**Project Proposal and Specification for Prospective Recording of Complications of Surgical and Medical Care.**

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**Current situation**

There is currently no for al mechanisms for recoding complications of surgical procedures or complications arising in the course of medical care, in a structured fashion. Complications are noted in free text ward round entries with no consistency about how these are transferred to discharge documentation,

**The problem**

In a proactive safety centred care system it is vital to have rapid oversight of complications in a structure that can easily analysed to reveal system failures. It is important that clinical leaders have an oversight of complications and the trust is able to address any emergent patterns in unexpected complications.

**Proposed solution**

Prospective documentation of complications during an inpatient episode is likely to be much more reliable than attempting to retrospectively document these at the end of the episode. Whilst complications may emerge at any time in a 24-hour cycle, the most reliable consistent time for documenting the nature an severity of these is likely to be the daily ward round where there is consultant or other senior medical input for verification. Recording complications in structured electronic record facilitates rapid analysis and reporting.

It is therefore proposed that there should be a recording form closely integrated with the existing ward round record for prospective entry of the nature and severity of complications during the ward round.

**Specification**

The data collection form should be easily accessible form the documentation used during the ward round and be part of or closely integrated with the EPR (currently Harris Flex)

In order to avoid multiple instances of synonymous complications, use of free test entry should be avoided as much as possible, and entry should be made using pull down menus.

To avoid unwieldy pull down lists, complication should be grouped and the [complication selection list](https://lthtr-my.sharepoint.com/personal/alan_beveridge_lthtr_nhs_uk/Documents/IT%20projects/Complication%20recording/Complicatons%20v1.0.docx) populated after making an initial choice of a complication group based on body site.

Severity of complications should be calculated from an established scoring system – Clavien Dindo- based on additional tick box questions on the form:

Select required interventions:

* Antibiotics
* Blood transfusion
* Parenteral nutrition
* Surgical intervention
* Endoscopic intervention
* Radiological intervention
* General anaesthetic
* ICU admission – single organ dysfunction
* ICU Multiple organ dysfunction
* Fatal outcome

Clavien Dindo classification can then be calculated by the algorithm in Appendix 1

The user interface should display previously identified complications and their recorded severity (Clavien Dindo) so that re-entry is only carried out if a new complication is identified or there is an increase in the severity of an existing complication.

Users should be given the option of repeating the process to enter two or more synchronous complications.

Complications should be matchable to SNOMED CT codes,

UI returns object containing:

{

PatientID: Integer

Date/Time: DateTime

Body site: string (from first pull-down)

Complication: string (from subsequent pull-down

Severity features: string array (from check boxes)

Clavien Dindo: string (return from severity calculating function)

}

Data should be accessible on a trust, team and consultant basis via appropriate dashboards accessible by appropriate management, governance leads and consultants,

Data should feed into the trusts data stream to OMOP

**Proposed rollout**

The project will be piloted initially in GI surgery with subsequent expansion to remaining surgical specialities. Consideration can be given to implementation within medical specialities with appropriate adaptations.

**Work Plan**

Produce list of complications grouped by body site

Consultation with specialty representatives on complication list

Prototype user interface in ReactJS for demonstration and discussion

Refactor UI in Clinidocs

Persistence layer in Flex

Build dashboards for return of return to clinical and management stakeholders

Build feed to OMOP

**Stakeholders**

Clinical

Ward Round Improvement Group – chaired by Mr A Bhowmick Deputy Medical Director

Mr S Canty, Divisional Director for Surgery

Clinical Directors and governance leads of surgical specialties

IT

Mr S Dobson

Mrs Janet Young

Mr Barry Hale

Mr D Cottle

Mr V Chandrabalan

Appendix 1 -Calculation of Clavien Dindo

Parameter- string array from check boxes

If (BoxesChecked includes(death))

return 5

else if (BoxesChecked includes(ICU Multiple organ dysfunction))

return b

else if (BoxesChecked includes(ICU admission – single organ dysfunction))

return 4a

else if (BoxesChecked includes(General anaesthetic))

return 3b

else if (BoxesChecked includes(Surgical intervention OR Endoscopic intervention OR Radiological intervention))

return 3a

else if (BoxesChecked includes (Antibiotics OR Blood transfusion OR Parenteral nutrition))

return 2

else

return 1