NATIONAL QUALITY ASSURANCE & IMPROVEMENT SYSTEM CLINICAL

NQAIS Clinical Training Slides incorporating 2022 updates effective from 1st March 2023

The link for NQAIS Clinical training materials as well as the Research Guide are available at the link below:
https://www.rcsi.com/surgery/practice/national-clinical-programmes/surgery

Quick Slide Find (total slides = 100)

Summary of updates to the NQAIS Clinical application in 2022.

- Phase 1 – Updates agreed in June 2022

- The Acute Medicine Programme list has been updated to include Mallow and St. Michaels.

- A number of new variables have been added to both records view and the crosstabs screen. They are as follows; (a) Discharge mode, (b) Palliative care flag, (c) Mode of Emergency admission, (d) Medically fit for discharge, (e) Date of transfer to pre-discharge unit, (f) COVID-19 indicator and (g) Ukraine Temporary Protection Directive.

- The option to rename the AMAU as ASAU or AAU has been removed from the display button.

- The "Maxillo-Facial" specialty has been renamed as "Oral & Maxillo-Facial", while also retaining Oral surgery.

- The User Management link within the blue navigation bar should always appear within the blue navigation bar. smaller screens should no longer have issues viewing this button.

Phase 2 – Updates agreed in November 2022

- **A "Select/deselect" button** has been added to the Records View, this appears at the top left hand corner of the variables table. It will select/deselect only the records view variables and will not affect the selection of the filters column.

- Within the Records View users can **bookmark selected variables and filters**. It will retain the selected variables and filters on screen when the user saves a bookmark. The user can retrieve a records view bookmark <u>only</u> from the records view screen. A retrieved bookmark will restore the previously selected variable and filter choices.

- The option to reframe the trend charts as a % of Emergency has been removed from all trend charts.

- Consistent **sorting signals across the application** have been created. To signal in a consistent manner that columns are sortable, titles are in blue and arrows are hidden until the user clicks the title to sort the column. To bring all tables to this standard the following changes were made;

- All titles on the grid page are blue, (b) Within the records view titles will be made blue, and arrows will be hidden until a user clicks on the title to sort it.

What is NQAIS Clinical?

It is a web enabled interactive application that analyses hospital's own HIPE data. The product of collaboration between RCSI, RCPI and the HSE.

HIPE data supplied by the Healthcare Pricing Office is analysed for clinicians and managers - Surgery, Medicine, Maternity and New-born are integrated into a single system

Supports variation analysis (differences) using inter-quartile comparisons (i.e. to top 25% of teams in the country)

AIM: The overall aim of NQAIS Clinical is to provide clinical leadership with comparative performance metrics for the objective management of inpatient lengths of stay and same day / day case discharge rates in support of safe effective care at the most appropriate setting. . In addition the metrics in the system can be used by clinical and management leads in support of quality and process improvement in the delivery of care based on interdisciplinary co-operation using their own data.

Why do we need to change the way we do things?

Demographics

IRELAND ACTUAL POPULATION 2011 AND PROJECTED POPULATION 2040 BY GENDER AND AGE GROUP
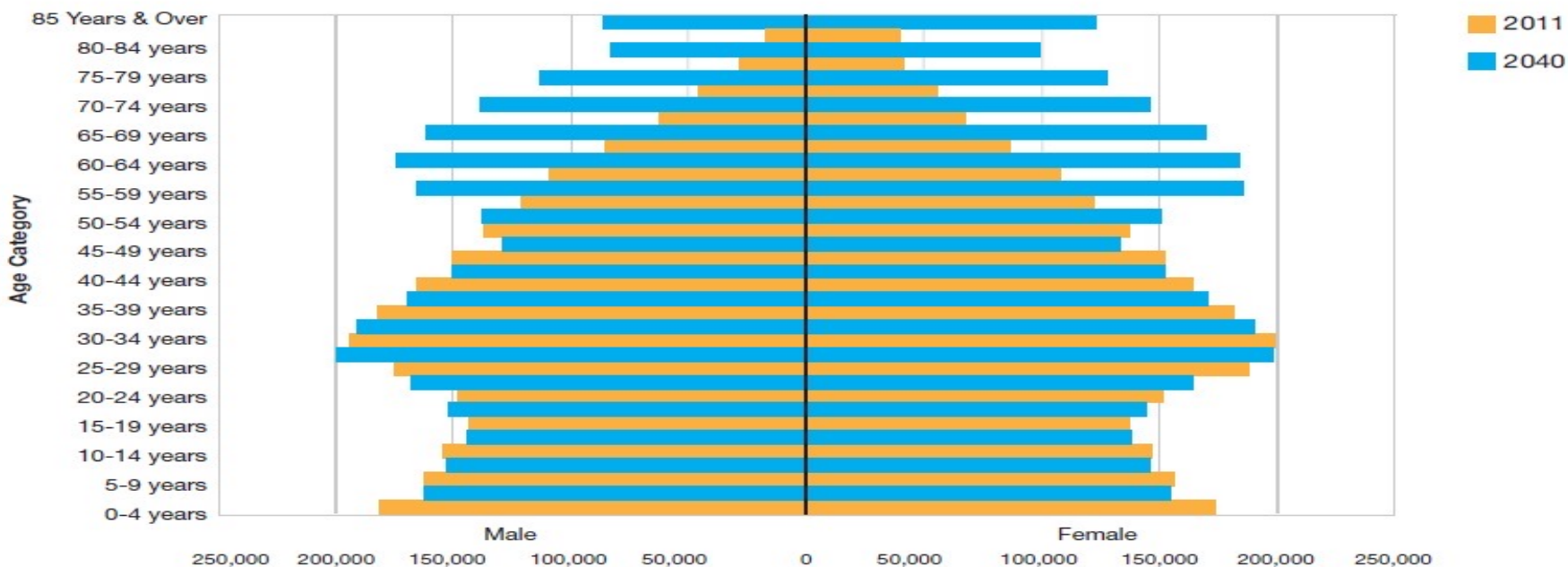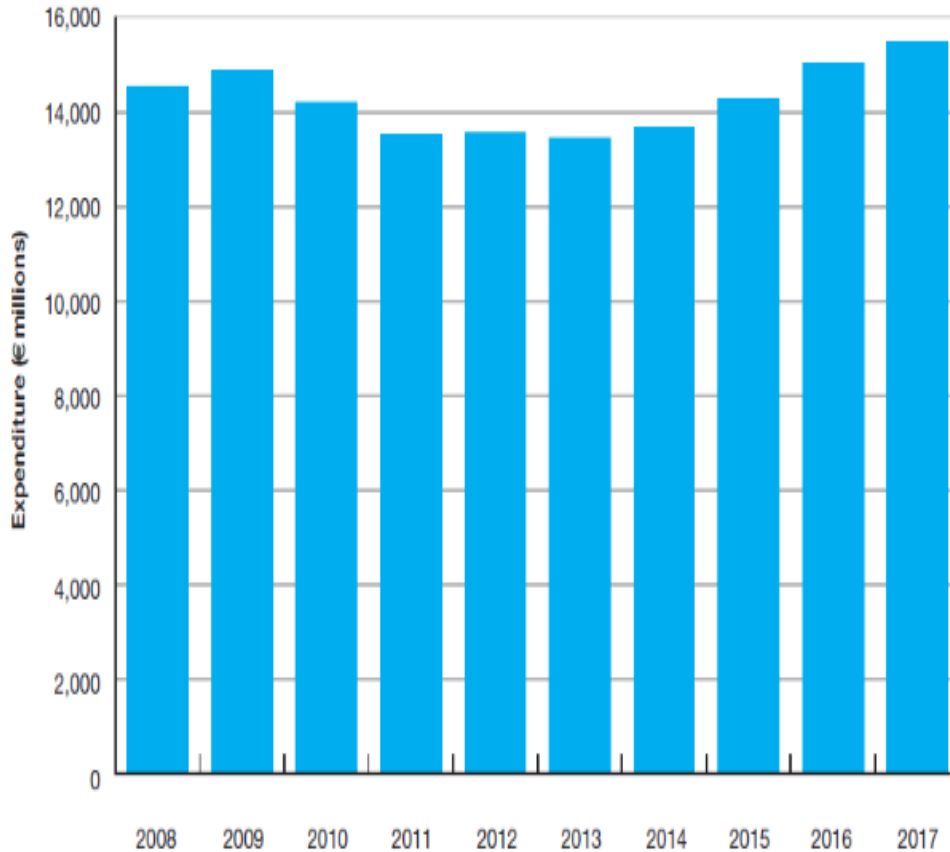

Source: Central Statistics Office Population and Labour Force Projections 2016-2046

Population ↑ and aging ↑ (+ AvLOS increases with age)

Total Public Health Expenditure in Ireland 2008 – 2017 (DoH 2018)

- Financial outlay on healthcare is struggling to meet the demand

- Covid -19 has placed further demands on finance and increasing challenges for the delivery of healthcare

Hospital In-patient Enquiry system (HIPE) background

HIPE was set up in 1971

**Funded by the HSE to collect data on every inpatient and day case discharge**

Directed now by HPO & is an integral part of Activity Based Funding

HIPE coders in each hospital record clinical and admin data from patient records (paper based / PAS systems)

- Patient demographics
- Principal Diagnosis & 29 additional diagnoses
- Principal Procedure & 19 additional procedures
- Specialty of discharging team

- Uses ICD 10 AM / ACHI / ACS / 10th Edition Jan 2020
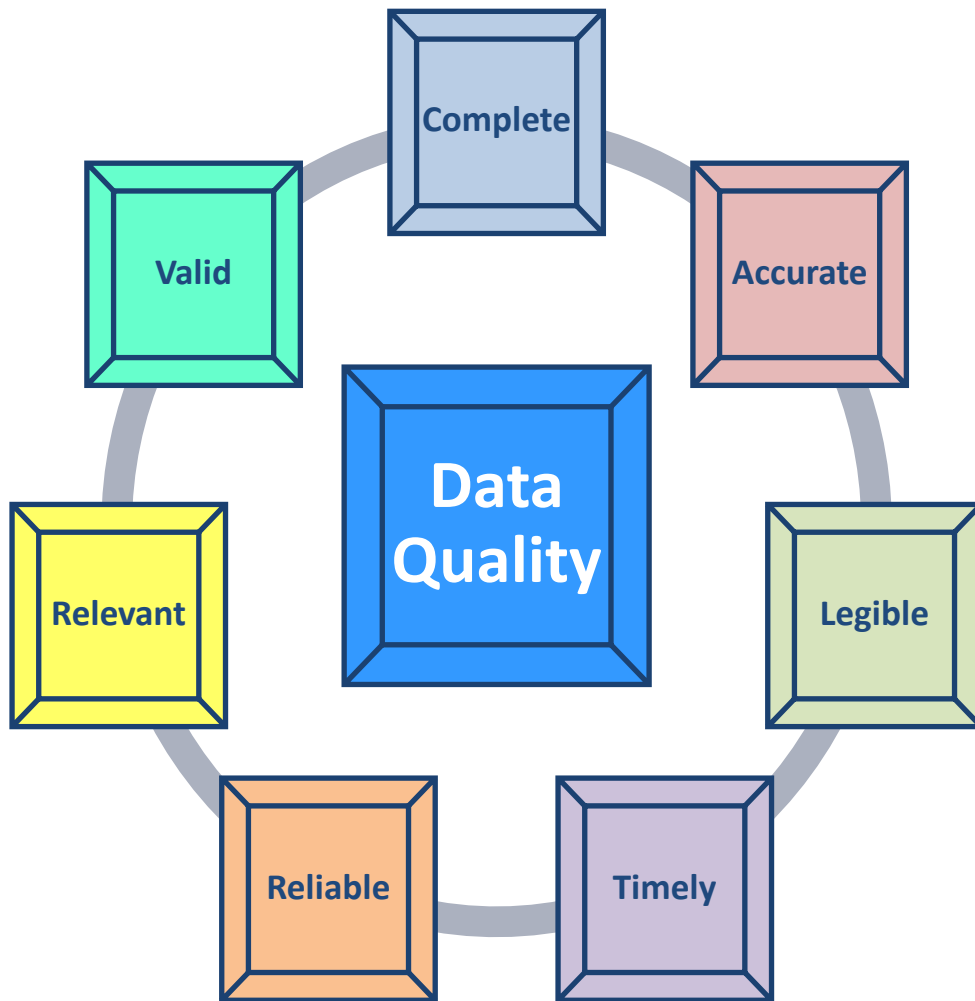- 52 hospitals records are used in NQAIS Clinical

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GENERATION OF HIPE DATA for NQAIS Clinical

HPO -> HIPE - > Health Intelligence - > NQAIS Clinical
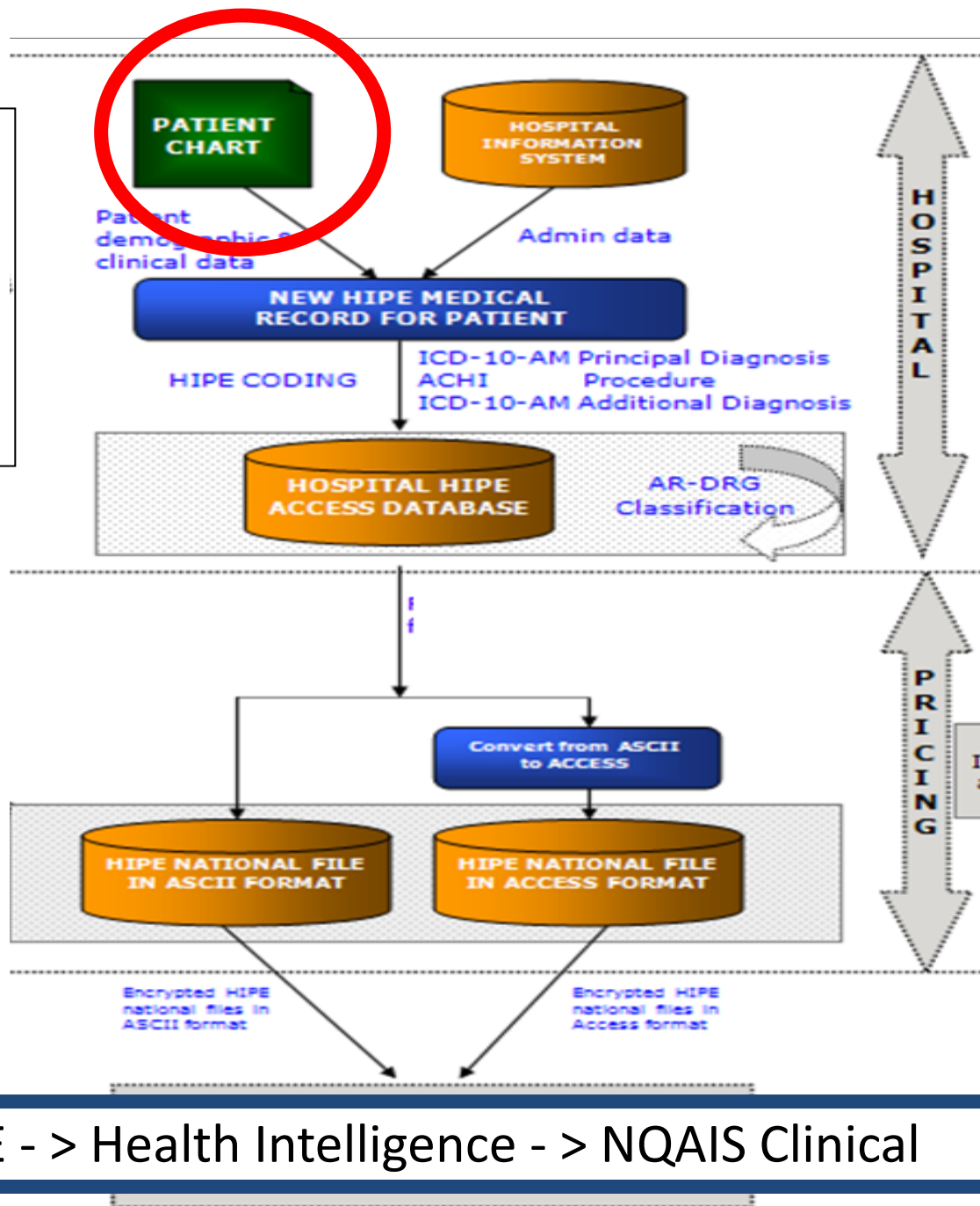
Data Quality

The quality of the data is most important
This commences with the quality of the data in the patient record & good quality timely coding

HIPE – Administrative Data

1969 — pilot.

1971 — rolled out to all acute public hospitals.

Initially data was **<u>not</u>** accepted by Clinicians

Why?

- They didn't understand or engage with data or coders
- They didn't have to (Germany)
- They wanted their own specialty / institutional data bases (and staff!)
- They didn't have control
- They regarded it as inaccurate
- They did not appreciate its scope
- They found it difficult to use and interrogate and didn't have the time
- They felt clinical outcome was more important than process

………and still many feel the same!

Sequence of reactions that challenge data
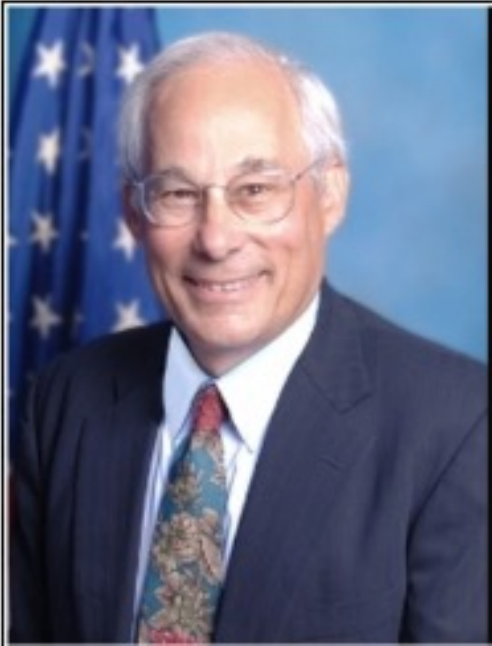
Donald Berwick (born 1946)

Former president and CEO of the Institute of Heatlhcare Improvement.

- 'The data is wrong'

- 'The data is right but it's not my problem'

- 'The data is right; it is a problem but not my problem'

- 'I accept the burden of improvement'

Benefits of NQAIS Clinical include

- Data is displayed in an easily understood format

- Anonymity for patients and teams is a priority

- Web enabled interactive application – the user controls reports

- Can view hospital wide data not accessible previously - with relevant authorisation

- Hospital or teams performance can be compared to the top quartile teams nationally for AvLOS and Day Case rates

- Principal diagnoses and Principal procedures performed as well as secondary diagnoses and secondary procedures can be viewed – areas of greatest need can be identified

- Identification of the numbers of procedures performed and diagnoses made in a given period of time

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Benefits of NQAIS Clinical contd;

- Clinical risk, quality and safety managers can view 'hospital acquired' conditions

- Business cases can be developed for resources based on the data

- The system doesn't require an annual service charge

- Developed inside governance of HSE, DOH

- Metric definitions and taxonomy are aligned to current usage in Ireland

- CPD points (RCSI & RCPI) & CEU (NMBI)

- Research

Data in NQAIS Clinical is anonymised

- The patient's Medical Record Number is encrypted (E-MRN)

- Patients' date of birth is replaced by their age (on admission).

- Patients address is converted to County or City zone of residence

- The consultants Medical Council number is converted to a four character code

- No people names are stored in the data (patient or clinician)

- Procedures or Diagnoses with less than 6 patients cannot be published

- The Web site is encrypted

- Users must have authorisation to access the system.

  - User Id & password from an authorised network / computer

- Users must comply with HSE information policy

Patient Record = Scope of NQAIS

Plots -> Total -> Records or Crosstab

With the inclusion of CSV function, up to 1m rows can be downloaded from the Records Select view below, previously only 65,000 rows could be downloaded.

2010 - Birth of Clinical Programmes (33)- QI

Surgery

Acute Medicine

Acute and Elective Models of Care

Acute Medicine Model of Care

e.g. Day Surg, DOSA

e.g. Setting up AMAUs

On site visits -

-know what was happening

DATA

DOSA – Day of surgery admissions: AMAU – Acute Medical Assessment Units

Acute Hospital services flow

Primary & Community Care

Primary & Community Care

Home

Assisted Living

Rehab

Nursing Home

Com'y. Hosp.

Hospice

Home

Assisted Living

Rehab

Nursing Home

Com'y. Hosp.

Hospice

Outpatients Wait list

Outpatients ≈ 3.3 million (2015)*

New ≈ 923,000 pa

Review ≈ 2,375,000 pa*

IP/DC Wait list

Other Wait list

HIPE / ABF ≈ 1.7 million records p.a.

Elective Day Case

Elective Stay

Maternity

New Born

Emerg. Stay

Emerg. Same Day

Emergency Departments ≈ 1,300,000 (2015)# *(conversion < 30%)*

*HPO – provide HIPE data;   *OSPIP 2015 data;   #Acute Hospitals Service Plan*

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Acute Medical & Surgical patient flows & ABF

GP referral to A*AU – under criteria guidance

Hospital referral / Transfer (i.e. from model 2 or to tertiary)

Acute Floor

A*AU Assess Senior Decision maker

ASU Treat (Theatre)

SSU Ward (observer / recovery)

ABF / DRG's If wards regist'd

Ambulatory Emergency Care (AEC) Senior Decision maker

AEC Treat

GP

GP Refer to GP

GP Referral to ED

Ambu lance

Patient Self Referral to ED

Patient

ED Triage

?

Out Patient referred In house

Out Patient

ED Treat

Discharge path (possible planned returns)

Inpatient Senior Decision maker

Theatre Complex

Inpatient Ward (observer / recovery)

Diagnostics
Imaging: Xray, Ultra sound, MRI/CAT, …

Assessment & observation leverage Diagnostics as appropriate

Block Grant **LABS: Bloods, cultures, …**

ABF / DRG's

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DRG Structure

- DRGs are identified by a 4 character code

Indicates the **MDC** to which the DRG belongs ➡️ **B 7 0 A** ⬅️ Indicates the **complexity** level of a DRG
A – highest
B – second highest
C – third highest
D – fourth highest
Z – no split

⬆️

Indicates the **partition** to which the DRG belongs:
01-39 – surgical
40-59 – other
60-99 medical

From HPO 2018

Example:

DRG **B70A** *Stroke and other cerebrovascular disorders, Major Complexity*

B: MDC – diseases and disorders of the nervous system,

70: medical

A: highest complexity level within the ADRG group

Update: All extracts of DRG data in NQAIS Clinical using Record select or CrossTab has been updated to AR-DRG v8.0 and is now in sync with the HPO and Casemix data.

NQAIS Clinical updates re: CCSs and re-naming of Procedures

HIPE coding to ICD 10 AM / ACHI / ACS 10th Edition from 1st Jan 2020

Changes include:

- Addition of 384 new diagnoses
- 644 assignments of diagnoses to more appropriate CCS of diagnoses level *(including 384 new diagnosis codes)*

- Addition of 179 new procedures & health interventions
- 345 assignment of procedure/health interventions to more appropriate procedure groups *(including 179 new procedure codes)*
- Renaming of procedure group 'Rheumatology / MSK' to 'Non surgery T&O'

- Re-name specialty group Maternity to Obs/Gynae and now includes Gynaecology, Obs/Gyn and Obstetric clinical specialties

- In addition there are some updates to hospital names and spellings
- Inclusion of CHI Connolly

NQAIS Clinical updates contd;

- Updates to NQAIS Clinical 'targets' and 'trim points' used internally in the system for 'on-target', 'near target', 'off target' and 'post-trim' metrics throughout the system's reports, based on 2017 and 2018 data

- Updates to hospital names and spellings – *has an impact on the order of hospital display in Flow & Grid Reports and outputs from CrossTab and Record select*

- Bookmarks need to be re-created because of changes in mapping of procedures to procedures groups and CCS of diagnoses to Groups of CCSs of diagnoses and specialties to specialty

Converting HIPE data into meaningful information (updates contd;)

Diagnosis (the <u>principal </u>admission diagnosis/Dx1 is used)

- Coded using ICD 10 AM / ACHI / ACS Edition 10 International Classification of Disease codes   ~ 19,980 Diagnoses

- 19 Groups of Diagnoses in NQAIS Clinical

- 297 Clinical Classification System/Software (CCS) of Diagnoses

ICD 10 AM Diagnoses file, Edition 6, 8 & 10 are consolidated and assigned to CCS of Diagnosis and Groups of CCS of Diagnoses (updates contd;)

CCS Group#	CCS Group Name	Individual CCS's	Diagnoses
1	Infection	13	874
2	Cancer	37	1,016
3	Endocrine	15	850
4	Haematological	6	148
5	Mental Health	22	536
6	Neurological	20	1,027
7	Cardiovascular	31	526
8	Respiratory	13	354
9	Gastrointestinal	22	700
10	Renal/Urogenital	20	518
11	Pregnancy related	23	615
12	Dermatological	5	461
13	Musculoskeletal	12	3,377
14	Congenital anomaly	5	1,390
15	Newborn	6	448
16	Injury & Poisoning	21	6,024
17	Other	24	1,060
18	Unclassified	0	0
19	Immunological	2	56
	Total Count	297	19,980

Summary of Diagnosis Count	
Continued in Edition 10	19,427
New in Edition 10	384
Retired in Edition 10	169
Total	19,980

644 diagnoses were assigned to more appropriate CCS of diagnosis

Note: Diabetes is separated for Type 1, Type 2 and Other where each has a CCS for 'with complications' and another for 'without complications'

Covid-19

- The Independent Hospital Pricing Authority (IHPA) provide a detailed guideline for classifying Covid-19 senarios

- This virus is recorded in the additional (secondary) diagnosis

- *Note: HPO carry out regular updates throughout the year for coders and users of the HIPE system, these can be viewed on the HPO website - www.hpo.ie*

Information on the new administration variable in HIPE to flag where a patient has laboratory confirmed COVID-19 (tested positive) at any time, anywhere in the past or during the present admission.

Converting HIPE data into meaningful information (updates contd;

Procedures (the <u>principal</u> procedure performed is used)

Coded using the Australian Classification of Health Interventions (ACHI) coding system
 - 6,636 Procedure Codes

In NQAIS Clinical the groups are divided into:
- 19 Surgical Groups
- 18 Clinical (non-surg/Medical etc) Groups
- 2 Exception groups –
    (1) Low Volume (unmapped), &
    (2) No Procedures

ACHI Procedure file - 6ᵗʰ 8ᵗʰ and 10ᵗʰ Edition are consolidated and mapped to Procedure Groups (updates contd;)

Type	Procedure Grouping Name	In Group
Surgical	Breast Surgery	17
Surgical	Cardiothoracic	42
Surgical	Colorectal	59
Surgical	General Surgery	99
Surgical	Gynaecology	83
Surgical	Maxillofacial & Dental	38
Surgical	Neurosurgery	38
Surgical	Obstetric	26
Surgical	Ophthalmology	81
Surgical	Otolaryngology	89
Surgical	Paediadric Surgery	20
Surgical	Plastic Surgery	96
Surgical	Trauma orthopaedic lower limb	111
Surgical	Trauma orthopaedic other surgery	27
Surgical	Trauma orthopaedic spinal	21
Surgical	Trauma orthopaedic upper limb	74
Surgical	Upper gastrointestinal & hepatobiliary	24
Surgical	Urology	86
Surgical	Vascular	40

Type	Procedure Grouping Name	In Group
Clinical	Allied Health Interventions	18
Clinical	Anaesthetic & pain relief	60
Clinical	Assessments, tests and studies	15
Clinical	Cardiology	51
Clinical	Dermatology	31
Clinical	Medical Interventions	44
Clinical	Gastrology	14
Clinical	Haematology	26
Clinical	Imaging & testing	64
Clinical	Non-surgery	164
Clinical	Nephrology	17
Clinical	Nonsurgery obs & gynae	41
Clinical	Oncology	19
Clinical	Paediatric Medicine	25
Clinical	Radiological therapy	40
Clinical	Respiratory Medicine	18
Clinical	Endoscope	55
Clinical	Non-surgery T&O	18
	Low volume Proc < 20 per year	4,845
	No Principal Proc	0
	Mapped Procs # Sub Total	1,791
	Total Number of Procedures	6,636

ACHI Procedure file 6th, 8th and 10th Edition are consolidated and mapped to Procedure Groups (updates contd;)

Summary of Procedure Count	Proc group mapped	Low Volume Procs not mapped
Continue in Edition 10	1,680	4,365
New in Edition 10	37	142
Retired in Edition 10	74	338
Total	1,791	4,845

A total of 345 procedures were reassigned to more appropriate procedure groups

Some retired procedures are still assigned to groups for historical reporting

104 clinical Specialties in HIPE assigned to one of 11 Groups

Spclty Group Name	# Spclty
Acute medicine	23
Anaesthetics & pain mnmgt	4
Emergency medicine	1
Obstetrics & Gynaecology	3
Other medicine	11
Paediatric medicine	17
Pathology	11
Psychiatry	6
Radiology	3
Surgery	24
Not classified on DOH list	1
	104

Acute Medicine
- Cardiology
- Dermatology
- Endocrinology
- Diabetes mellitus
- Gastroenterology
- Genito urinary medicine
- Geriatric medicine
- Haematology
- Transfusion medicine
- Neurology
- Oncology
- Nephrology
- Respiratory medicine
- Rheumatology
- Infectious diseases
- Tropical
- Rehabilitation medicine
- Spinal paralysis
- General medicine
- Clinical (medical) genetics
- Palliative medicine
- Metabolic medicine
- Clinical Immunology

Anaesthetics & Pain Mnmgt
- Anaesthetics
- Intensive care
- Pain relief
- Paediatric anaesthetics

Other Medicine
- Substance abuse
- Audiological medicine
- Public health medicine
- Clinical neurophysiology
- Clinical pharmacology
- Clinical physiology
- G.P. medicine
- Mental handicap
- Nuclear medicine
- Occupational medicine
- Radiotherapy

Paediatric Medicine
- Paediatric neurology
- Paediatrics
- Paediatric cardiology
- Paediatric oncology
- Neonatology
- Paediatric endocrinology
- Paediatric gastro enterolog
- Paediatric haematology
- Paediatric A/E medicine
- Paediatric infectious diseas
- Paediatric metabolic medic
- Paediatric nephrology
- Paediatric respiratory medi
- Perinatal paediatrics
- Paediatric physical handica
- Paediatric dermatology
- Paediatrics development

Obs/Gynae
- Obstetrics/gynaecology
- Obstetrics
- Gynaecology

Pathology
- Pathology
- General pathology
- Chemical pathology
- Paediatric chemical patholo
- Histopathology
- Neuropathology
- Biochemistry
- Cytology
- Immunology
- Microbiology
- Virology

Psychiatry
- Psychogeriatric medicine
- Psychiatry
- Child/adolescent psychiatr
- Forensic psychiatry
- Old age psychiatry
- Rehabilitation psychiatry

Radiology
- Radiology
- Paediatric radiology
- Neuroradiology

Surgery
- Otolaryngology (ENT)
- Paediatric ENT
- Neurosurgery
- Paediatric neurosurgery
- Ophthalmology
- Neuro ophthalmic surgery
- Vitro retinal surgery
- Orthopaedics
- Paediatric orthopaedic surg
- Plastic surgery
- Maxillo-facial
- General surgery
- Gastro intestinal surgery
- Hepato biliary surgery
- Vascular surgery
- Breast surgery
- Dental surgery
- Oral surgery
- Orthodontics
- Paediatric surgery
- Cardio thoracic surgery
- Urology
- Renal Transplantation
- Paediatric Urology

NQAIS Clinical uses HIPE data supplied by the HPO

NQAIS Clinical Hospital List

Dublin Midlands HG

St. James's	St. James's Hospital
Tallaght - Adults	Tallaght University Hospital
Naas	Naas General Hospital
Portlaoise	Midland Regional Hospital Portlaoise
Tullamore	Midland Regional Hospital Tullamore
Coombe UH	Coombe Women and Infants University Hospital
SLRON Beaumont	St. Luke's Radiation Oncology Centre at Beaumont Ho
SLRON Rathgar	St. Luke's Radiation Oncology Network
SLRON St. James's	St. Luke's Radiation Oncology Centre at St. James's Ho

IEHG

Mater UH	Mater Misericordiae University Hospital
St. Vincent's UH	St. Vincent's University Hospital
Mullingar	Midland Regional Hospital Mullingar
Navan	Our Lady's Hospital Navan
St. Luke's Kilk'y	St. Luke's General Hospital Kilkenny
Wexford	Wexford General Hospital
Cappagh	National Orthopaedic Hospital Cappagh
Royal Vic E&E	Royal Victoria Eye and Ear Hospital
St. Columcille's	St. Columcille's Hospital
St. Michael's	St. Michael's Hospital
NMH Holles St	National Maternity Hospital

RCSI HG

Beaumont	Beaumont Hospital
Cavan	Cavan General Hospital
Connolly	Connolly Hospital Blanchardstown
OLOL Drogheda	Our Lady of Lourdes Hospital Drogheda
Louth	Louth County Hospital
Monaghan	Monaghan Hospital
St. Joseph's Raheny	St. Joseph's Hospital, Raheny
Rotunda	Rotunda Hospital

Saolta

Galway UH	Galway University Hospitals
Letterkenny UH	Letterkenny University Hospital
Mayo UH	Mayo University Hospital
Portiuncula UH	Portiuncula University Hospital
Sligo UH	Sligo University Hospital
Roscommon UH	Roscommon University Hospital

SSW HG

Cork UH	Cork University Hospital
UH Waterford	University Hospital Waterford
Mercy UH	Mercy University Hospital
Sth Tipperary	South Tipperary General Hospital
UH Kerry	University Hospital Kerry
Bantry	Bantry General Hospital
Kilcreene ROH	Kilcreene Regional Orthopaedic Hospital
Mallow	Mallow General Hospital
Sth Infirmary VUH	South Infirmary Victoria University Hospital

UL HG

UH Limerick	University Hospital Limerick
Croom	Croom Orthopaedic Hospital
Ennis	Ennis Hospital
Nenagh	Nenagh Hospital
St. John's	St. John's Hospital Limerick
Limerick UMH	University Maternity Hospital Limerick

CHI

CHI at Crumlin	CHI at Crumlin	
CHI at Tallaght	CHI at Tallaght	
CHI at Temple St.	CHI at Temple St.	
CHI at Connolly	CHI at Connoly	**<- Only in Transfer in/out records**

Issues to take note of in using the NQAIS Clinical application

- Plots report – double check to ensure that you have not overlapped your selection of admission streams – see slide 32 for further guidance.

- CrossTabs output: The label on the row that shows 'No proc' for discharge summaries displays 'No principal procedure' on the records.

- JPEG button is not operational if the button is grayed out. This is by design *(JPEG cannot be generated for Explorer pop-up, Records selection, CrossTab, …)*

- Large volumes of records will be slow to load – where there are too many records to load the timeframe may be need to be broken into shorter periods of time.

- Tipperary residence codes of Tipperary North riding (1700) and Tipperary South Riding (0800) have been re-instated in the HIPE system. All cases in 2019 and 2020 have been updated to reflect this. The combined Tipperary county code (1708) has been withdrawn.

- The Flow Report is only relevant for the AMP admission streams.

Admission Streams National Acute Medicine Programme

1. AMAU only: Admitted & discharged 'home' from AMAU

2. AMAU in-house: Admitted AMAU initially, then in-house

3. Emergency non-AMAU: Admitted direct to in-house ward

4. Elective stay

5. AMP all: aggregate summary of streams

The programme pre-setting of filter buttons does not does not select 0-15 years, elective day cases, maternity, neonates, specialist hospitals for Children's, Maternity & elective surgery

Admission Streams - National Clinical Programme in Surgery

1. **Emerg. Same Day:** Admitted and discharged on the same day, (value is % of total Emerg. discharges)

2. **Emerg. Stay:** Acute/Emergency admit, stay one or more nights

3. **Elective Day Case:** Admitted and discharged on the same day, (value is % of total Elective discharges)

4. **Elective Stay:** Elective/Planned admit, stay one or more nights

5. **Total:** Emergency & elective. Value in day *(Day Case / Same day =0.5 days)*

Admission Streams in the Display Button

- The user is responsible for selecting 1 to 5 adm streams

- Overlapping streams will display errors in the Summary, Explorer and Plots reports

AMP all = AAU only+AAU in-house+Emerg

non-AAU+Elective stay

=Emergency all+Elective stay

=Emerg same day+Emerg stay+Elective stay

=AAU all+Emerg non-AAU+Elective stay

- AAU all=AAU only+AAU in-house

Emerg All =AAU only+AAU in-house+Emerg non-AAU

=Emerg same day+Emerg stay

=AAU all+Emerg non-AAU

Correction of overlap of data for admission streams

The overlap of data for admission streams which had been occurring in NQAIS Clinical has been addressed. Where mutually exclusive streams are selected the display in Explorer view is as follows:
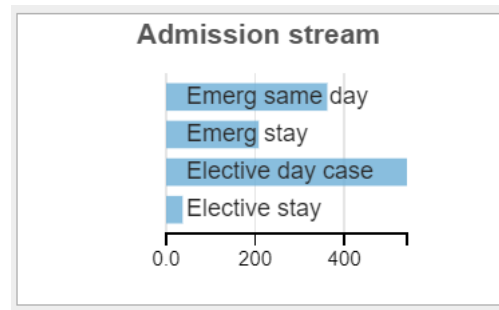
However, where an overlapping selection of admissions streams is attempted and the admission streams are not mutually exclusive the display in Explorer view will be as follows.

NQAIS Clinical – Access & Navigation

https:///www.healthatlasireland.ie
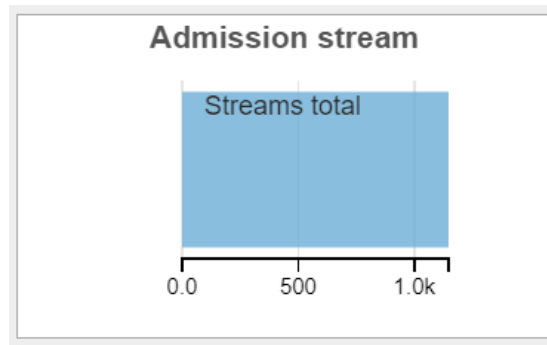
- Secure access required - authorised users can log on to NQAIS Clinical

- Requires user ID & Password

- Certificate required for off Hospital network usage

- Users email and mobile no. must be kept up to date for password retrieval and certificate issuance

- Start point, functionality available and access to data depends on user type

NQAIS Clinical Access & Navigation
url   https://www.healthatlasireland.ie/

Launch Page – National View (example)

National Quality Assurance & Improvement System

Welcome to NQAIS Clinical

National

Child HG	DubML	IEHG	RCSI HG	Saolta	SthSW	UL HG
Bantry	Coombe UH	Louth	Navan	Royal Vic E&E	St. Joseph's Raheny	UH Kerry
Beaumont	Cork UH	Mallow	Nenagh	Sligo UH	St. Luke's Kilk'y	UH Limerick
Cappagh	Croom	Mater UH	NMH Holles St	SLRON Beaumont	St. Michael's	UH Waterford
Cavan	Ennis	Mayo UH	OLOL Drogheda	SLRON Rathgar	St. Vincent's UH	Wexford
CHI at Crumlin	Galway UH	Mercy UH	Portiuncula UH	SLRON St. James's	Sth Infirmary VUH	
CHI at Tallaght	Kilcreene ROH	Monaghan	Portlaoise	St. Columcille's	Sth Tipperary	
CHI at Temple St.	Letterkenny UH	Mullingar	Roscommon UH	St. James's	Tallaght - Adults	
Connolly	Limerick UMH	Naas	Rotunda	St. John's	Tullamore	

Medicine	Surgery	ICP Maternity	ICP Children	ICP Older Persons	All discharges

Launch Page - Individual Hospital View (example)

- Select National, Hospital group or an Individual hospital (based on authorisation)
- Then select default programme setup to start NQAIS Clinical (medicine, surgery etc)
- *Note: the default programme sets the filters buttons for NQAIS Clinical at start-up.*
- *Users can change the filter button selections to any combination when using NQAIS Clinical*

Blue Bar in NQAIS Clinical
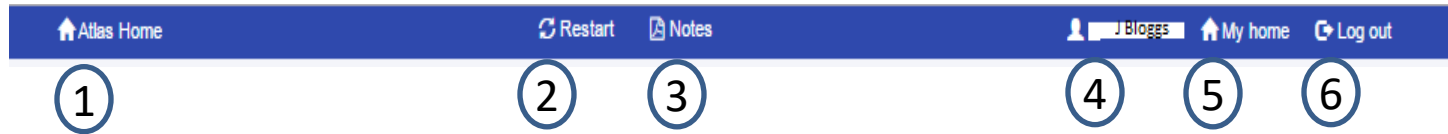
1. **Atlas Home button:** brings the user to their Health Atlas Ireland homepage
2. **Restart button:** You will be re-directed to the launch page to re start your selection(s)
3. **Notes button:** provides users with presentation and user manual (draft at present)
4. **J Bloggs/Name Button:** this identifies the users details, name, email address, job title, change password – these can be updated. *Note: In the event of passwords being forgotten - users passwords can be accessed by the Access Administrator only by using the email address provided when the user is set up on NQAIS.*
5. **NQAIS Clinical Home button:** brings the user to their area(s) of access
6. **Log out button:** allows users to log out from the Health Atlas Ireland portal

The reports are dynamically controlled

by the user using the filter buttons

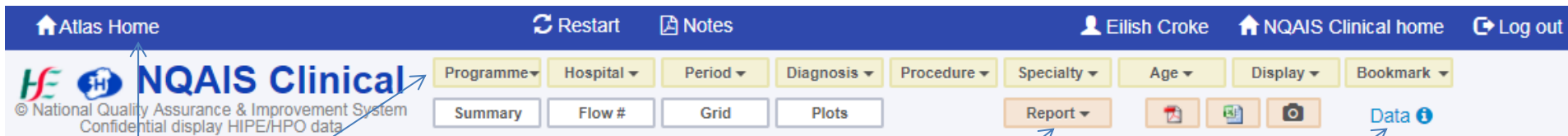The filter buttons determine which records will be used in the reports

The admission stream selection in the display filter will determine which subset of these records will be reported under each stream

NQAIS Clinical Navigation

NQAIS Clinical

© National Quality Assurance & Improvement System
Confidential display HIPE/HPO data

| Programme ▾ | Hospital ▾ | Period ▾ | Diagnosis ▾ | Procedure ▾ | Specialty ▾ | Age ▾ | Display ▾ | Bookmark ▾ |

| Summary | Flow # | Grid | Plots | | Report ▾ | 🅿 | 📊 | 📷 | Data ℹ |

- **Gold Filter Buttons**: Define what records will be used in the current reports: Hospital, Period, Diagnosis, Procedure, Specialty, Age & Display

  - **Configure Buttons**: Programme and Bookmark

- **Silver Report Buttons**: Summary, Flow #, Grid, Plots

- **Bronze Buttons**: Report, PDF, Excel & JPEG (Camera)

- **Data button** – current data in the system, data last uploaded

NQAIS Clinical Selection Box

NQAIS Clinical Selection Box identifies the selections the user has made for inclusion in the 'on screen' display or a report

Click on 'More' to allow expansion of selection(s)

HSE — NQAIS Clinical
© National Quality Assurance & Improvement System
Confidential display HIPE/HPO data

Programme▾ | Hospital ▾ | Period ▾ | Diagnosis ▾ | Procedure ▾ | Specialty ▾ | Age ▾ | Display ▾ | Bookmark ▾

Summary | Flow # | Grid | Plots | Report ▾ | Data ⓘ

Clinical programme: Maternity   Hospital: Anon   Period: 01/2017 - 03/2017   Diagnosis group CCS: All   Diagnosis CCS: All   Procedure group: A
Procedure: All   Team: All   Specialty group: Maternity, Paediatric Med More   Specialty: Gynaecology, Neonatology More   Age group: All
Admission: Mat same day, Mat stay, N More   Row choice: Diagnosis Group   Band: All   Minimum #: 5   Comparator: National

Action Buttons within each filter display

- **Reset:** Activates the original settings, please note **it always reverts to Medicine regardless of starting point**

- **Cancel:** Restores the previous selection, previous selections are not retained when other filter buttons are selected

- **Close:** Closes the window and holds the current selection until 'Select' is activated from another button. Close does not retain selection if you use other filter buttons.

- **Select:** Activates the current selection – including previously made under any other button

- **X top right corner:** Close the window

Programme Button
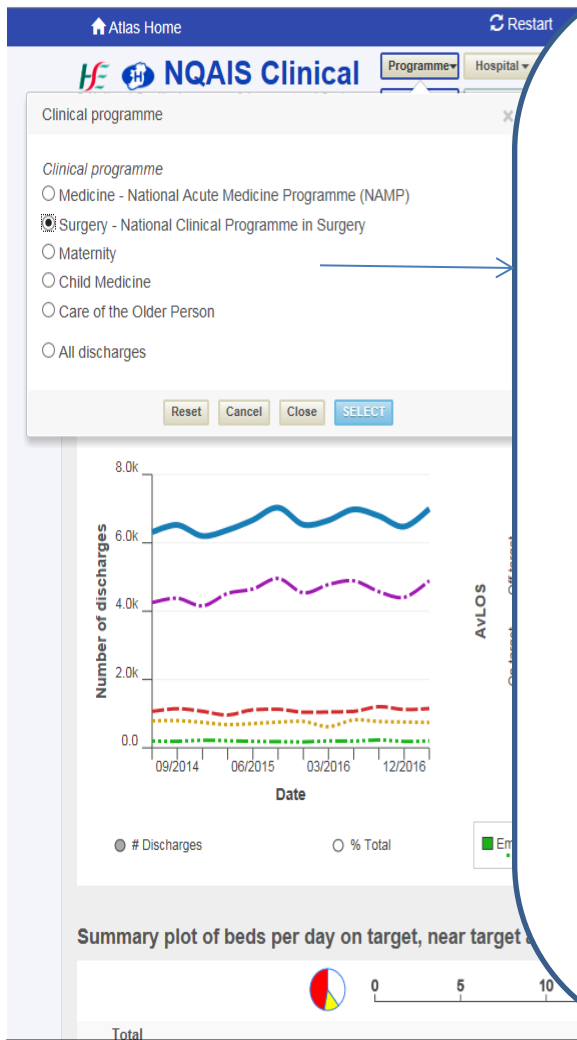
Selection is defined by the Clinical Programme selected - pre-sets the starting point for the filter buttons.
1. Filters buttons: Hospital, Diagnosis, Procedure, Specialty and Age.
2. Display button selection (Streams, Min/Max rows, Bands & Comparator)
3. Row choice
4. Records select – default fields

(the default period is 3 months)

Note: The filter buttons – Hospital, Period, Diagnosis, Procedure, Specialty & Age determines what records will be reported on. The adm. stream selection will determine which subset of these records will be reported under each stream

Gold Filter Buttons (1st row summary)

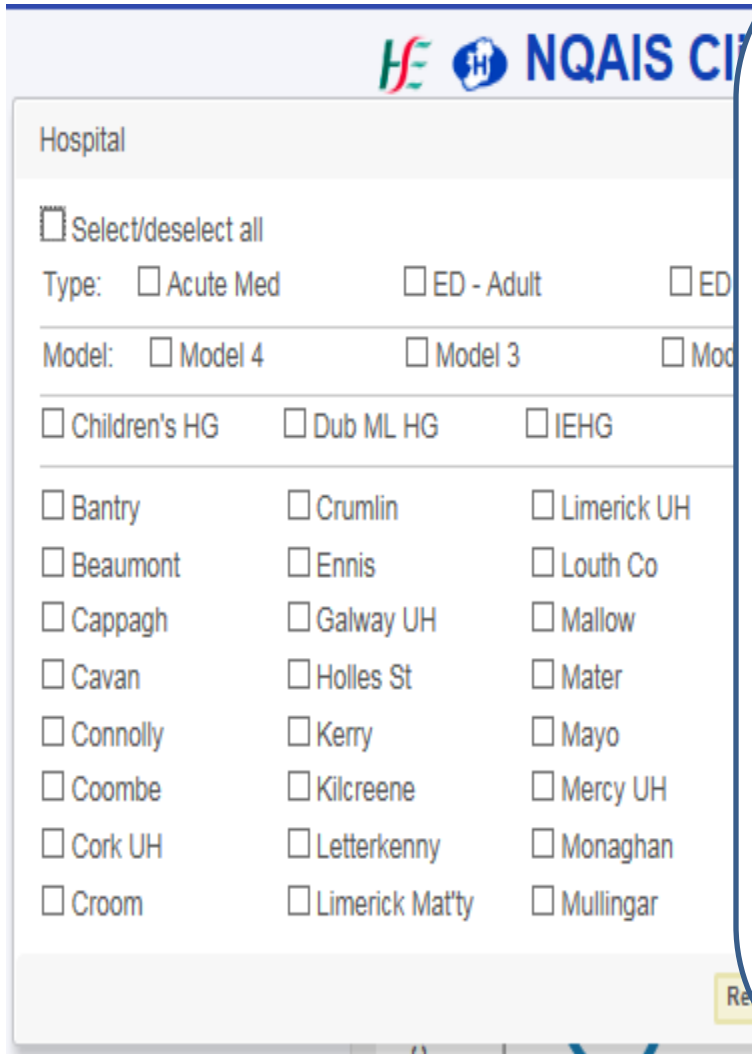| Select hospital(s) | Select time period only | Principal diagnosis in the selected CCS | Principal procedure for those selected | **Team –** Records for individual clinicians

Specialty Displays records for the selected HIPE coded Specialty | Select records in the age range of patients (on Admission) |

Hospital Filter Button

Options: Depend on access level

1. Select or de-select all.
Select Hospitals in: Acute Med, Surgery, Adult EDs, Child EDs, Mat, Trauma & Orthopaedic Hospitals

2. Select Model 4, 3 and/or 2 hospitals

3. Hospital Group(s)

4 . Individual hospital(s)

Individual Hospital view using the Hospital Button

Period Filter Button

Options:
3mths, 6mths, 9mths, 12 mths or custom period
Where previous 12 mths is selected and there is not a full 12 mths of previous data the report will not be correct

Select the time period for which you want to create reports

Note: default setting is 3 mths

Diagnosis Filter Button

Select/deselect all
- ➕ ☑ Cancer *
- ➕ ☑ Cardiovascular *
- ➕ ☑ Congenital anomaly *
- ➕ ☑ Dermatological *
- ➕ ☑ Endocrine *
- ➕ ☑ Gastrointestinal *
- ➕ ☑ Haematological *
- ➕ ☑ Immunological *
- ➕ ☑ Infection *
- ➕ ☑ Injury & poisoning *
- ➕ ☑ Mental health *
- ➕ ☑ Musculoskeletal *
- ➕ ☑ Neurological *
- ➕ ☑ Newborn *
- ➕ ☑ Pregnancy-related *
- ➕ ☑ Renal/urogenital *
- ➕ ☑ Respiratory *
- ➕ ☑ Other *
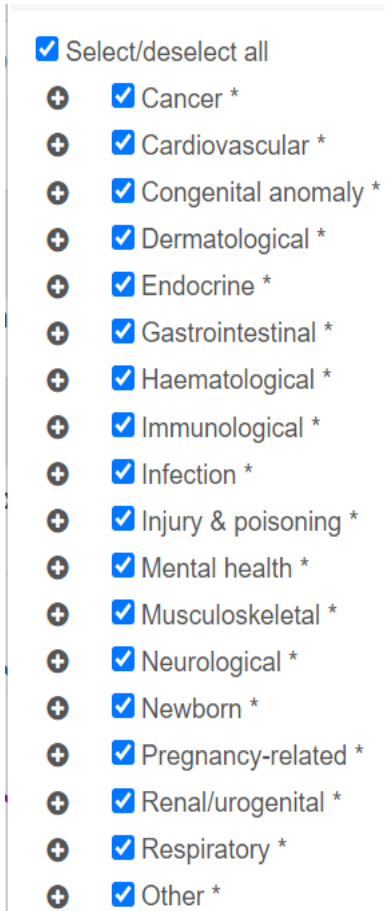
Select or de-select all CCS groups

Select CCS groups of interest

Can expand the + button and select or de-select CCS Diagnoses
When all diagnosis are selected, then the 'Select/deselect all' button will show a tick

Procedure Filter Button (update pic)

Procedure (principal/Proc 1) - RCSI/RCPI Classification

☑ Select/deselect all

⊕ ☑ Surgical procedure (20+/yr) *

⊕ ☑ Clinical (non-surgical) procedure (20+/yr) *

☑ Low volume procedure (<20/yr)

☑ No procedure

Reset

Select or de select all (select all is the default setting)

Expand or contract using + or - buttons –
Surgical procedure (20+/yr)

Clinical (20 + /yr)

Select/ de-select Low volume procedures (not mapped)
Select or de-select No procedure

Specialty Button

Specialty

Team code/s *eg ABCD, EFGH*

☑ Admitting ☑ Discharge ☑ Principal

Specialty *Analysis by specialty may take some time*

- ☐ Select/deselect all
- ➕ ☐ Acute medicine
- ➕ ☐ Anaesthetics & pain mnmgt
- ➕ ☐ Emergency medicine
- ➕ ☐ Not classified on DOH list
- ➕ ☐ Obstetrics & Gynaecology
- ➕ ☐ Other medicine
- ➕ ☐ Paediatric medicine
- ➕ ☐ Pathology
- ➕ ☐ Psychiatry
- ➕ ☐ Radiology
- ➕ ☑ Surgery *

Reset   Cancel   Close   Select

Supports analysis by individual team code or list of team codes for Admitting, Discharge and/or Principal Consultant

Can select or de-select all

Supports analysis of individual specialty or groupings of specialties

Supports analysis of:
Patients admitted under Medicine who have surgery
Patients admitted under Surgery who do not have surgery
Cross discipline conditions (e.g non specific abdominal pain)

Age Filter Button

Select or de-select 6 age ranges from the list

Display Button

Display

Terminology preference   ● Medical (AMAU)   ○ Surgical (ASAU)   ○ Generic (AAU)

Admission stream

☑ AAU only   ☑ AAU in-house   ☐ AAU all   ☑ Emerg non-AAU
☐ Emerg same day   ☐ Emerg stay   ☐ Emerg all
☐ Elective day case   ☑ Elective stay   ☐ Elec all
☐ Mat same day   ☐ Mat stay   ☐ Maternity all   ☐ NewBorn
☑ AMP all   ☐ Streams total   ☐ All discharges
Note: If selecting Streams total Column, then cannot select AAU only, AAU in-house, Emerg non-AAU or AAU all with Emerg Stay or Emerg same day.

Total row   ☑ Include total row

Row choice   ● Diagnosis Group   ○ Procedure Group   ○ Specialty Group

Band   ☑ On target   ☑ Near target   ☑ Off target

No. cases per row (ribbon)   Min 5   Max ∞

Comparator   ● National   ○ Model 2   ○ Model 3   ○ Model 4

Reset   Cancel   Close   Select

Select requirements for column display in Plots view (Max. of 5 out of 17 options (with caveats). If the total column is selected – cannot select AAUs

Select or de-select Total Row for Plots View

Select Diagnosis, Procedure or Specialty Group

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Display Button

Band displays can be limited to 'On target', 'Near target' and/or 'Off target'

Limit row displayed to rows with number of cases between min. & max. values

A comparator can be selected: National, Model 4 ,3 or 2 hospitals

Bookmark Button
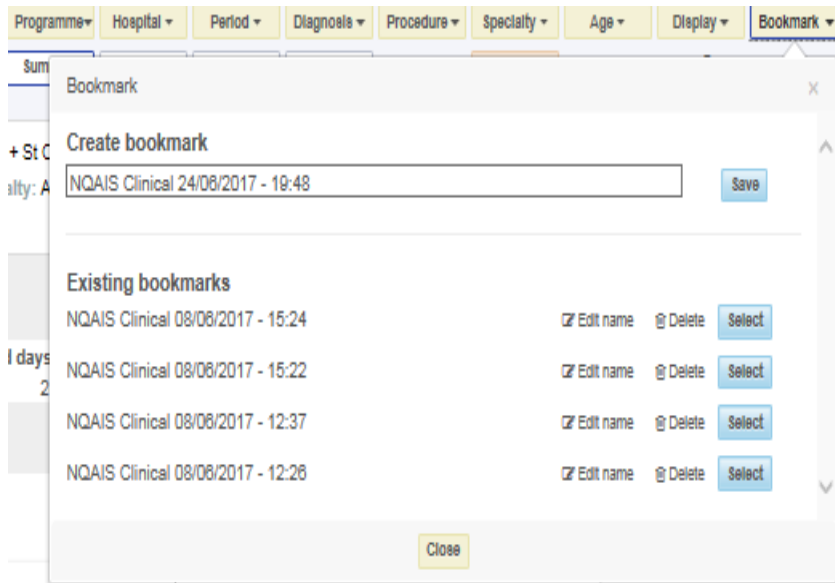
Pre-sets user defined selections

Saves: current filters, display and row choice, record select default fields

NQAIS Clinical, Date and Time is set as the default bookmark name

Note: User can edit file name, re-date and delete reports

The Silver Display Buttons (2ⁿᵈ row)

Programme▼	Hospital ▼	Period ▼	Diagnosis ▼	Procedure ▼	Specialty ▼	Age ▼	Display ▼	Bookmark ▼
Summary	Flow #	Grid	Plots		Report ▼			Data ⓘ

Summary Metrics – Activity, AvLOS, Trend graphs over 3 yrs Table of bed used 'on target', 'close to target' & 'off target' -pre & post trim

Metrics in numerical format by patient stream

Flow# Displays key metrics National, Group and Individual Hospital for comparative periods

Compares, Nat., Hsp Grp & Hsps for selected metrics - shows summary LOS, BDU, readmit metrics for each row displayed (CCS, Procedure for Specialty or Team)

Plots AvLOS, LOS, & re-admit pictograms and metrics for each row (5 streams) (CCS, Procedure, Specialty or Team)

NQAIS Clinical – Target setting approach

1. We compare Irish clinical teams with other clinical teams working in Irish HSE funded hospitals, identifying those who do similar health care activity and comparing top quartile team's AvLOS or day case rate performance to other teams performance.

2. Similar is defined by:

   i. The same principal surgical procedure has occurred during the episode of care, the patient was from the same age group and the admission and flow type were the same
      a) Procedure are designated as surgical or clinical by national clinical advisors who assess all procedure performed 20 or more times per annum nationally.
      b) Age groups are 0-4, 5-15, 16-64, 65-74, 75-84 and 85-plus.
      c) Admit and flow are: Emerg. same day; Emerg. Stay; Elect. day case; Elect. Stay; New Born; Mat. stay; Mat. same day;

   ii. The same CCS of diagnosis where no surgery is performed
      a) Diagnoses are mapped into CCS's by national clinical advisors in consultation with clinical advisors in the USA.
      b) Age group as above
      c) Admit and flow are: Elect. Stay; New Born; Mat. stay; Mat. same day; AAU only; AAU in-house and Emerg. Non-AAU
      d) *Note: Elect day case always splits by procedure (surgical or clinical)*

Target setting approach contd;

1. **Red line off target** is the AvLOS of the volume adjusted median consultant for a similar set of data records

2. **Yellow line near target value** is the AvLOS of the volume adjusted 25%ile consultants for a similar set of data records.

Long stay patients are included for target setting

(Note: if the number of procedures in any age band is less than 20 over the 2 years, or the number of consultants is less than 4, then the all ages together value is used for the target).

Long stay patients are trimmed from the AvLOS calculation, and uses only records below the trim point

Bed Days Used (BDU) uses all records

Target Setting example – nationally for one principal procedure

1. Sum acute inpatient principal procedures done by each consultant for a selected procedure

2. Sum bed days used and calculate the AvLOS for each consultant for the selected procedure. Sort consultants by their AvLOS values (shortest to the top)

3. Calculate the accumulative number of cases by consultant and associated accumulated % starting from the top *(shortest AvLOS consultant at top of list)*

4. Identify the AvLOS for the consultant at the 50%ile *(or higher)*. **'Off Target' value**

5. Identify the AvLOS for the Consultant at the 25%ile *(or higher)*. '**On Target**'

Repeat for each Procedure / CCS of Diagnosis Within each stream and each age band

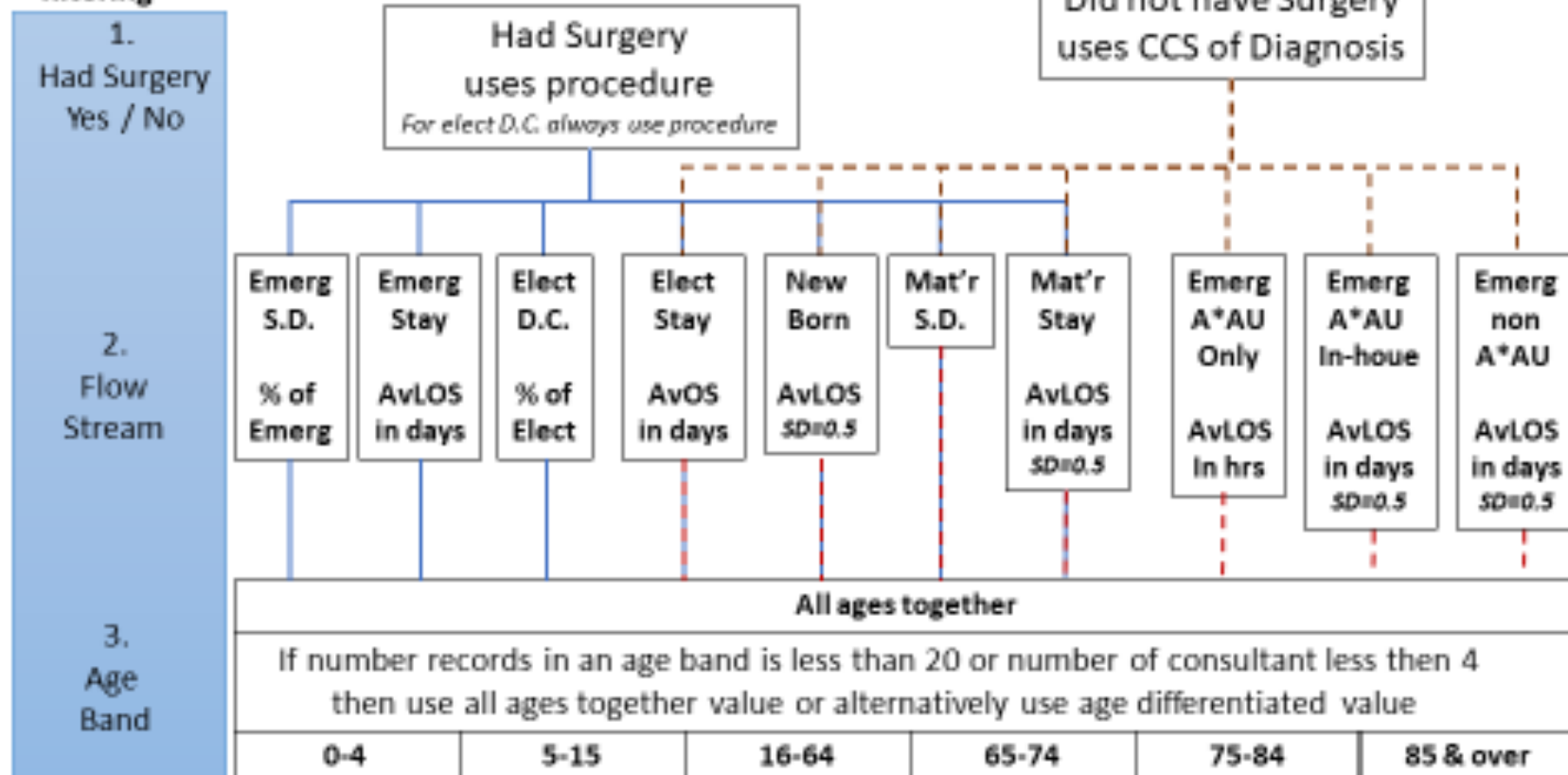| Consultant	# Inpat	BDU	AvLOS	Accum # Inpat	Acm%ile	
QFHM	1	2	2.00	1	0.9%	
OPJM	1	6	6.00	2	1.8%	
LMOS	1	9	9.00	3	2.6%	
LFLH	4	38	9.50	7	6.1%	
QFHI	1	11	11.00	8	7.0%	
MFKO	18	224	12.44	26	22.8%	
NKKR	1	14	14.00	27	23.7%	
LPPI	9	136	15.11	36	31.6%	**15.11** 5
MGFN	4	61	15.25	40	35.1%	
QINK	19	351	18.47	59	51.8%	**18.47** 4
NHPO	6	124	20.67	65	57.0%	
LENI	22	479	21.77	87	76.3%	
QIQP	14	324	23.14	101	88.6%	
NELI	5	120	24.00	106	93.0%	
ORPQ	8	198	24.75	114	100.0%	

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Average length of stay calculation

- The average length of stay (AvLOS) is calculated by dividing bed days used by the number of discharges

- In some reports such as Cross Tabs in the NQAIS Clinical application the figures may be rounded which brings to light the risk of different final figures being reported when these rounded values are used

NQAIS Clinical – Target setting approach - Record selection for target setting

Record filtering

1. Had Surgery Yes / No

Had Surgery uses procedure
For elect D.C. always use procedure

Did not have Surgery uses CCS of Diagnosis

2. Flow Stream

| Emerg S.D. % of Emerg | Emerg Stay AvLOS in days | Elect D.C. % of Elect | Elect Stay AvOS in days | New Born AvLOS SD=0.5 | Mat'r S.D. | Mat'r Stay AvLOS in days SD=0.5 | Emerg A*AU Only AvLOS In hrs | Emerg A*AU In-houe AvLOS in days SD=0.5 | Emerg non A*AU AvLOS in days SD=0.5 |

3. Age Band

All ages together

If number records in an age band is less than 20 or number of consultant less then 4 then use all ages together value or alternatively use age differentiated value

| 0-4 | 5-15 | 16-64 | 65-74 | 75-84 | 85 & over |

4. Set Targets

Individual consultant discharge activity is AvLOS-ed (*including trim*), the consultants are sorted by AvLOS, the AvLOS of the consultant at volume adjusted median is adopted as the **red line off target value**
The **yellow line near target value** is the AvLOS of the volume adjusted 25%ile consultants for a similar set of data records.
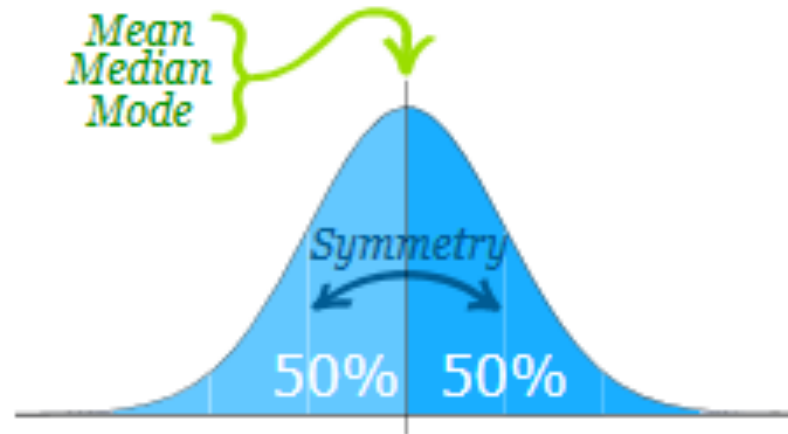
Note: the exception that Elective day case is set by procedure for surgical and clinical procedures

5. **Set Trim point:** sort record by LOS. Trim point = LOS at 75%ile + 3 * (LOS at 75%ile – LOS at 25%ile)

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Normal distribution of data

We say the data is "normally distributed":

Mean
Median
Mode

Symmetry

50% 50%

The **Normal Distribution** has:

- mean = median = mode

- symmetry about the centre

- 50% of values less than the mean and 50% greater than the mean

Standard Deviations

- The Standard Deviation is a measure of how spread out numbers are.
- When we calculate the standard deviation we find that generally:
- With normal distribution 68% of values are within 1 standard deviation, 95% of values are within 2 standard deviations and 99.7% of values are within 3 standard deviations
- Many things closely follow a Normal Distribution: height of people, blood pressure measurements, marks in an exam - **but not AvLOS**.

Data distribution for AvLOS is skewed to the left (Sample)

No. cases

Top 25th teams

National

Individual hospital AvLOS

LOS
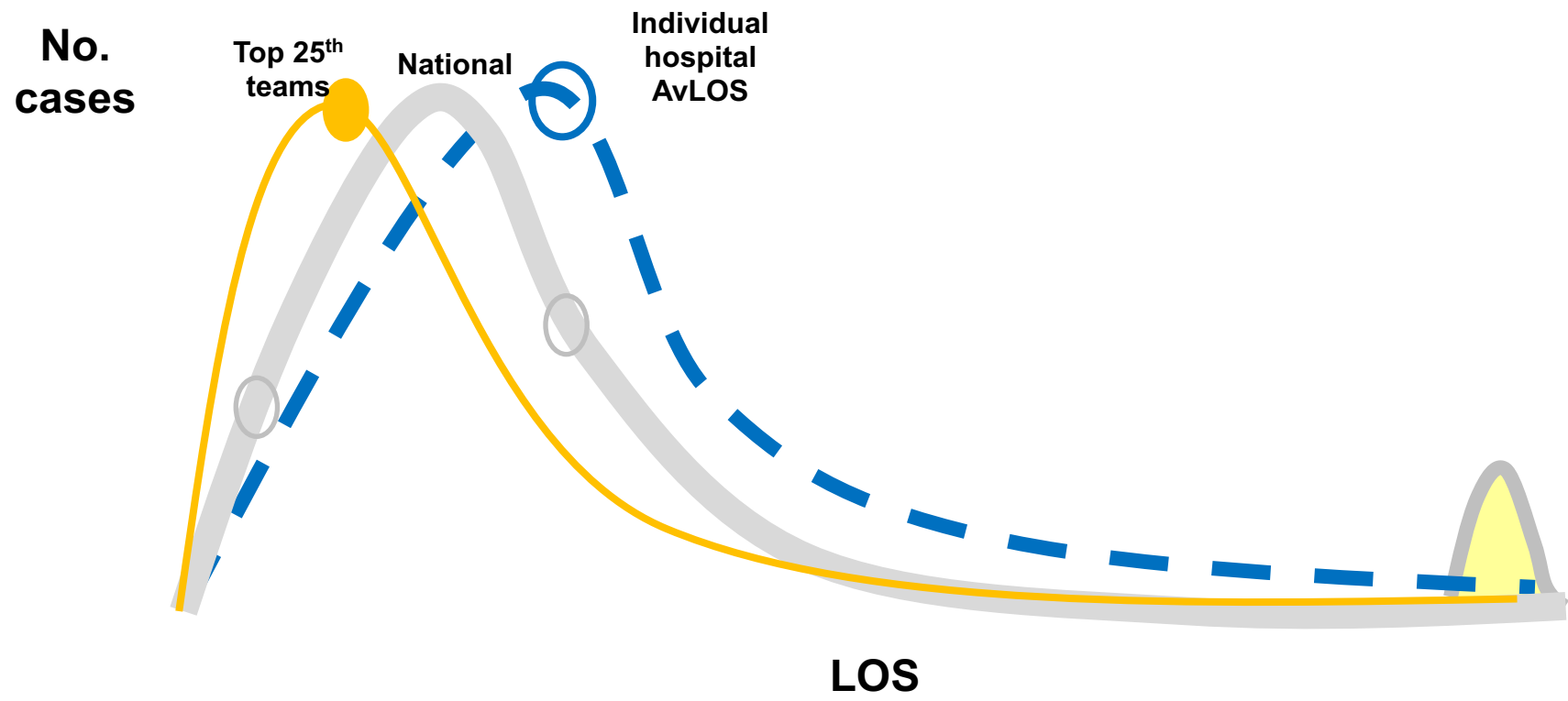
Calculating the Trim Point

1. Select records and sort by Length of Stay

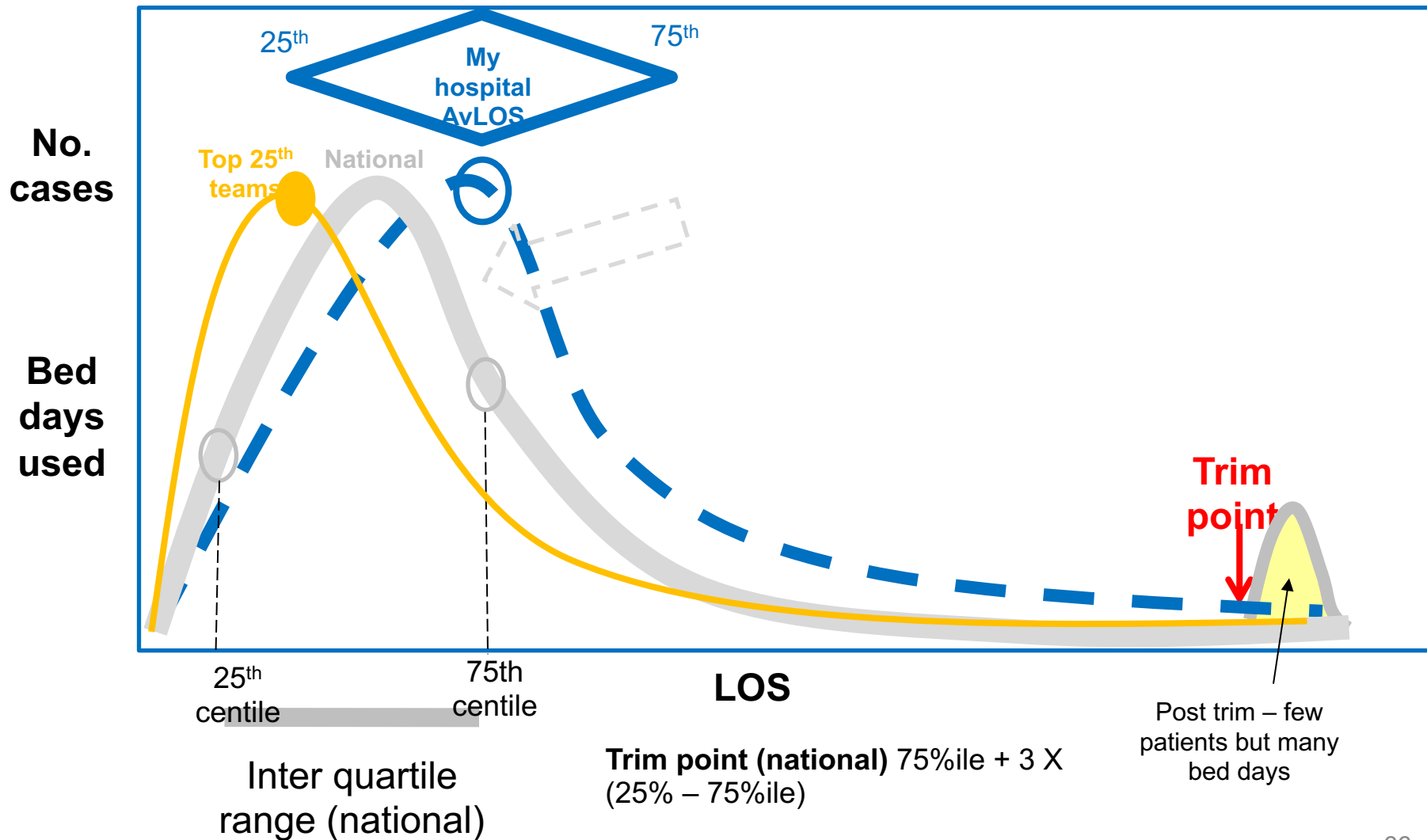2. Assign an accumulative percentage to each record starting at the top

3. Identify the 25th and 75th percentile values

4. Calculate trimming point value (long stayers)
   = 75%ile plus 3 times the interquartile range (75%ile minus the 25%ile)
   *From the example it is 11 + 3 * (11 – 2) = 38*

5. Identify records to be trimmed (LOS > 38)

6. Calculate the AvLOS of the untrimmed cases (excluding the long stayers) = 5.85

7. Compare AvLOS to Target AvLOS and set colour *(e.g. Red for Off Target)*

8. Draw the diamond

Trim	LOS	RecCount	Accume%	
	1	1	3.1%	
	1	2	6.3%	
	1	3	9.4%	
	1	4	12.5%	
	1	5	15.6%	
	2	6	18.8%	
	2	7	21.9%	
	2	8	25.0%	< 25th Percentile
	2	9	28.1%	
	3	10	31.3%	
	4	11	34.4%	
	4	12	37.5%	
	4	13	40.6%	
	4	14	43.8%	
	5	15	46.9%	
	5	16	50.0%	
	5	17	53.1%	
	5	18	56.3%	
	7	19	59.4%	
	7	20	62.5%	
	8	21	65.6%	
	9	22	68.8%	
	10	23	71.9%	
	11	24	75.0%	< 75th Percentile
	14	25	78.1%	
	15	26	81.3%	
	25	27	84.4%	
Trim	45	28	87.5%	
Trim	52	29	90.6%	
Trim	52	30	93.8%	
Trim	53	31	96.9%	
Trim	211	32	100.0%	

AvLOS & Trim point

No. cases

Bed days used

25th   **My hospital AvLOS**   75th

Top 25th teams   **National**

Trim point

25th centile   75th centile

Inter quartile range (national)

LOS

Trim point (national) 75%ile + 3 X (25% – 75%ile)

Post trim – few patients but many bed days
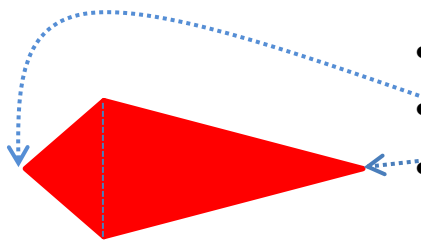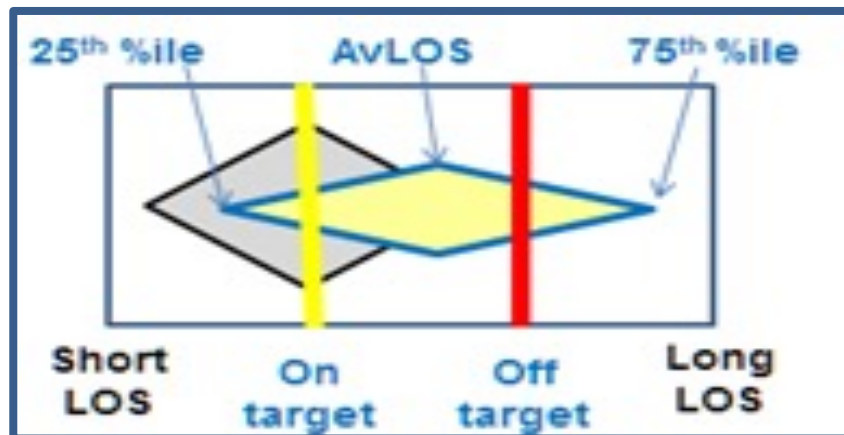
Drawing the diamond

- Left tip 25%ile LOS of All cases = 2
- Right tip 75%ile LOS of All cases = 11
- Line between top & bottom points is the AvLOS of untrimmed cases (excluding long stayers) = 5.85

25th %ile   AvLOS   75th %ile

Short LOS   On target   Off target   Long LOS

Reading the NQAIS Plots view contd;
# AvLOS diamond

Selected hospital(s) diamond to front with blue outline

National or hospital model diamond (depending on the users selection) in grey behind

- White diamond: AvLOS 'on target' or less than target
- Yellow diamond: AvLOS 'near to' target
- Red diamond: AvLOS 'off' target

Space is 1/3rd for on target; 1/3rd for near target & 1/3rd for off target

AvLOS is the average length of stay for all untrimmed cases.
For shape integrity, long stay patients are trimmed from the creation of the AvLOS diamond shape if their LOS is greater than a derived value . The derived value is 75%ile plus 3 times the 75%ile minus the 25%ile
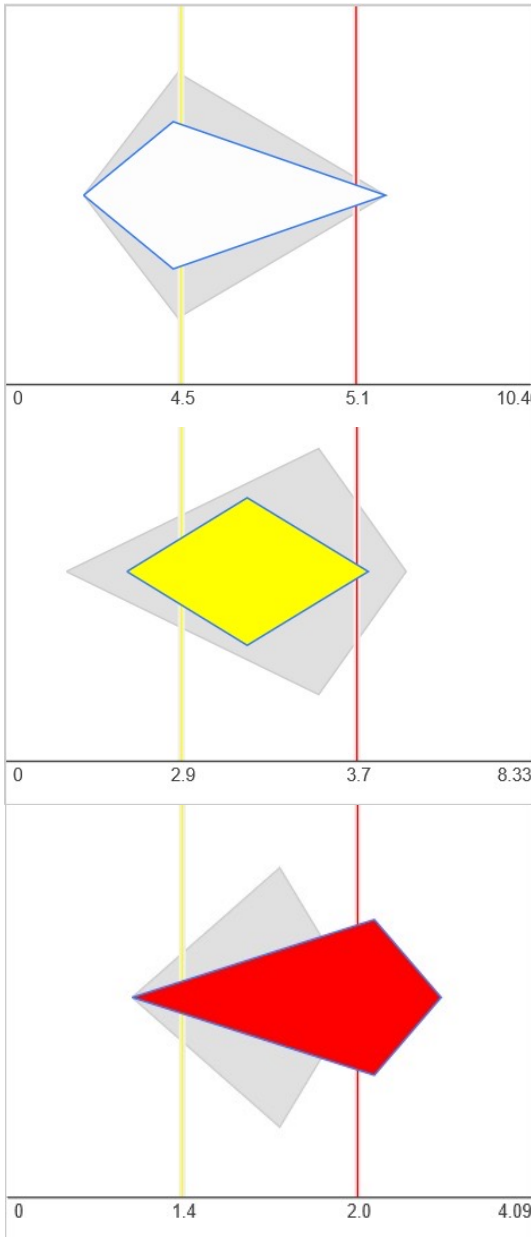
Terminology re: 'trim' in the system

- **Incl. trim:** includes all patients long stay and 'short' stay patients' records

- **Excl. trim**: excludes long stay patients records

- **Pre trim**: includes 'short' stay patients and excludes long stay patients' records

- Post **trim**: only includes long stay patient records

- AvLOS Total in Crosstabs: includes all patients long stay and short stay

- BDU **less than trim**: excludes long stay

- BDU **greater than trim**: includes the long stay patient only

- Greater than (>) and Less than (<) trim includes all patients ('short' stay and long stay)

Plots View by Procedure Group
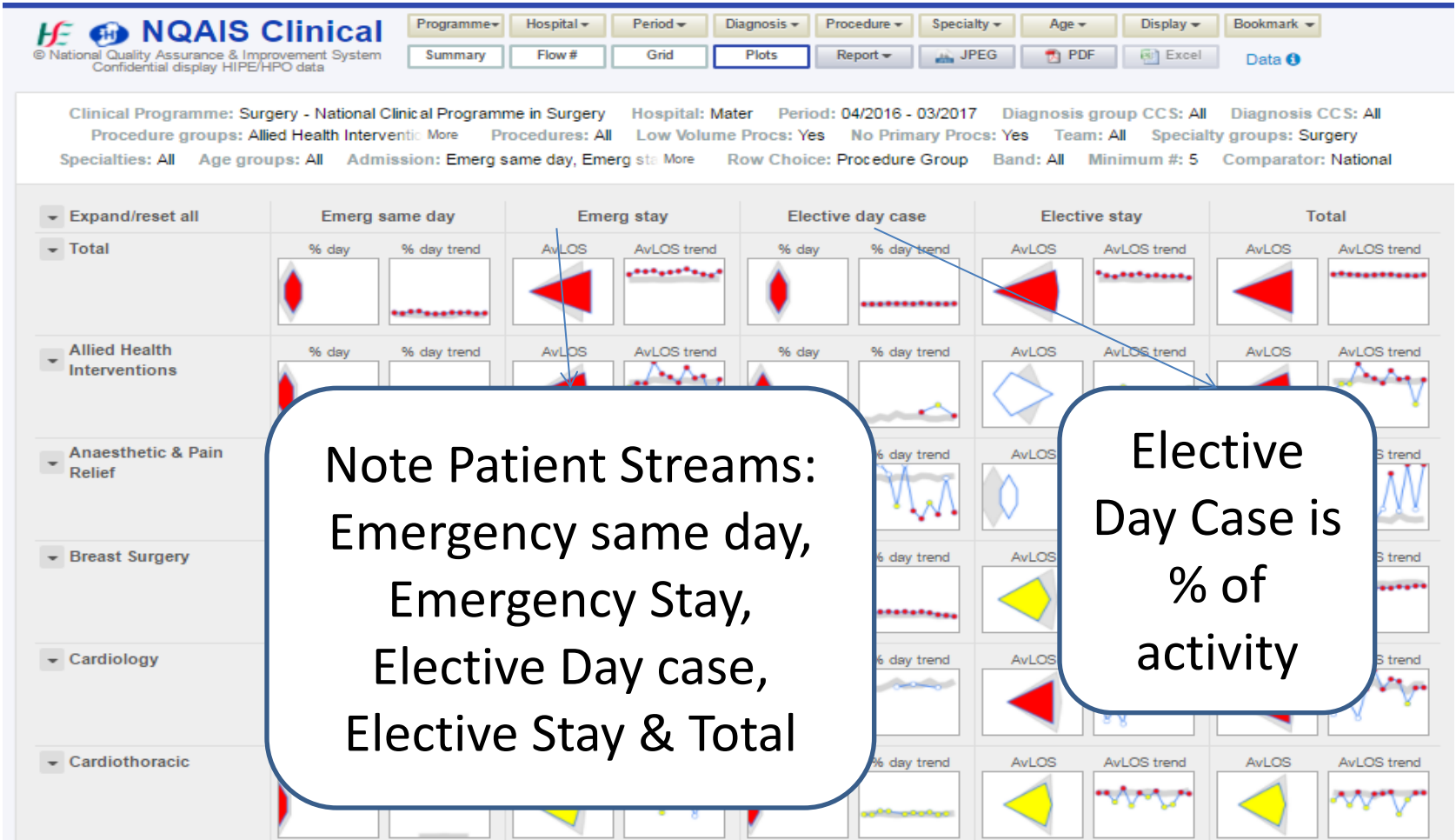
Plots expansion

Enlarge, Explorer, Trends, Records & Crosstab functionalities will be covered in future slides

LOS Plot, Time Curve and Key Values can be displayed on screen

One of the options can be selected to expand the report - 3 levels, 1st level can be selected using the display button, 2nd level when CCS group or procedure group is selected.
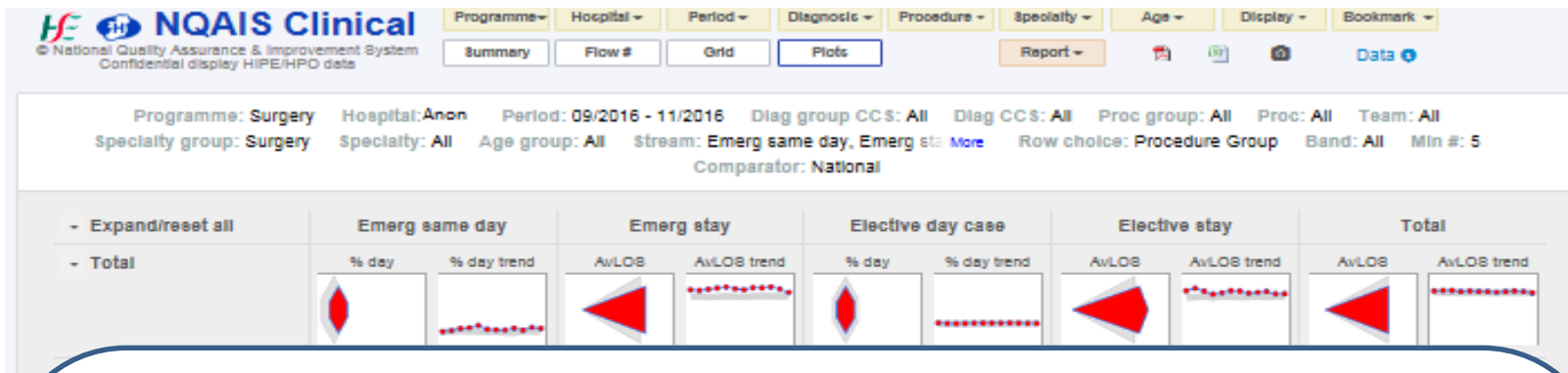
Plots View by Procedure Group
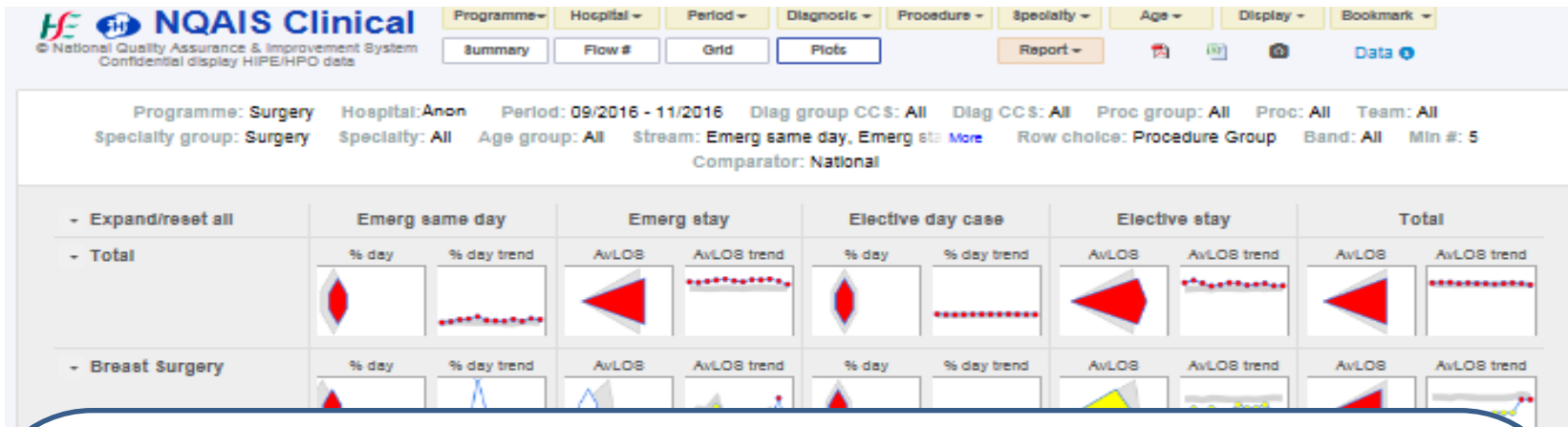
1st Level : Procedure View – Procedure Group as first level

Can select or de-select:

- Surgical procedures (20 or more p.a.)
- Clinical procedures
- Low volume procedures
- No procedures
- 2nd Level: View as CCS, Procedure or Specialty, Admit, Discharge or Specialty Consultant

Plots View by Procedure Group contd;

3rd Level if 2nd level options are selected: CCS are Procedures, Specialty, Admit, Discharge or Principal Consultant

Procedures are CCS, Specialty, Admit, Discharge or Principal Consultant

Specialty are CCS, Procedure, Admit, Discharge or Principal Consultant

Admit Consultant are CCS, Procedure or Specialty

Discharge Consultant are CCS, Procedure for Specialty

Plots View by CCS Group of principal diagnosis

CCS group as first level (i.e. cancer, cardiovascular,) Targets used are CCS targets

2nd level expand options CCS, procedure group, Specialty, Admit Consultant , Discharge Consultant …

3rd level if 2nd = CCS are Procedure group, Specialty, Admit Consultant, Discharge Consultant. …

3rd level if 2nd = Procedures are CCS, Specialty, Admit Consultant , Discharge Consultant…

3rd level if 2nd = Specialty are CCS, Procedure group, Admit Consultant, Discharge Consultant…

3rd level if 2nd = Admit consultant are CCS, Procedure group, Specialty…

3rd level if 2nd = Discharge consultant CCS, Procedure group, Specialty…

Plots view by Specialty Group

Specialty group as first level (i.e. Adult Medicine, Anaesthetics and Pain Mgt) Use Specialty Target
2nd level expand options CCS, Procedure, Specialty, Admit Consultant , Discharge Consultant, …
3rd level if 2nd = CCS are Procedure, Specialty, Admit Consultant or Discharge Consultant, …
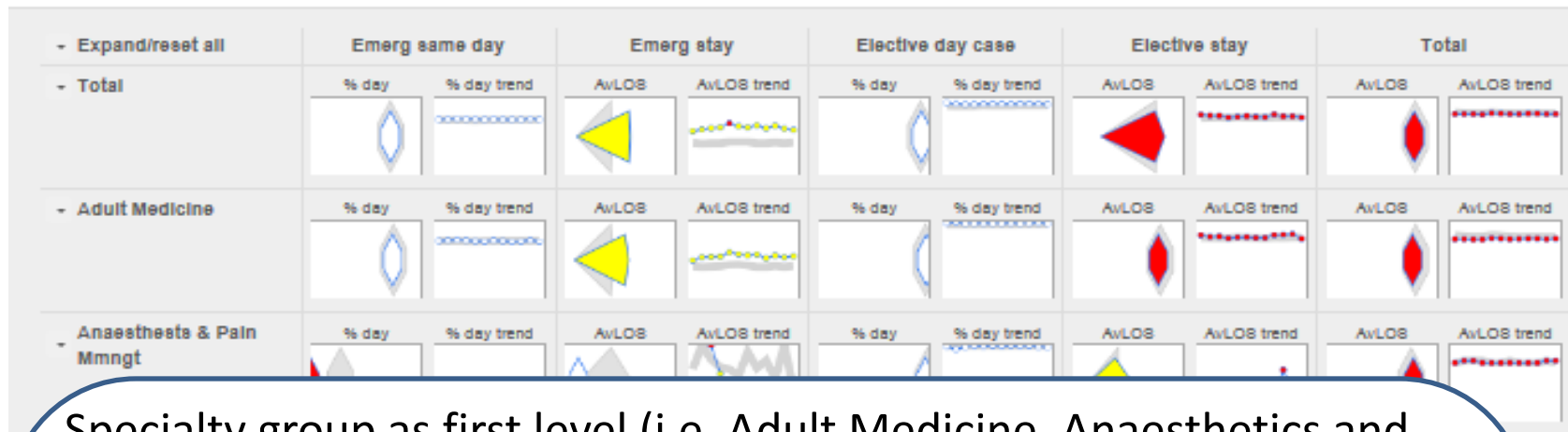3rd level if 2nd = Procedures are CCS, Specialty, Admit Consultant or Discharge Consultant, …
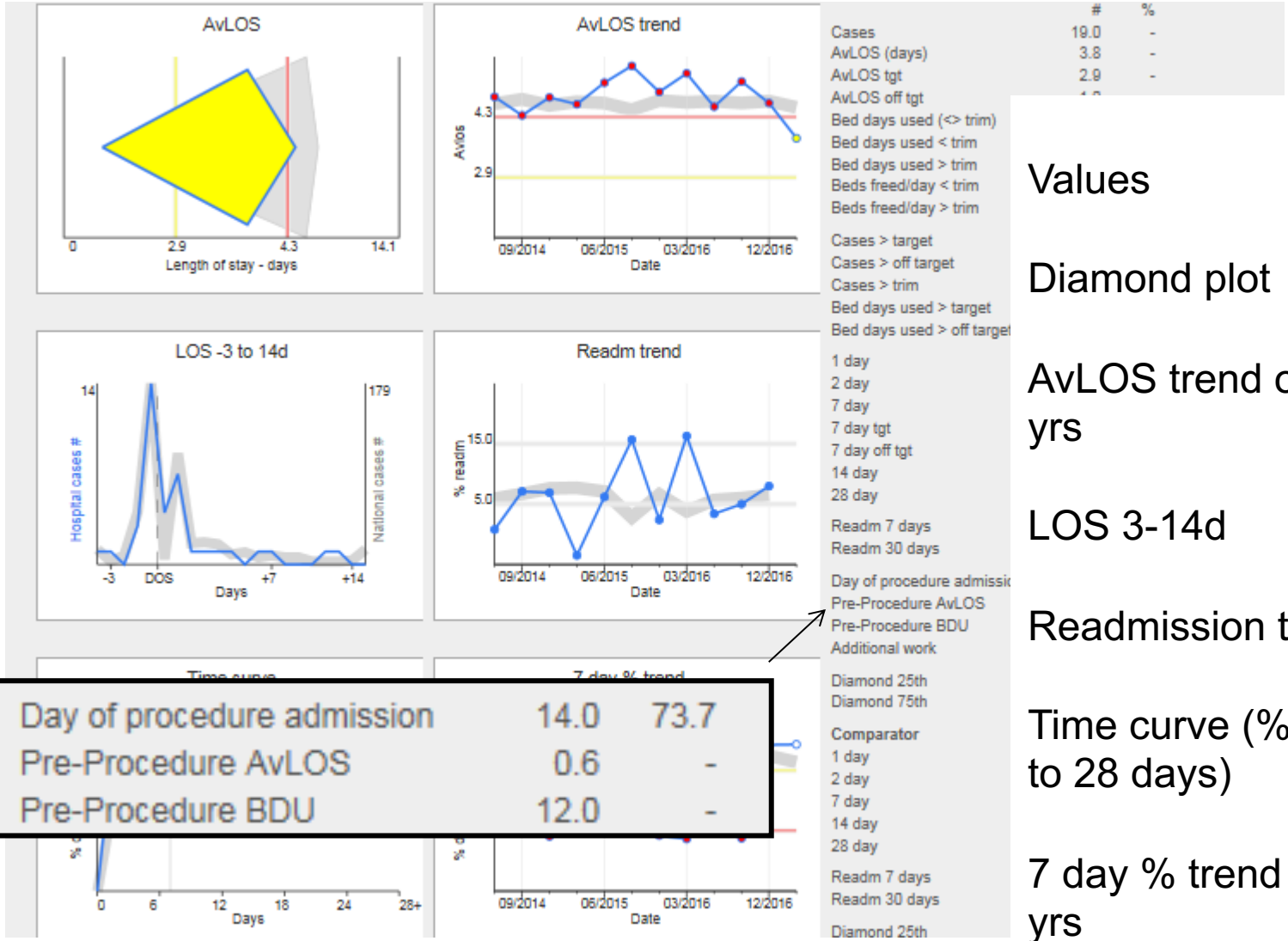3rd level if 2nd = Specialty are CCS, Procedure, Admit Consultant or Discharge Consultant., …
3rd level if 2nd = Admit consultant are CCS, Procedure or Specialty. …
3rd level if 2nd = Discharge consultant CCS, Procedure or Specialty. …

Plots - enlarge procedure view – elective stay (example)

Values
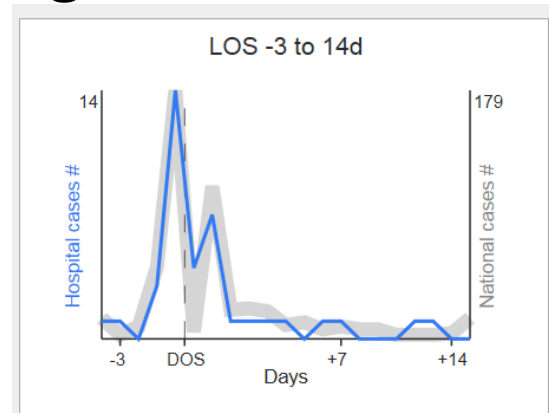
Diamond plot

AvLOS trend over 3 yrs

LOS 3-14d

Readmission trend

Time curve (% d/c up to 28 days)

7 day % trend over 3 yrs

Plots – Procedure view enlarged – elective stay trend pictogram

DOS/Procedure identified on graph, left of the DOS displays the number of patients who were 3,2,1,0 days in hospital before a principal procedure/surgery was performed
To the right of the DOS displays the number of patients who were in hospital1 ,2,3…14 days post procedure/operation.
Blue line indicated the number of patients for the selected hospital(s) by the number of days
Grey thick line displays the number of patients nationally by the number of days

Plots expansion – Explorer view (dynamic) – 10 parameters

Note: If you have selected overlapping streams where the same record is counted in more than one stream then the Admission type selection will not display correctly

Plots expansion – Explorer view contd;

10 parameters

Areas in blue can be selected in any of the boxes, click to select or de-select or press re-set

LOS, Age, Gender, Adm type, d/c alive or dead, Charlson Index

Admission day, d/c day, Admission time and Discharge time

Allows users to select parameters of interest - all other sections update dynamically change in response to the selection

Flow # Report View (sample section of report below)
This report is only relevant for the AMP admission streams.

	National	RCSI HG	Selection
Total cases #	98693	14963	14049
Bed days used #	231805.5	35844.5	35219
LOS =0 (same day) discharges #	69027	10379	9628
LOS =0 (same day) discharges %	69.9	69.4	68.5
LOS 1-2 days discharges #	12720	1859	1707
LOS 1-2 days discharges %	12.9	12.4	12.2
LOS 1-2 days BDU #	17627	2587	2396
LOS 1-2 days BDU %	8.9	8.4	7.9
LOS 3-14 days discharges #	14048	2283	2273
LOS 3-14 days discharges %	14.2	15.3	16.2
LOS 3-14 days BDU #	85175	14103	14068
LOS 3-14 days BDU %	43.2	46.0	46.3
LOS >2 days discharges #	16946	2725	2714
LOS >2 days discharges %	17.2	18.2	19.3

National, Group and Individual Hospital picture.

Metrics for last year, last year to date, this year to date, snapshot period and target in numerical format LOS, re-admission rates & AAU metrics

This is a combination of Table 1 and Table 2 previously in NQAIS Medicine.

Acute Surgical Assessment Unit (ASAU)

- There is no ASAU data in the system at present

- This issue will be addressed in future updates

Maternity and New Born View
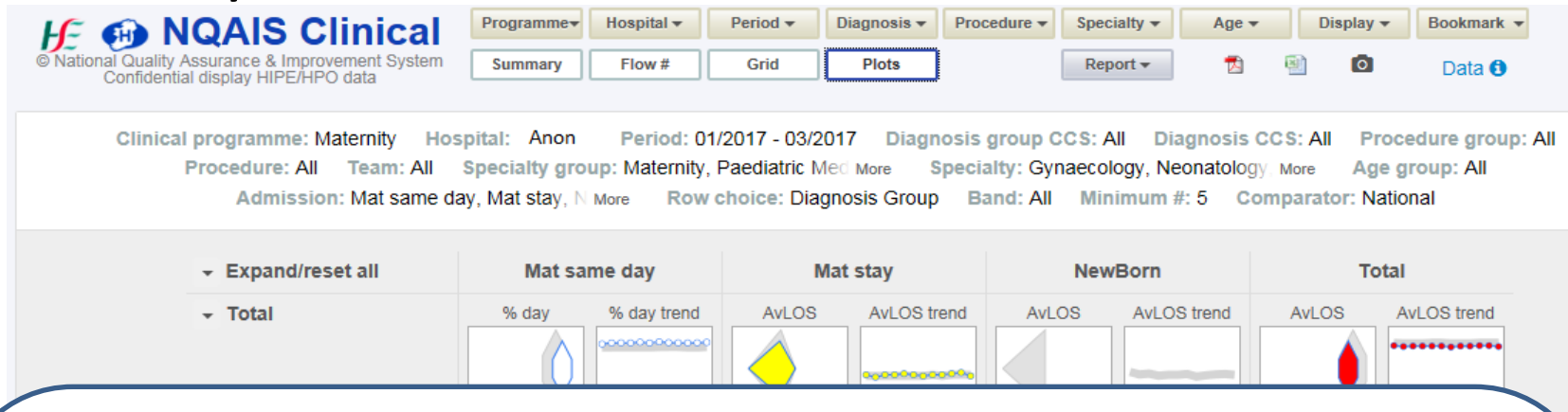
Maternity specialist hospitals and co-located maternity units in acute hospitals nationally (Model 4s and 3s)

Expansion button '+' or '-'

Expand rows

Drill down – 2 levels depending on Row Choice

Enlarge – zoom in and show additional metrics

Explorer View

Trend Chart

Plots Expansion Trends View
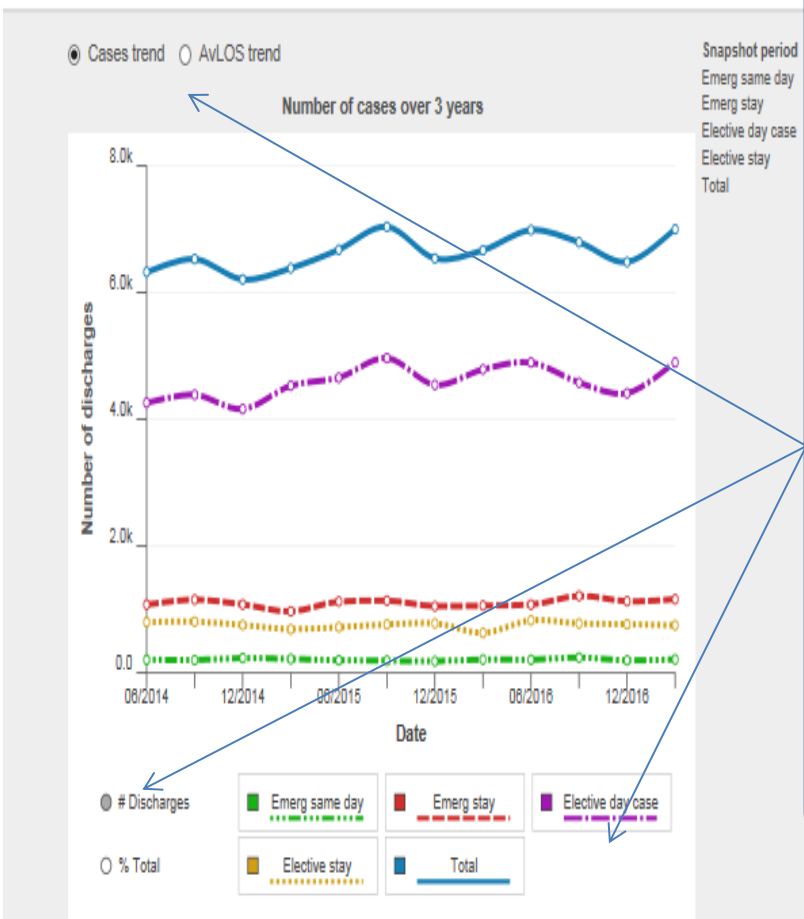
Provides no. of discharges trends over 3 years in 3 months intervals.

Streams are identified using colours (each can be selected or de-selected)

Multiple selections can be layered over each other – select options to change report

Hovering over trend lines displays numbers or % of the total

Plots Expansion – Records View

Create bookmark

NQAIS Clinical 11/01/2023 - 15:39 Records   [Save]

Existing bookmarks

No selections saved

[Close]

☐ *Select/deselect all*   *Dx1 = Principa*

Admission/discharge	*Specialty/team*	*Clinical data*	
☐ E-MRN	☐ Proc 1 surg (Y/N)	☑ Age by 1 year	☐ Medical c
☐ Hospital name	☐ Specialty (pr) group	☐ Age by 5 year	☐ ASA scor
☐ Admission source	☐ Specialty (dis) group	☑ Gender	☐ Charlson
☑ Admission type	☐ Specialty principal	☐ Dx1 group (CCS-IM)	☐ Charlson
☐ Discharge destination	☐ Specialty discharge	☐ Dx 1 name (CCS-IM)	☐ Discharge
☐ Discharge mode	☐ Team code admission	☑ Dx 1 ICD name	☐ Emerg ad
☐ Public/private	☐ Team code discharge	☐ Dx 2-30 ICD name	☐ Palliat ca
☐ Residence all	☐ Team code principal	☑ Proc 1 ACHI name	☐ Pal Care/
☐ Residence county	☐ Team code Dx1	☐ Proc 2-20 ACHI name	☑ LOS total
☐ Residence Dub postal	☐ Team code Dx 2-30	☐ Proc 1 group (RCs)	☐ LOS pre-
☐ Transfer from	☐ Team code Proc 1	☐ Dx 1 ICD code	☐ LOS post
☐ Transfer to	☐ Team code Proc 2-20	☐ Dx 2-30 ICD code	☐ LOS trim
☐ Admission date	☐ Ward admit	☐ Proc 1 ACHI code	☐ LOS trim
☐ Admission day	☐ Ward discharge	☐ Proc 2-20 ACHI code	☐ ICU / CC
☐ Admission month		☐ Proc 1 date	☐ Same da
☐ Admission year		☐ Proc 2-20 dates	☐ Readm <
☐ Admission week		☐ DRG name	☐ Readm <
☐ Admission time		☐ DRG code	☐ Readm in
☐ Discharge date		☐ Hospital acq code	☐ AAU indic
☐ Discharge day		☐ Hospital acq name	☐ Mode of
☐ Discharge month		☐ Med fit for D/C date	☐ COVID-1
☐ Discharge year		☐ TF date to pre D/C RU	☐ Ukr tmp pr
☐ Discharge time			

[Reset] [Excel] [On screen]

Make selection of records by ticking on the boxes required

Can display on screen to review or export to Excel spread sheet

May select all parameters and create a bookmark for selections

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Plots Expansion – Crosstab View

Facilitates quick queries in NQAIS Clinical. Drag and drop queries into yellow boxes on the right.

Can display results on screen or transfer to excel spread sheet

Note: AvLOS total here includes all records

Grid Report View

Scroll up and down, holds the column banner, on a left to right scroll

Rows choice, Diagnosis, Procedure or Specialty in Display button - 5 columns linked to selection in display button

Metrics: LOS, BDU, % of records for 1,2,7,14,28 Readmit in 7 days and 30 days

	National			Cases #	AvLOS (days)	AvLOS tgt	AvLOS off target	Difference from target	Bed days used #	1 day %	2 day %
Total				2980	3.6	2.2	3.4	1.4	12692.5	59.8	66
Cancer				46	9.4	4.9	9.1	4.5	431	19.6	26.1
Cardiovascular				785	2.6	1.6	2.4	0.9	2519	67.9	73.4
Congenital anomaly			-								
Dermatological				40	1.9	1.2	1.9	0.7	121.5	75	77.5
Endocrine				84	3	1.8	2.9	1.2	252.5	59.5	72.6
Gastrointestinal				132	3.9	2.2	3.4	1.7	591	52.3	62.9
Haematological				35	3.2	1.9	3.1	1.3	113	62.9	65.7
Immunological				7	1	0.2	0.3	0.8	7	85.7	85.7
Infection				57	4.1	2.6	4	1.5	235.5	56.1	61.4
Injury & poisoning				150	6.2	1.9	3.8	4.3	1047	44	53.3
Mental health				81	2.9	2.1	3.8	0.8	295	69.1	75.3
Musculoskeletal				167	3	1.2	2.2	1.8	528	73.7	78.4
Neurological				298	1.7	1.2	1.8	0.5	738	78.5	83.9
Renal/urogenital				154	6.3	4.9	6.9	1.5	1133	29.9	37.7

Radio buttons: AMAU only, AMAU in-house, Emerg non-AMAU, Elective stay, AMP all (selected)

Value ▾ No value

⊕ Expand all

Grid Report View contd;

	National	Cases #	AvLOS (days)	AvLOS tgt	AvLOS off target	Difference from target	Bed days used #	1 day %	2 day %
○ AMAU only									
○ AMAU in-house									
○ Emerg non-AMAU									
○ Elective stay									
⊙ AMP all									
Value ▼ No value									
⊕ Expand all									
Total		2980	3.6	2.2	3.4	1.4	12692.5	59.8	66
⊕ Cancer		46	9.4	4.9	9.1	4.5	431	19.6	26.1
⊕ Cardiovascular		785	2.6	1.6	2.4	0.9	2519	67.9	73.4
⊕ Congenital anomaly		-							
⊕ Dermatological		40	1.9	1.2	1.9	0.7	121.5	75	77.5
⊕ Endocrine		84	3	1.8	2.9	1.2	252.5	59.5	72.6
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⊕ Haematological		35	3.2	1.9	3.1	1.3	113	62.9	65.7
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⊕ Renal/urogenital		154	6.3	4.9	6.9	1.5	1133	29.9	37.7

Can display to include values selected from the value button on the left

CCS Group, CCS,
Proc Group, Proc,
Admit Clinician,
Discharge Clinician,
Principal clinician,
Specialty Group, Specialty

Grid Report View - CCS Groups

National

Group

Hospital(s)

Key values

Streams

Diagnoses Groups

	National			Cases #	AvLOS (days)	AvLOS tgt	AvLOS off target	Difference from target	Bed days used #	1 day %	2 day %
Total				2980	3.6	2.2	3.4	1.4	12692.5	59.8	66
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Congenital anomaly			–								
Dermatological				40	1.9	1.2	1.9	0.7	121.5	75	77.5
Endocrine				84	3	1.8	2.9	1.2	252.5	59.5	72.6
Gastrointestinal				132	3.9	2.2	3.4	1.7	591	52.3	62.9
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Renal/urogenital				154	6.3	4.9	6.9	1.5	1133	29.9	37.7

Streams shown: AMAU only, AMAU in-house, Emerg non-AMAU, Elective stay, AMP all

Summary Report View

NQAIS Clinical displays the Summary Report when the application is launched

4 sections:

1. Key metrics – Discharges, BDU, Beds/Day, Beds per day 'on target', 'near target' and 'off target' Beds/Day post trim

2. Trends over 3 years using 3 views

Note: Metrics depend on HIPE coding completeness

Summary Report View contd:

Summary plot of beds per day on target, near target a

		Spec
		%
		.2
Total		
⊕ Cancer		.0
⊕ Cardiovascular		.7
⊕ Congenital anomalies		.2
⊕ Endocrine		.3
⊕ Gastrointestinal		.0
⊕ Haematological		.6
⊕ Infection		.0
⊕ Injury & poisoning		.2
⊕ Mental & behavioural		.4
⊕ Muscular Skeletal		.0
⊕ Neurological		.1
⊕ Renal & Genital		.1
⊕ Respiratory		.1
⊕ Skin diseases		.2
⊕ To Be Classified		.1
⊕ Unclassified		.0
⊕ Other		.4

Summary tables by patient streams

☐ Key flow metrics   Beds per day:

3. Display shows proportion of Beds Used per day 'on', 'near ' & 'off' target & post trim

Values appear when users hover over white, yellow and red bars.

4. Summary tables by patient streams in numerical form

Use + or – buttons to expand and contract views

Note: Potential for Red Beds to be used for other patients (waiting list or reduce the no. of patients on trolleys) see caveats re: calculation of this metric

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Assumptions underpinning the Red Bed Days

- It is a summary metric derived from clinical team peer averages and not from LOS for individual patients.

- It is retrospective - based on HIPE (discharge) data. HIPE data in NQAIS Clinical is refreshed monthly and is approximately 6 weeks in arrears as by this time the nationally collated dataset is considered sufficiently complete.

- It can be influenced by sudden and marked variations in discharge processes in the period of interest such as ward closures or discharge initiatives e.g. the availability of step down beds.

- It assumes that beds used in the admission streams are available seven days a week, this is not always the case and may give rise to fluctuations.

- Where patients have been discharged having stayed for a long period of time in hospital their total LOS is attributed to BDU in that month. Ward closures will reduce the number of bed days used. Discharge initiatives such as the availability of step down beds may allow the transfer of a higher than normal number of longer stay patients in a given month.

Assumptions underpinning the Red Bed Days contd;

The type of bed used during the hospital stay (e.g. rehabilitation, acute ward, etc.) is not available for inclusion in the analysis at this time.

It assumes that bed occupancy is constant and does not take into account fluctuations in bed occupancy in the period of interest.

It is inappropriate to assume that the metric is an indicator of the number of beds that are required or not required in the system.

It should be interpreted in the context that not all teams in all hospitals can be in the top quartile (i.e. 100% cannot be in the top 25%).

The red bed days metric should be interpreted as an indicator for where quality improvement initiatives, in the delivery of safe patient care, may provide process improvement.

Summary Report View – key flow metrics -
Comparisons can be made for AvLOS for previous 12 mths which can demonstrate an improvement or dis improvement for the AvLOS

Summary tables by patient streams

☑ Key flow metrics   Beds per day: ☐ Total ☐ On target ☐ Near target ☐ Off target ☐ Post trim ☐ Cases

Key flow metrics by patient stream   *Metrics dependent on HIPE coding completeness*

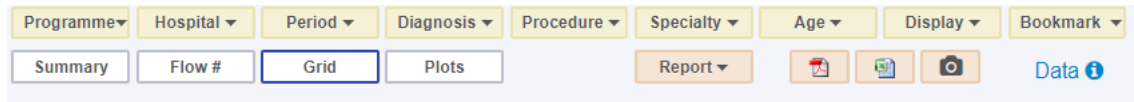|	Total		Emerg same day		Emerg stay		Elective day case		Elective stay	
AvLOS (excl trim)										
This period	2.5		6.3		9.2		3.4		5.4	
12 mth ago	2.6		5.9		10.0		3.4		5.9	
Difference (12m)	-0.1		0.4		-0.8		0		-0.5	
AvLOS (incl trim)										
This period	2.5		6.3		9.2		3.4		5.4	
12 mth ago	2.6		5.9		10.0		3.4		5.9	
Difference (12m)	-0.1		0.4		-0.8		0		-0.5	
	#		#	%	#	%	#	%	#	%
LOS										
LOS 0 (same day)	19588		828	4.2	0	0.0	18760	95.8	0	0.0
LOS 1-2 days	3175		0	0.0	1620	51.0	0	0.0	1555	49.0
LOS 3-7 days	2459		0	0.0	1519	61.8	0	0.0	940	38.2
LOS 8-14 days	1120		0	0.0	724	64.6	0	0.0	396	35.4
LOS 15-30 days	601		0	0.0	446	74.2	0	0.0	155	25.8
LOS > 30 days	294		0	0.0	245	83.3	0	0.0	49	16.7
Cases										
This period	27237		828	3.0	4554	16.7	18760	68.9	3095	11.4
12 mth ago	26897		755	2.8	4346	16.2	18929	70.4	2867	10.7
Difference (12m)	340		73	21.5	208	61.2	-169	-49.7	228	67.1
On target days										
This period	28974.7		0.0	0.0	19061.8	65.8	0.0	0.0	9912.8	34.2
12 mth ago	27502.0		0.0	0.0	17845.8	64.9	0.0	0.0	9656.2	35.1
Difference (12m)	1472.7		0	0.0	1216	82.6	0	0.0	256.6	17.4
Near target days										
This period	10336.5		0.0	0.0	7682.6	74.3	0.0	0.0	2653.9	25.7
12 mth ago	9604.4		0.0	0.0	7177.4	74.7	0.0	0.0	2427.0	25.3
Difference (12m)	732.1		0	0.0	505.2	69.0	0	0.0	226.9	31.0
Off target days										
This period	29063.9		414.0	1.4	15114.6	52.0	9380.0	32.3	4155.3	14.3
12 mth ago	33203.6		377.5	1.1	18472.7	55.6	9464.5	28.5	4888.9	14.7
Difference (12m)	-4139.7		36.5	-0.9	-3358.1	81.1	-84.5	2.0	-733.6	17.7
Post trim days										
This period	0.0		0.0	-	0.0	-	0.0	-	0.0	-
12 mth ago	0.0		0.0	-	0.0	-	0.0	-	0.0	-
Difference (12m)	0		0	-	0	-	0	-	0	-

Summary Report View – key flow metrics -

- Where the period selected for the report is for a history period that does not have an equivalent period of a previous 12 mth in the NQAIS Clinical database then the Summary reports comparative for '12 mth ago' will be misleading

- The application does not provide an alert for this

Report Export Button

Programme ▾	Hospital ▾	Period ▾	Diagnosis ▾	Procedure ▾	Specialty ▾	Age ▾	Display ▾	Bookmark ▾
Summary	Flow #	Grid	Plots		Report ▾			Data ℹ

A detailed report can be generated for Acute (Adult) Medicine or Surgery Programme for individual hospitals for 3 months 6 months, 9 months or 12 months
(Summary, Flow, Grid, Plots views)
The report can be saved as a PDF and/or printed

Data Button
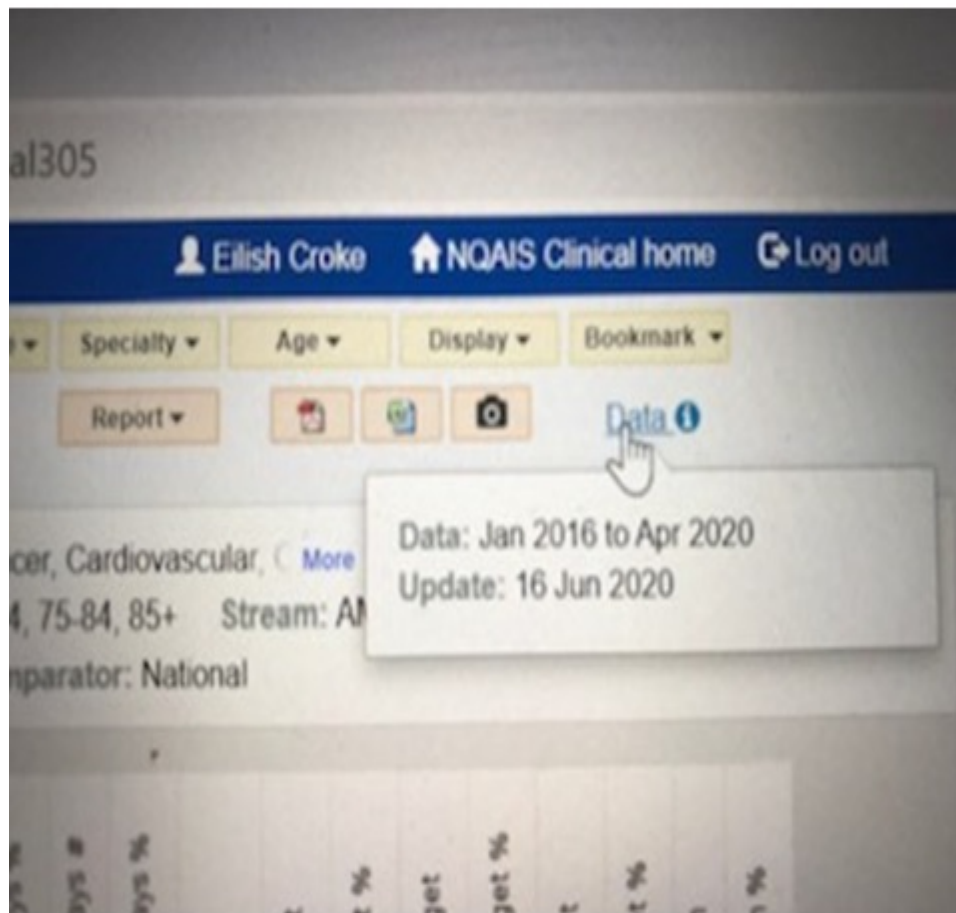
The 'data' button informs users of the most current data uploaded on the system and when the update took place e.g. 2nd July 2020

Other buttons

| Programme ▾ | Hospital ▾ | Period ▾ | Diagnosis ▾ | Procedure ▾ | Specialty ▾ | Age ▾ | Display ▾ | Bookmark ▾ |

| Summary | Flow # | Grid | Plots | | Report ▾ | 📄 | 📊 | 📷 | Data ⓘ |

Screen views can be saved or printed in PDF

Suitable data can be displayed and manipulated using excel.
An indicator 🚫 will appear if this is not allowable

Screen views can be displayed, printed or saved in jpeg

How Hospital Management can use NQAIS Clinical

- *Hospital management / Clinical leadership: strategic*
  - *Review process flows and specialities*
  - *Use quality improvement processes (DMAIC, PDSA)*
  - *Evaluate activity levels & performance in conjunction with hospital plans*
  - *Inform SMART objective setting*
  - *Celebrate success / manage SMART objective attainment*

- *Hospital management / Clinical leadership: operational*
  - *Champion data driven decision making with NQAIS*
  - *Review data*
  - *Identify items to be investigated*
  - *Initiate root cause analysis as required*
  - *Initiative improvement / corrective actions*
  - *Monitor improvement performance, procedures, change to care pathways, …*
  - *Celebrate success*

Define	Measure	Analyse	Implement	Control

Thanks for sharing the knowledge

Twice as fast, go for it

People working together deliver Quality Improvement

Information
Information
Information

Decision Making

Action

Measure

Review and Control

D	M	A	I	C
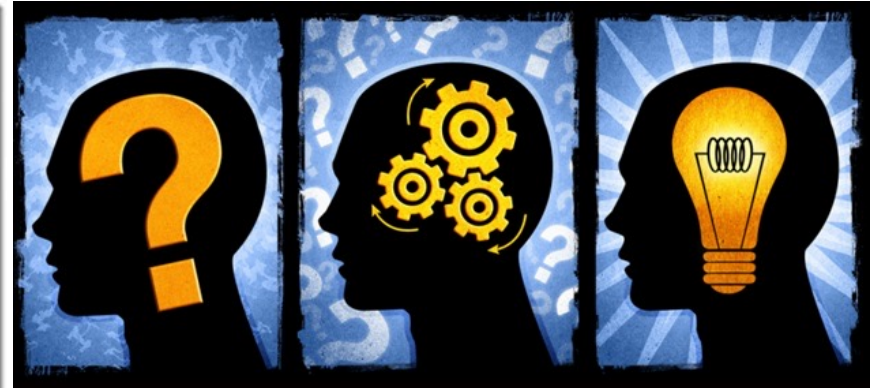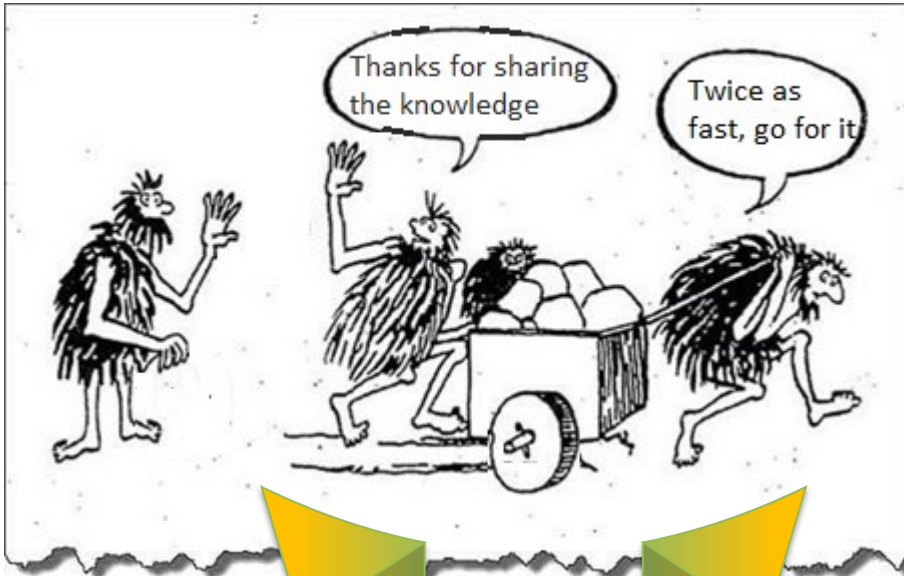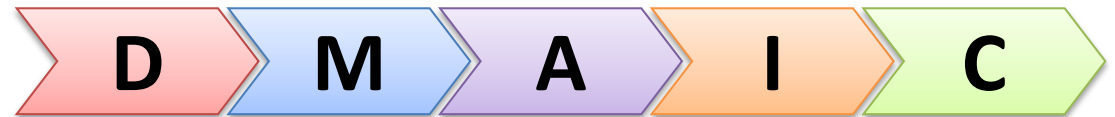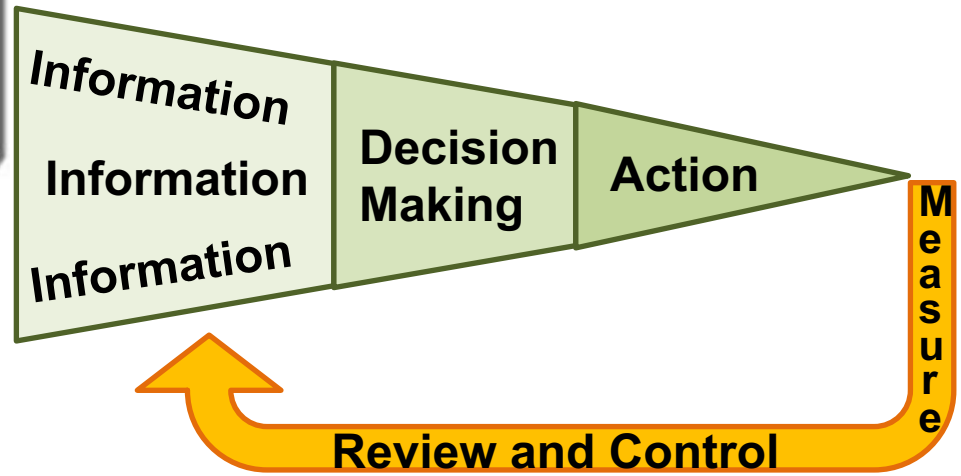
Decision **M**aking **A**fter **I**nformed **C**hoices

NQAIS Clinical
© National Quality Assurance & Improvement System
Confidential display HIPE/HPO data

| Programme▾ | Hospital ▾ | Period ▾ | Diagnosis ▾ | Procedure ▾ | Specialty ▾ | Age ▾ | Display ▾ | Bookmark ▾ |
| Summary | Flow # | Grid | Plots | | Report ▾ | | | Data ℹ |

D ▶ M ▶ A ▶ I ▶ C
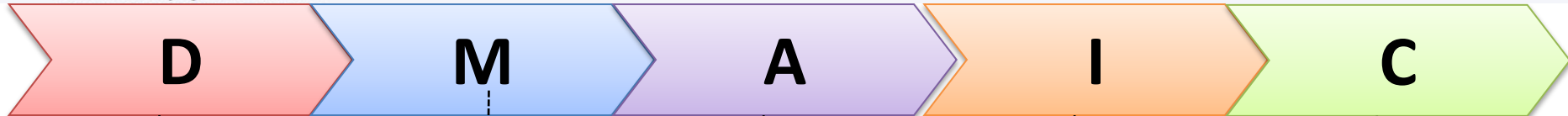
Define the problem or area you want to focus on
NQAIS summary report, ...

Measure what is happening now, Variance analysis
NQAIS Plots, Grid, ...

Analyse the problem, Ishikawa (root cause analysis), Pick & scope the Quality Improvement initiative
Data driven decision making, ...

Implement quality improvement initiative

Control
Verify desired impact, adjust as necessary & sustain
NQAIS ...

People working together deliver Quality Improvement

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Compstat / KPI's ≠ NQAIS – Different purposes

- ***Compstat Reports*** *= S.M.A.R.T. objectives (Specific, Measureable, Achievable, Real, Time bound) -* **_Accountability_**

- *Reports - Frozen (not updated each month following release)*

- *Used for monitoring of KPIs over a year*

- **NQAIS Clinical data** is updated as HIPE records are updated in the system until HPO announce the cut off date (~ March for the previous year's HIPE data)

- Can by used for quality improvement initiatives and research

- A Guideline on using NQAIS Clinical for research is available in the RCSI link section on the application

Thank you
Questions

For queries contact:

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or

Gerrykelliher@rcsi.com