIRE – Basic data points described above.**
- **FOR ALL RE-AUDITS OR REPEAT SERVICE EVALUATIONS PLEASE ATTACH A COPY OF THE PREVIOUS AUDIT OR SERVICE EVALUATION REPORT.**
- **PLEASE ENSURE THIS FORM IS SIGNED BY YOUR DIVISIONAL AUDIT LEAD BEFORE SUBMISSION TO THE CLINICAL AUDIT TEAM.**

Departmental Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Comments Click here to enter text.

Divisional Clinical Audit Lead ***(Signature)*** _____ Date: Click here to enter text.

Is this topic a key clinical interest for the department / division? Yes ☐ No ☐