Centre for Health Services Research
chsr@uq.edu.au | chsr.centre.uq.edu.au

The University Of Queensland
AUSTRALIA
CREATE CHANGE

Do we really need that mandatory data field?

Presented by Dr Marianne Kirrane

QUEENSLAND DIGITAL HEALTH **GRAND ROUND SERIES**

QUEENSLAND
DIGITAL ACADEMY

Queensland Government

Why am I here talking to you?

- Intensivist

Credit: https://www.healthcareglobal.com/public-health/intensivist-shortage-there-way-around-it

Credit: https://salarieshub.com/intensivist-salary/

Credit: https://www.businesswire.com/news/home/20190211005225/en/Baxter-NantHealth%C2%AE-Advance-Digital-Health-Technology-Medical

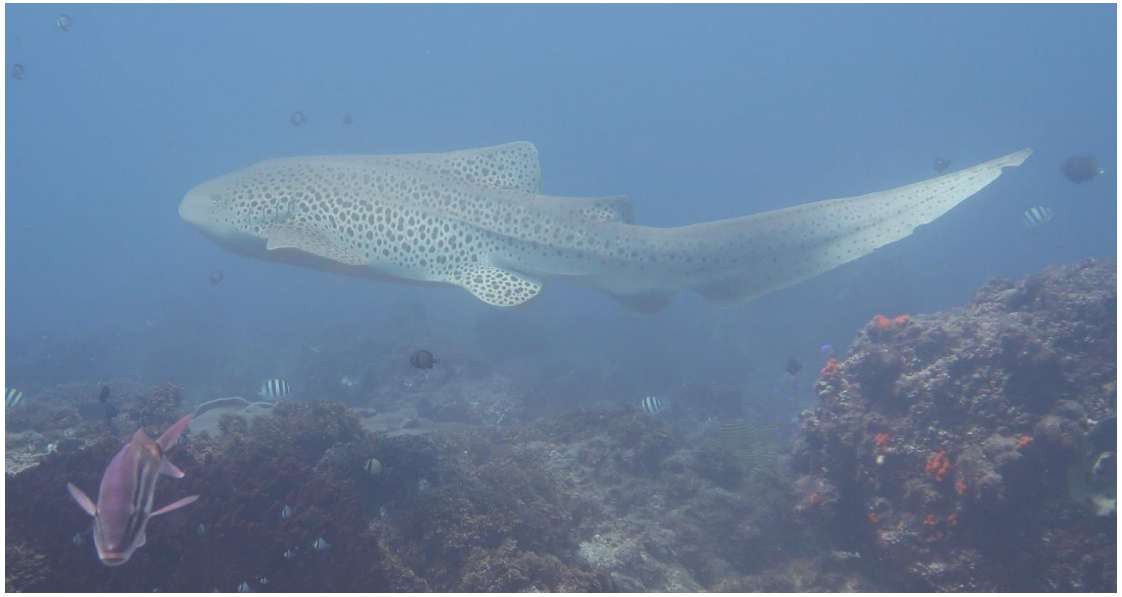
Why am I here talking to you?

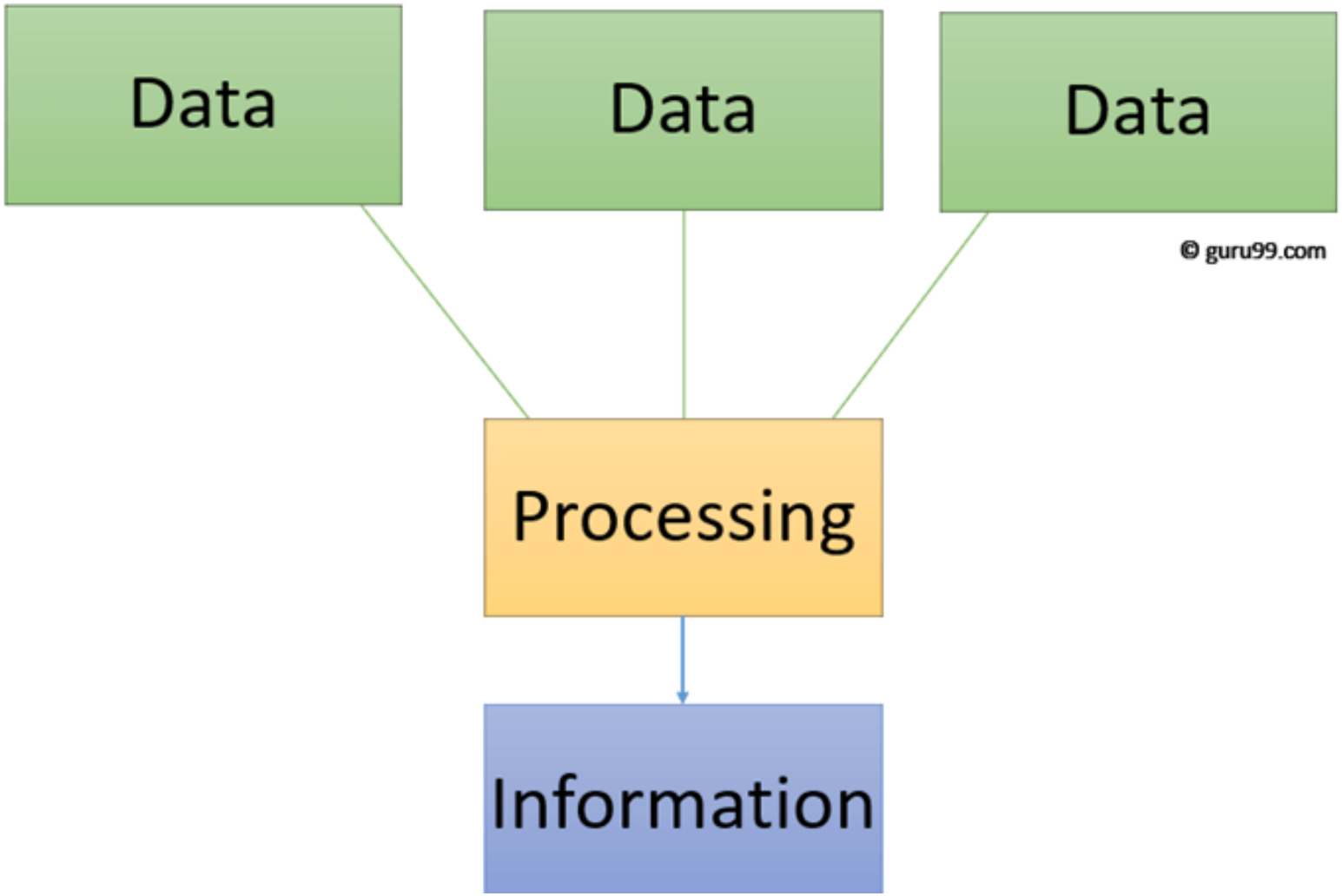
- Intensivist
- Geek

Credit: https://www.cenaynailor.com/my-personal-wp-geek/

Why am I here talking to you?

- Intensivist
- Geek
- Informed risk-taker




Data
Data
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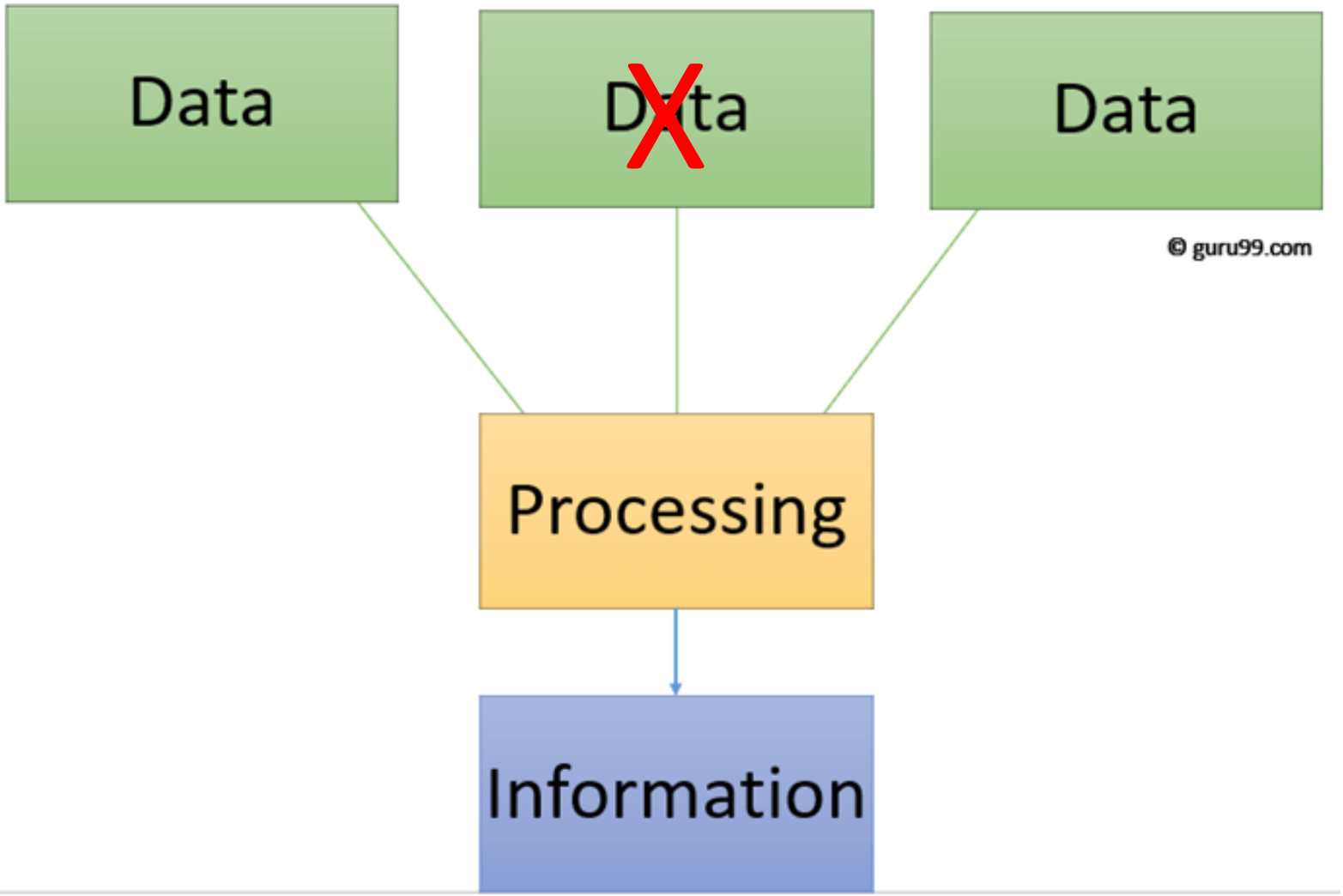
Processing
Information

Credit: https://www.businesswire.com/news/home/20190211005225/en/Baxter-NantHealth%C2%AE-Advance-Digital-Health-Technology-Medical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RBWH Training - Citrix Receiver

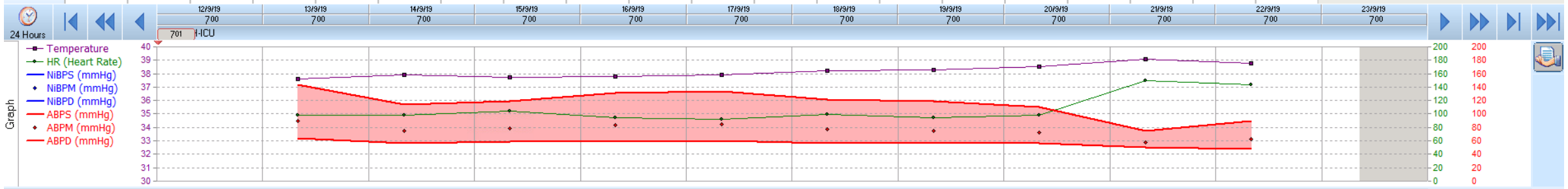
Active user: Marianne Kirrane | Bed:01 | Patient: Test Patient | UR:2323222 | Patient Age: 0 year | Allergies: Nil Known Allergies Reported | HBCIS Alerts/Allergies Present: No | ICU Precautions: | ARP Directive: | PCA Order:

ICU | Reports | Tools | Links | Feedback | Help | ICU Intranet Website | Refresh (F5) | Logout (F12)

PATIENT | MEDICAL | NURSING | ALLIED HEALTH | RESEARCH | ALLERGIES | WOUNDS | CPR | DISCHARGE SUMMARY | PRINT

Summary | CVS | ECMO | RESP | NEURO | Circulation | Nutrition | APMS | CRRT & TPE | Lines | Drains | Fluid Balance | Infusions | MED CHART | ORDERS | Tasks | Notes | Procedures | Laboratory | Microbiology | Nursing Care

24 Hours



													Normal values	
HR (Heart Rate)		98	98	104	95	92	99	95	98	150	144		60	100
ABPS (mmHg)		143	114	119	131	134	122	119	110	75	90		90	140
ABPD (mmHg)		64	56	59	59	60	56	56	56	50	48		60	90
ABPM (mmHg)		89	75	79	83	85	77	75	73	58	62		70	105
Temperature		37.6	37.9	37.7	37.8	37.9	38.2	38.3	38.5	39.1	38.8		36	37
CVS														
Heart Rhythm		Sinus Rhythm			Sinus Rhythm					Atrial Fibrillation	Atrial Fibrillation			
NiBPS (mmHg)													90	140
NiBPD (mmHg)													60	90
NiBPM (mmHg)													70	105
NEURO														
GCS Eyes		E4 Spontaneously				E3 To Speech				E3 To Speech				
GCS Motor		M6 Obeys				M6 Obeys				M5 Localises				
GCS Verbal		V3 (t) Intubated (Mir→				V3 (t) Intubated (Mir→				V1 (t) Intubated (No→				
GCS_Total		13				12				9				
ICP (mmHg)													0	20
CPP (mmHg)													50	
CSF	0	0	0	0	0	0	0	0	0	0	0	0		
RESP														
Oxygen Delivery Via														
FiO2 (%)		40	40	40	35	35	30	35	35	60	55		21	100
SpO2 (%)		94	96	95	97	95	92	94	92	90	94		95	100
Total Respiratory Rate		16	22	22	24	23	25	24	26	33	16		6	30
Ventilation Mode		SIMV VC+/- PS	CPAP PSV	CPAP PSV	CPAP PSV	CPAP PSV	CPAP PSV	CPAP PSV	CPAP PSV	CPAP PSV	SIMV VC+/- PS			

Infusions/ Fluids/ Nutrition

Metro North Hospital and Health Service *Putting people first*

DIGITAL METRO NORTH

REIMAGINING HEALTHCARE

MN32 #NEXTCARE THE FUTURE OF HEALTH

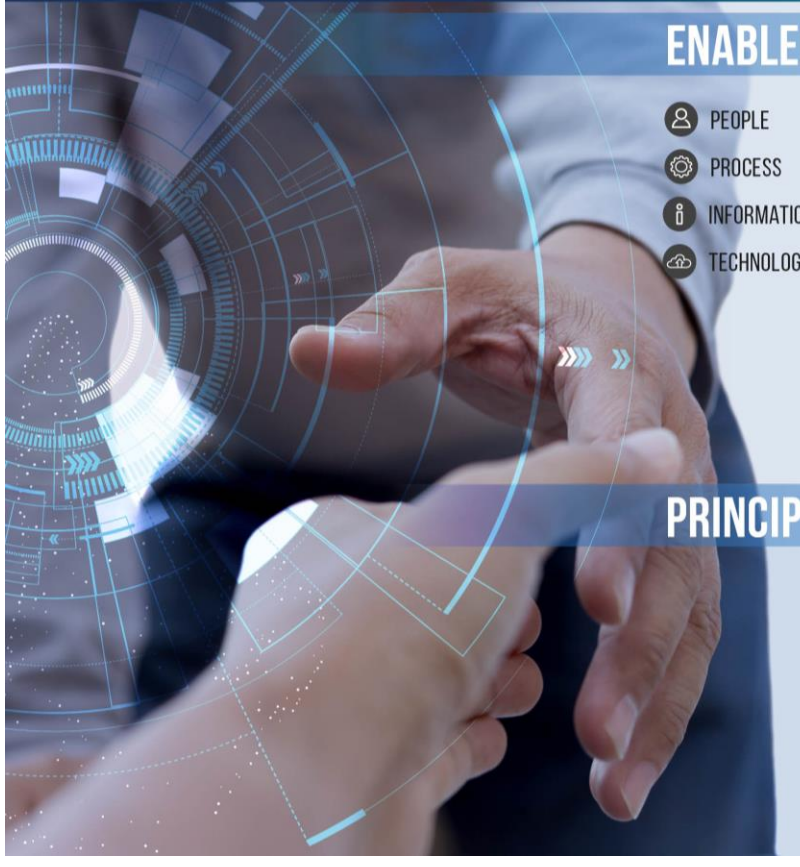
2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032

HORIZONS

HORIZON 1
Building digital foundations

HORIZON 2
Transforming patient care

HORIZON 3
Reimagining our future



ENABLERS

- PEOPLE
- PROCESS
- INFORMATION
- TECHNOLOGY

HORIZON 1	HORIZON 2	HORIZON 3
Our workforce develops digital literacy Integrated research partnerships are established	Workforce skilled in the data cycle Personalised care plans for patients	Innovative workforce New digital models of care for patients
Integrating information and technology Transition from paper to digital records	Transparency to increase efficiency and reliability	Machine learning and artifical intelligence informs clinical practices
Collecting and collating patient data with best practice standards	Live-streaming analytics and reporting Robust data governance	Predictive and prescriptive analytics
Broadens workflows to improve care Integrates devices	Establish links between data and analytics Sophisticated data extractions	Our digital platform integrates with emerging technologies

PRINCIPLES

- CULTURAL READINESS
- TECHNICAL EXCELLENCE
- DIGITAL CLINICAL GOVERNANCE
- SINGLE SOURCE OF TRUTH FOR DATA
- INFORMATION GOVERNANCE AND TRANSPARENCY
- INTEGRATION
- DISASTER RECOVERY AND CYBERSECURITY
- DIGITAL PARTNERSHIPS WITH RESEARCH TEAMS AND UNIVERSITIES

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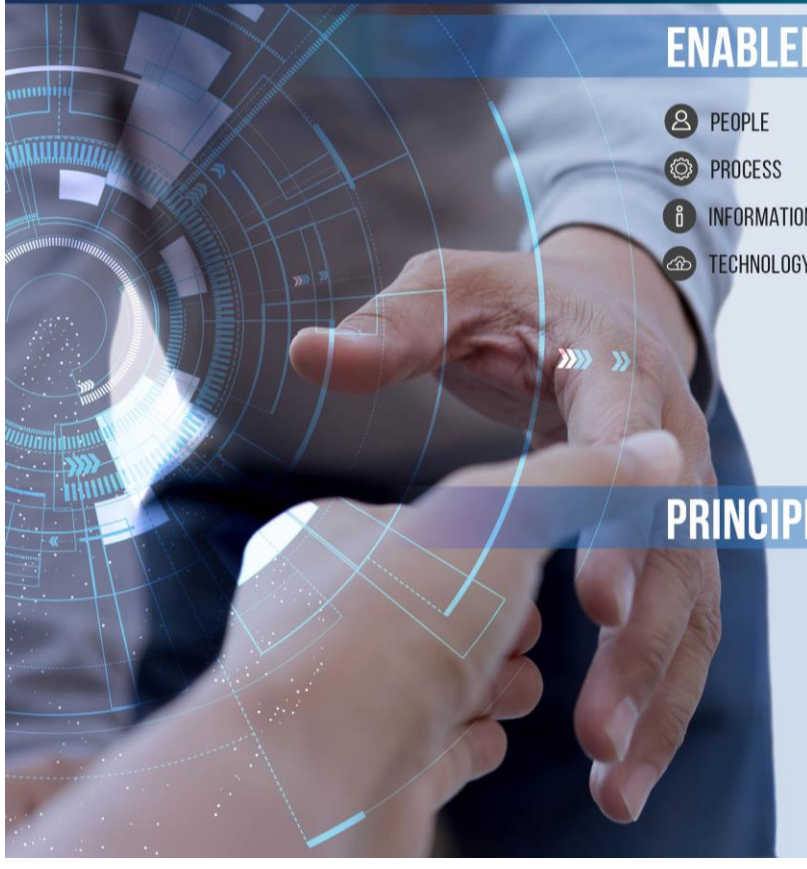

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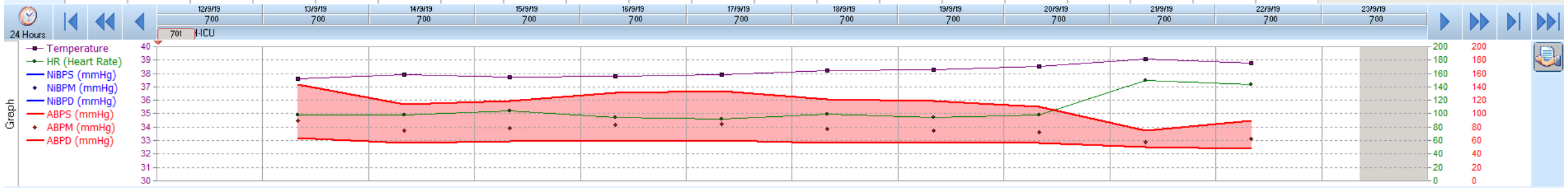

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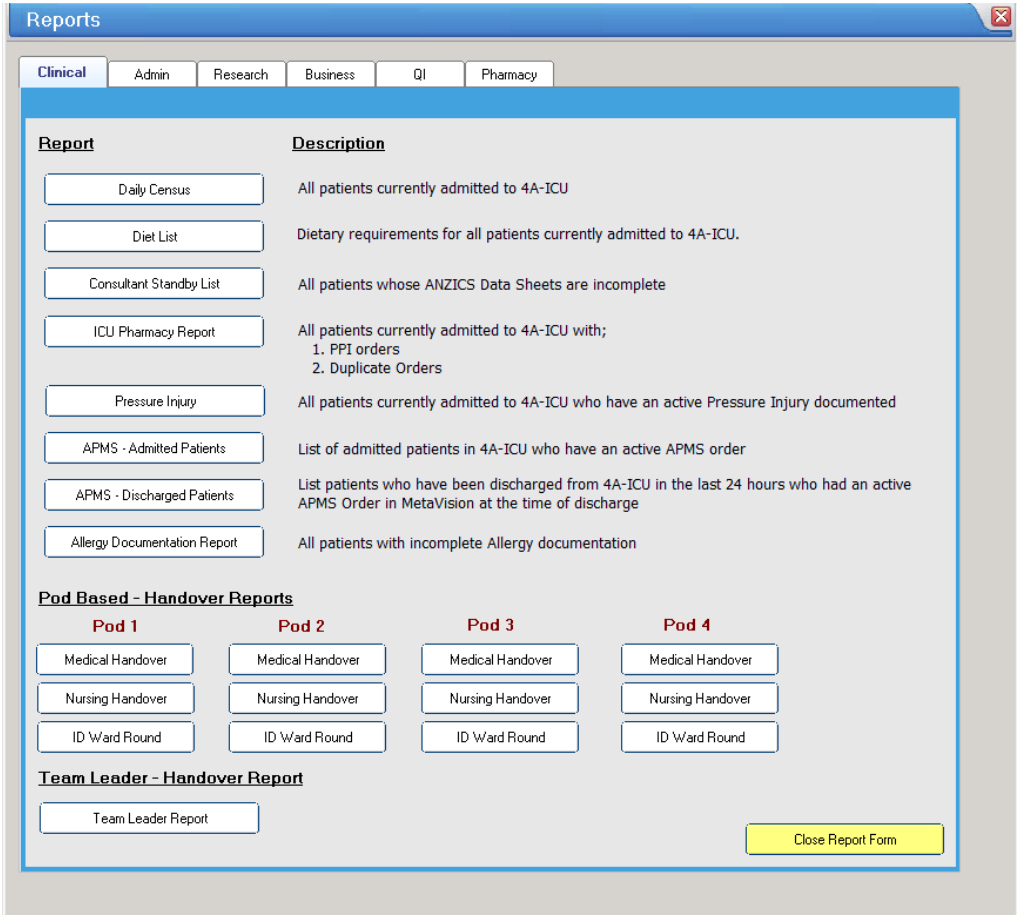
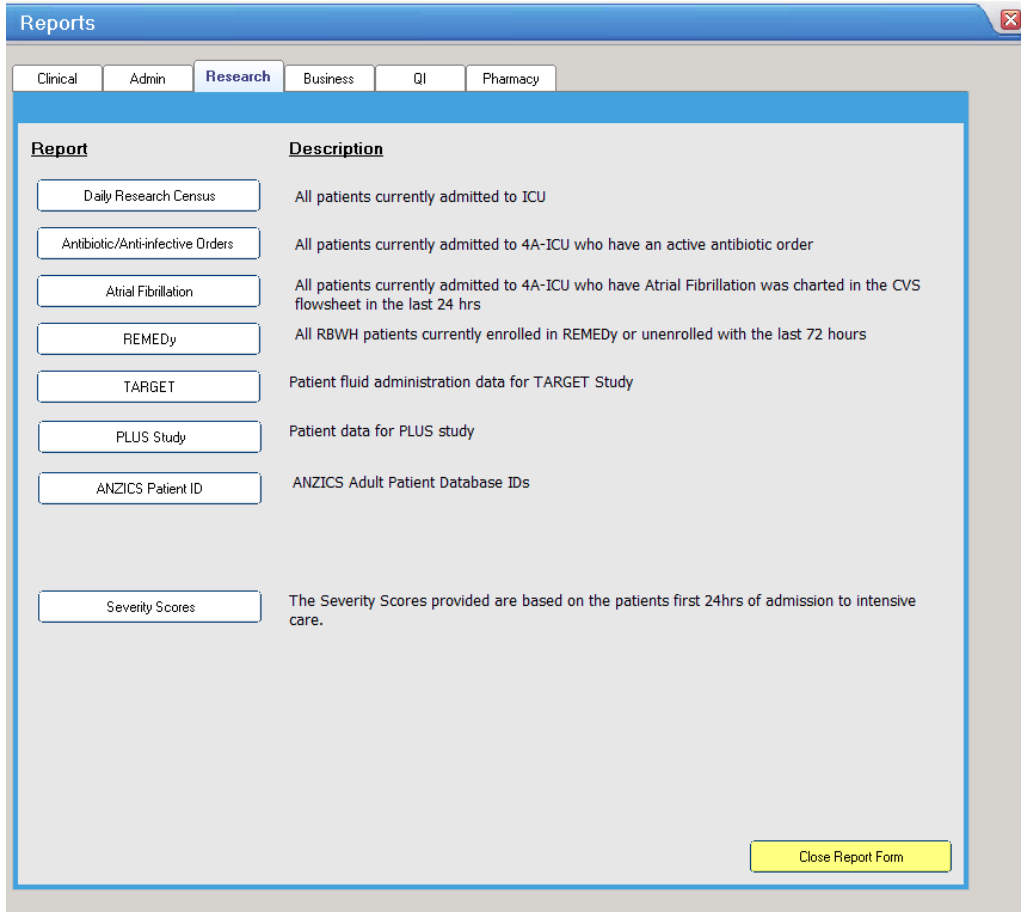
Infusions/ Fluids/ Nutrition

Reports


Reports
Clinical
Admin
Research
Business
QI
Pharmacy
Report
Description
Daily Census
All patients currently admitted to 4A-ICU
Diet List
Dietary requirements for all patients currently admitted to 4A-ICU.
Consultant Standby List
All patients whose ANZICS Data Sheets are incomplete
ICU Pharmacy Report
All patients currently admitted to 4A-ICU with;
1. PPI orders
2. Duplicate Orders
Pressure Injury
All patients currently admitted to 4A-ICU who have an active Pressure Injury documented
APMS - Admitted Patients
List of admitted patients in 4A-ICU who have an active APMS order
APMS - Discharged Patients
List patients who have been discharged from 4A-ICU in the last 24 hours who had an active APMS Order in MetaVision at the time of discharge
Allergy Documentation Report
All patients with incomplete Allergy documentation
Pod Based - Handover Reports
Pod 1
Pod 2
Pod 3
Pod 4
Medical Handover
Nursing Handover
ID Ward Round
Team Leader - Handover Report
Team Leader Report
Close Report Form


Reports
Clinical
Admin
Research
Business
QI
Pharmacy
Report
Description
Daily Research Census
All patients currently admitted to ICU
Antibiotic/Anti-infective Orders
All patients currently admitted to 4A-ICU who have an active antibiotic order
Atrial Fibrillation
All patients currently admitted to 4A-ICU who have Atrial Fibrillation was charted in the CVS flowsheet in the last 24 hrs
REMEDy
All RBWH patients currently enrolled in REMEDy or unenrolled with the last 72 hours
TARGET
Patient fluid administration data for TARGET Study
PLUS Study
Patient data for PLUS study
ANZICS Patient ID
ANZICS Adult Patient Database IDs
Severity Scores
The Severity Scores provided are based on the patients first 24hrs of admission to intensive care.
Close Report Form

DEPARTMENT OF INTENSIVE CARE SERVICES - Daily Pressure Injury Audit [redacted]

Bed [redacted] | UR: [redacted] | Patient Name: [redacted] | ICU Admit D/T: [redacted]

Site	Stage	Riskman Incident #	Healed
Nare Right	Stage 2 (Partial thickness loss, superficial)	[redacted]	Not entered

Bed [redacted] | UR: [redacted] | Patient Name: [redacted] | ICU Admit D/T: [redacted]

Site	Stage	Riskman Incident #	Healed
anus	Stage 2 (Partial thickness loss, superficial)	[redacted]	Not entered
[redacted]			

Exclusions

This report excludes 'Stage 1 (Non-blanchable erythema of intact skin)' pressure injuries

Report created by: RBWH ICU CIS Team @ 26/05/2016 09:00 |Dect: x75948 |E-mail: RBWH-ICU-CIS@health.qld.gov.au [redacted]

Case Vignette

Your Director comes to you as she's been alerted that your clinical unit's rate of patients with pulmonary emboli has increased.

You confirm that is correct but how do you get the information you need quickly enough to minimise ongoing harm?

So why the increased PE rate?

- Poor VTE prophylaxis compliance?
- Increased incidence pro-thrombotic conditions?
- Better reporting?

VTE in ICU

- Major cause of morbidity and mortality
- Potentially avoidable

Continuing Medical Education

Give your patient a fast hug (at least) once a day*

Jean-Louis Vincent, MD, PhD, FCCM

LEARNING OBJECTIVES

On completion of this article, the reader should be able to:

1. Interpret the mnemonic "Fast Hug."
2. Explain the elements of "Fast Hug."
3. Use this knowledge in a clinical setting.

The author has disclosed that he has no financial relationships or interests in any commercial companies pertaining to this educational activity.

Wolters Kluwer Health has identified and resolved any faculty conflicts of interests regarding this educational activity.

Visit the *Critical Care Medicine* Web site (www.ccmjournal.org) for information on obtaining continuing medical education credit.

Objective: **To introduce the Fast Hug mnemonic (Feeding, Analgesia, Sedation, Thromboembolic prophylaxis, Head-of-bed elevation, stress Ulcer prevention, and Glucose control) as a means of identifying and checking some of the key aspects in the general care of all critically ill patients.**

Design: **Not applicable.**

Setting: **Any intensive care unit at any time.**

Patients: **All intensive care unit patients.**

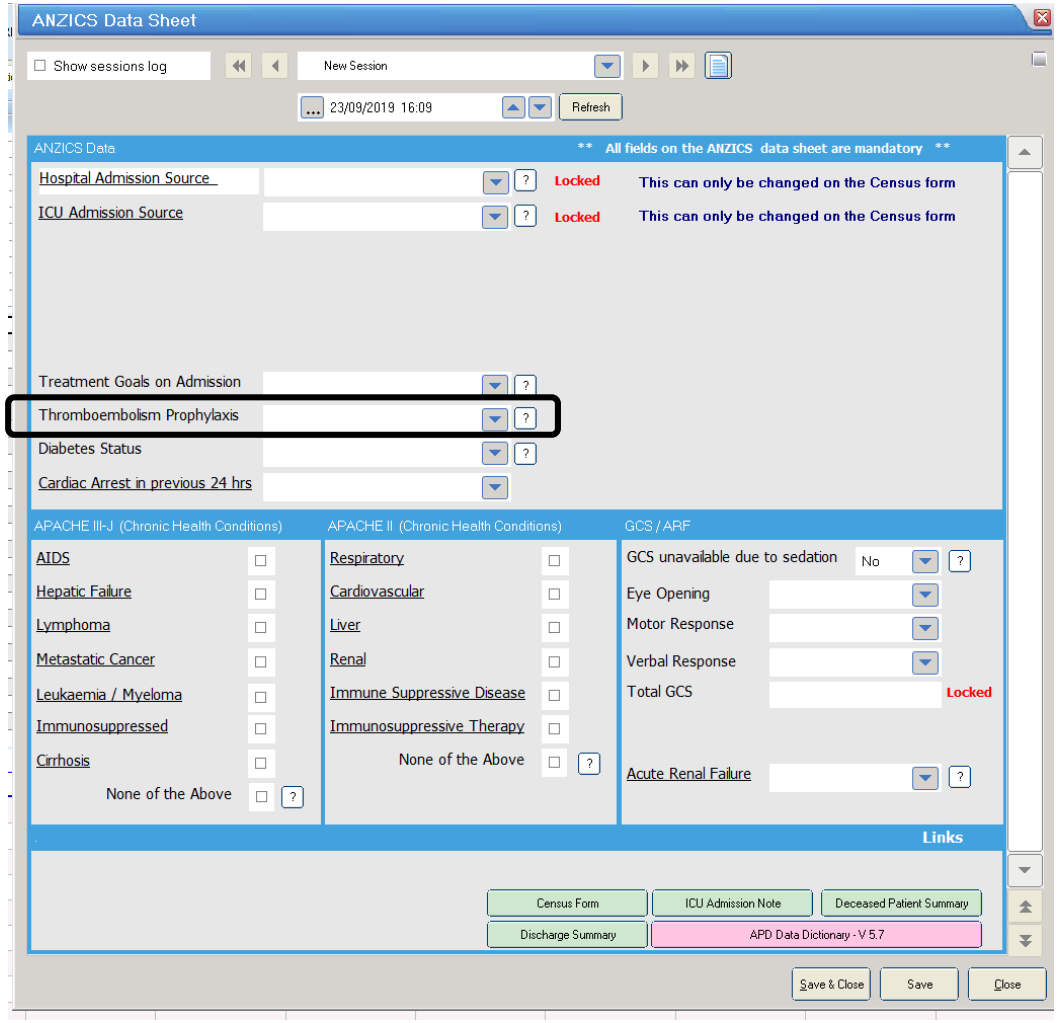
Interventions: **Dependent on the results of applying the Fast Hug.**

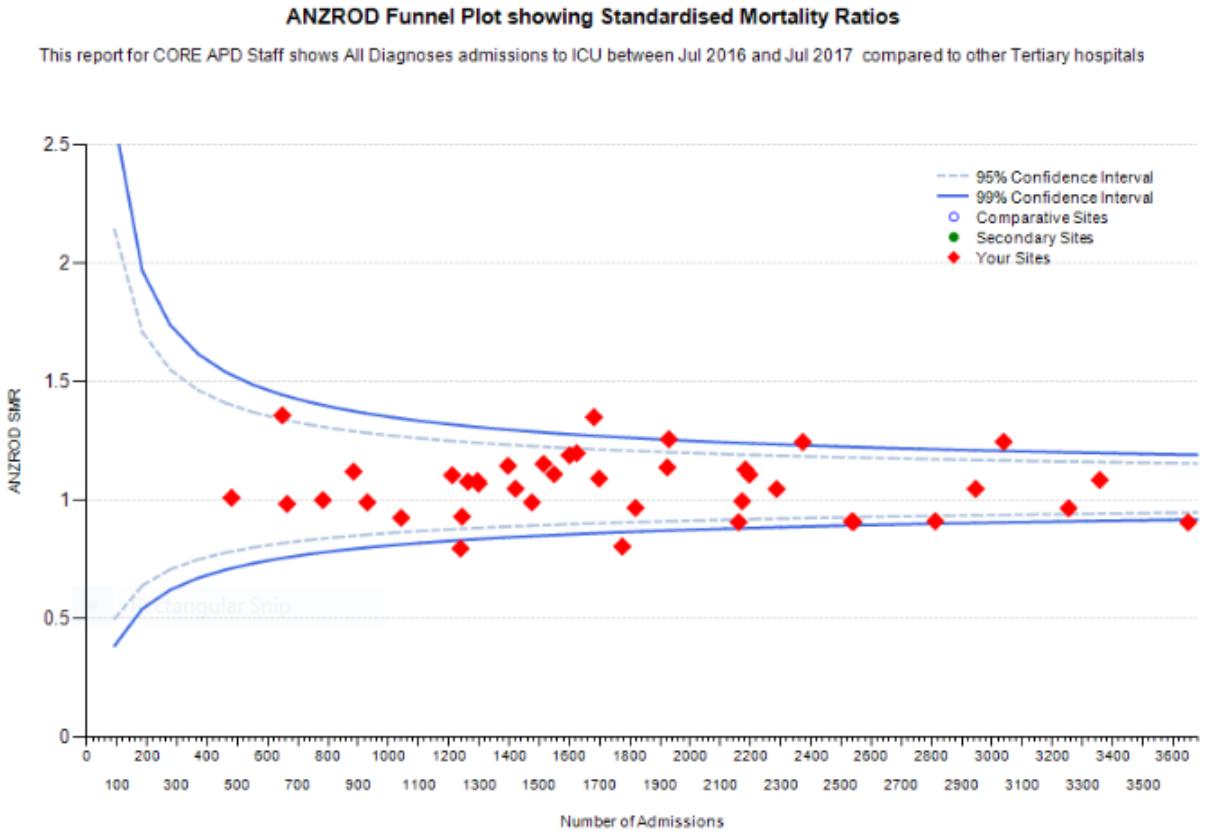
Measurements and Main Results: **Not applicable.**

Conclusions: **Application of this simple strategy encourages teamwork and may help improve the quality of care received by our intensive care unit patients. (Crit Care Med 2005; 33:1225–1229)**

KEY WORDS: feeding; sedation; analgesia; stress ulcer prevention; semirecumbent; glucose control; thromboembolism

ANZICS CORE


ANZICS Data Sheet
Show sessions log
New Session
23/09/2019 16:09
Refresh
ANZICS Data
** All fields on the ANZICS data sheet are mandatory **
Hospital Admission Source
Locked
This can only be changed on the Census form
ICU Admission Source
Locked
This can only be changed on the Census form
Treatment Goals on Admission
Thromboembolism Prophylaxis
Diabetes Status
Cardiac Arrest in previous 24 hrs
APACHE III-J (Chronic Health Conditions)
AIDS
Hepatic Failure
Lymphoma
Metastatic Cancer
Leukaemia / Myeloma
Immunosuppressed
Cirrhosis
None of the Above
APACHE II (Chronic Health Conditions)
Respiratory
Cardiovascular
Liver
Renal
Immune Suppressive Disease
Immunosuppressive Therapy
None of the Above
GCS / ARF
GCS unavailable due to sedation
No
Eye Opening
Motor Response
Verbal Response
Total GCS
Locked
Acute Renal Failure
Links
Census Form
ICU Admission Note
Deceased Patient Summary
Discharge Summary
APD Data Dictionary - V 5.7
Save & Close
Save
Close


ANZROD Funnel Plot showing Standardised Mortality Ratios
This report for CORE APD Staff shows All Diagnoses admissions to ICU between Jul 2016 and Jul 2017 compared to other Tertiary hospitals
95% Confidence Interval
99% Confidence Interval
Comparative Sites
Secondary Sites
Your Sites
ANZROD SMR
Number of Admissions

Contra-indications for VTE prophylaxis

1.4.1 Contraindications to mechanical VTE prophylaxis

A comprehensive vascular assessment which includes palpation of peripheral pulse skin blanch tests should be conducted to help assess contraindications to mechani prophylaxis. Contraindications are:

- Severe peripheral arterial disease or ulcers
- Recent skin graft
- Peripheral arterial bypass grafting
- Severe leg oedema or pulmonary oedema from congestive heart failure
- Known allergy to material of manufacture
- Severe local problems on legs (e.g. gangrene, dermatitis, fragile 'tissue paper' skin)

Patients for whom IPC is a suitable option, ho… …dicated:

- Patients admitted for stroke
- Severe leg deformity or … …g correct fit
- Severe periphera…

If VTE pro… …or if contraindicated, document on the NIMC by t… appropri… …the relevant section is signed and dated to indicate tha… assessme… …plete. For facilities using ieMR, the appropriate section in the E… should be …mpleted.

1.4.2 Contraindications to pharma… …phylaxis

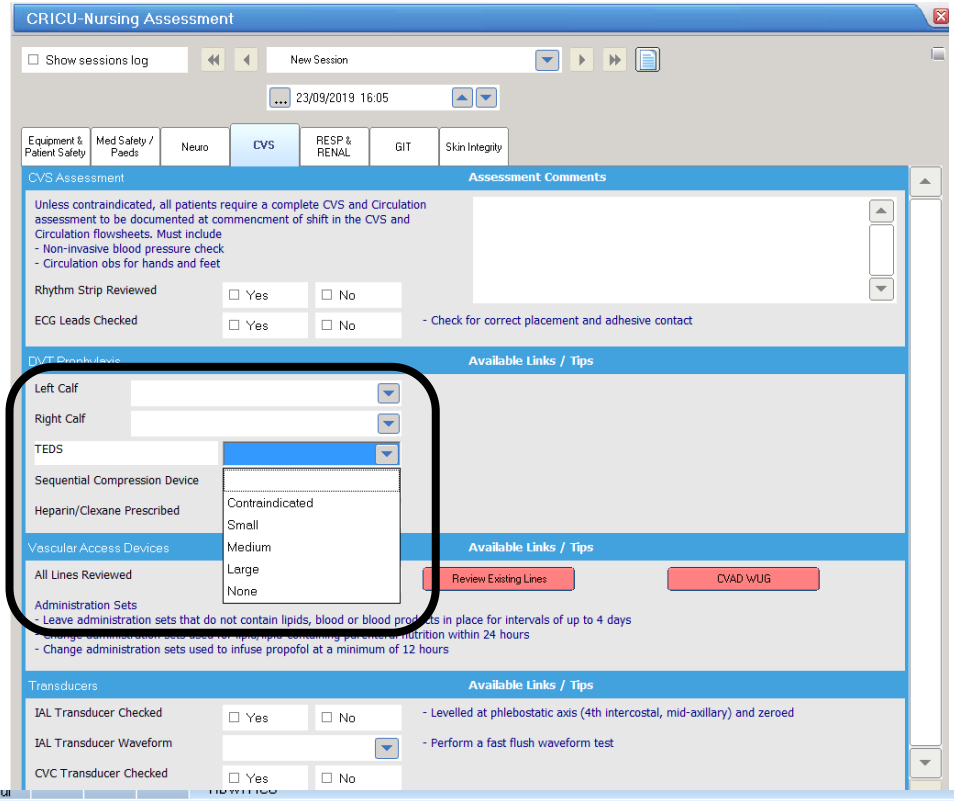
Absolute: Where there is an absol… …harmacological prophylaxis, consider mechanical prophyl… …olute contraindication is resolved. Absolute contraindica…

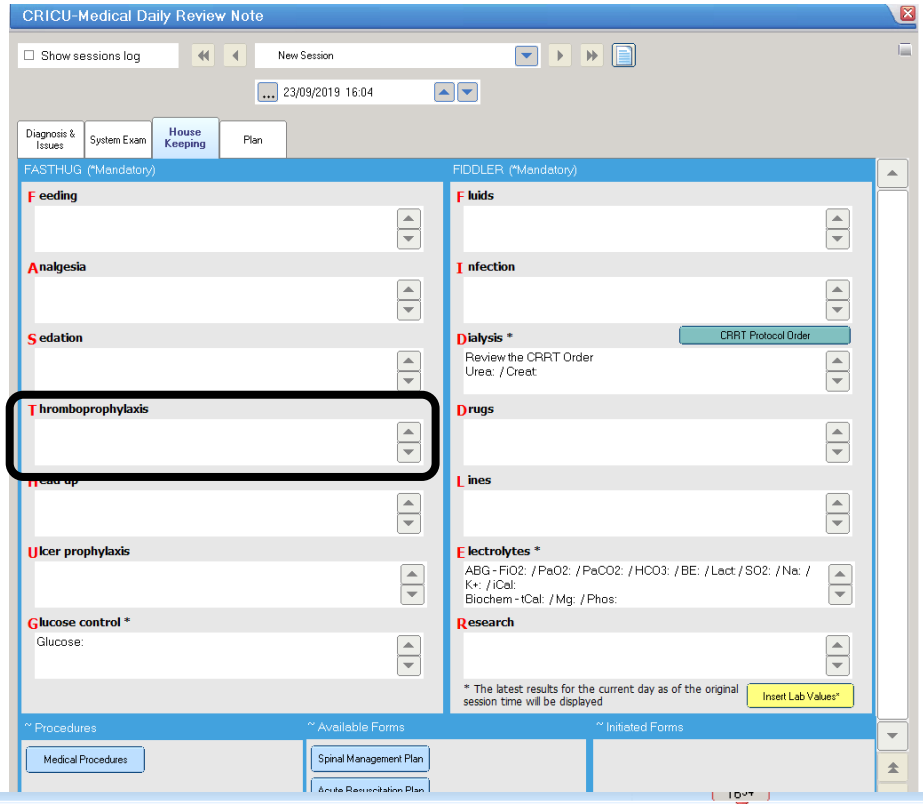
- Alread… …ently receiving an anticoagulant such as UFH, … …m with an INR in therapeutic range, danaparoid, bivalirudin,
- …or bleeding (e.g. 2 units or more of blood or blood products transfused in …hours)
- Recent clinically significant bleeding (within the last 48 hours)
- Thrombocytopenia (platelets less than 50 x 10^9/L) [1]
- Inherited or acquired bleeding disorders (e.g. haemophilia)

Relative: Where there are relative contraindications, caution needs to be exercised and the benefits of pharmacological prophylaxis weighed against the risks. Relative contraindications are:

- Surgical procedures with high bleeding risk (e.g. head and neck surgery, neurosurgery, or eye surgery) within the last two weeks
- Recent gastrointestinal or genitourinary bleeding
- Recent central nervous system bleeding
- Intracranial or spinal lesion deemed by neurosurgery to be at high risk of bleeding
- Uncontrolled systolic hypertension (230/120 mmHg or higher)
- Conditions associated with high risk of clinically significant bleeding
  - Active peptic ulcer and/or active ulcerative gastrointestinal disease
  - Severe hepatic disease or acute liver failure
- Other conditions with significant bleeding risk

HEPARIN INDUCED THROMBOCYTOPAENIA AND THROMBOSIS (HITT)





Current Medication Orders **(See MedChart for Once Orders)**

Menu b →	PRN flag	Orderable	Z-Drug Name	Quantity	Frequency	Route	Dose	Rate	Solution volume	Solution	Infuse over	Start date & time	Stop
		Compound Sodium Lactate 1000mL (Hartmann's)		1000 mL	Continuous	Intravenous		50 mL/hour			20 hour	27/07/2018 09:52	
		FentaNYL inj		1000 microg	Continuous	Intravenous	10 microg/hour	1 mL/hour	100 mL	Sodium Chloride 0.9%	100 hour	05/09/2018 15:06	
	PRN	FentaNYL inj		25 microg	every 15 min	Intravenous			2.5 mL	Solution		27/07/2018 09:54	
		Furosemide (Frusemide) inj		60 mg	Continuous	Intravenous	3 mg/hour	3 mL/hour	60 mL	Sodium Chloride 0.9%	20 hour	07/09/2019 07:03	
		Heparin Sodium 5000Units/0.2mL		5000 Unit	every 12 hour	Subcutaneous						23/09/2019 15:33	
	PRN	Metoclopramide inj		20 mg	every 8 hour	Intravenous			4 mL	Solution		08/10/2018 09:09	
		NORadrenaline inj		6 mg	Continuous	Central Ven →	2 microg/min	2 mL/hour	100 mL	Glucose 5%	50 hour	07/09/2019 07:04	
		Ondansetron inj		4 mg	every 8 hour	Intravenous			2 mL	Solution		05/09/2018 15:04	
	PRN	Paracetamol inj		1000 mg	every 6 hour	Intravenous			100 mL	Solution		07/09/2019 06:59	
		Z-Drug IV Fluid		1000 mL	Continuous	Intravenous		50 mL/hour			20 hour	27/07/2018 09:56	

RBWH DEPARTMENT OF INTENSIVE CARE MEDICINE - Searchable Medication Report

This is searchable medication report that lists all medications prescribed within a defined duration. Enter the date range and select the drug name to display the results.

Patient Name	UR	Drug	Route	Quantity	PRN	Freq	Rate	Start	Stop
[redacted]		Heparin inj	Intravenous	4000 Unit	PRN	3 day		09/07/19 14:41	11/07/19 18:30

Warfarin
Apixaban
Dabigatran
Rivaroxaban
Dalteparin

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This is searchable medication report that lists all medications prescribed within a defined duration. Enter the date range and select the drug name to display the results.

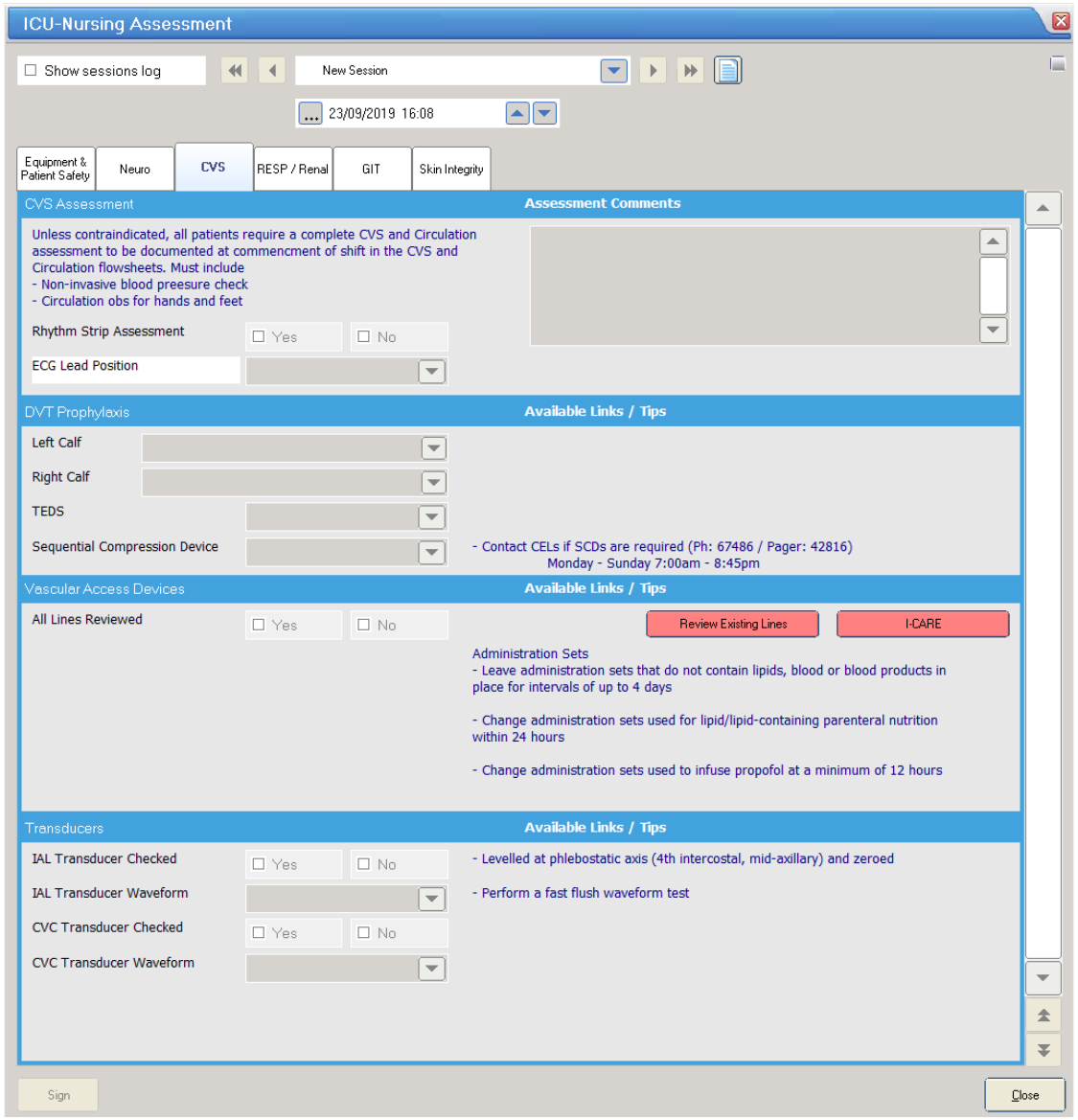
Patient Name	UR	Drug	Route	Quantity	PRN	Freq	Rate	Start	Stop
[redacted]		Heparin Sodium 5000Units/0.2mL	Subcutaneous	5000 Unit		12 hour		08/07/19 08:00	12/07/19 17:32

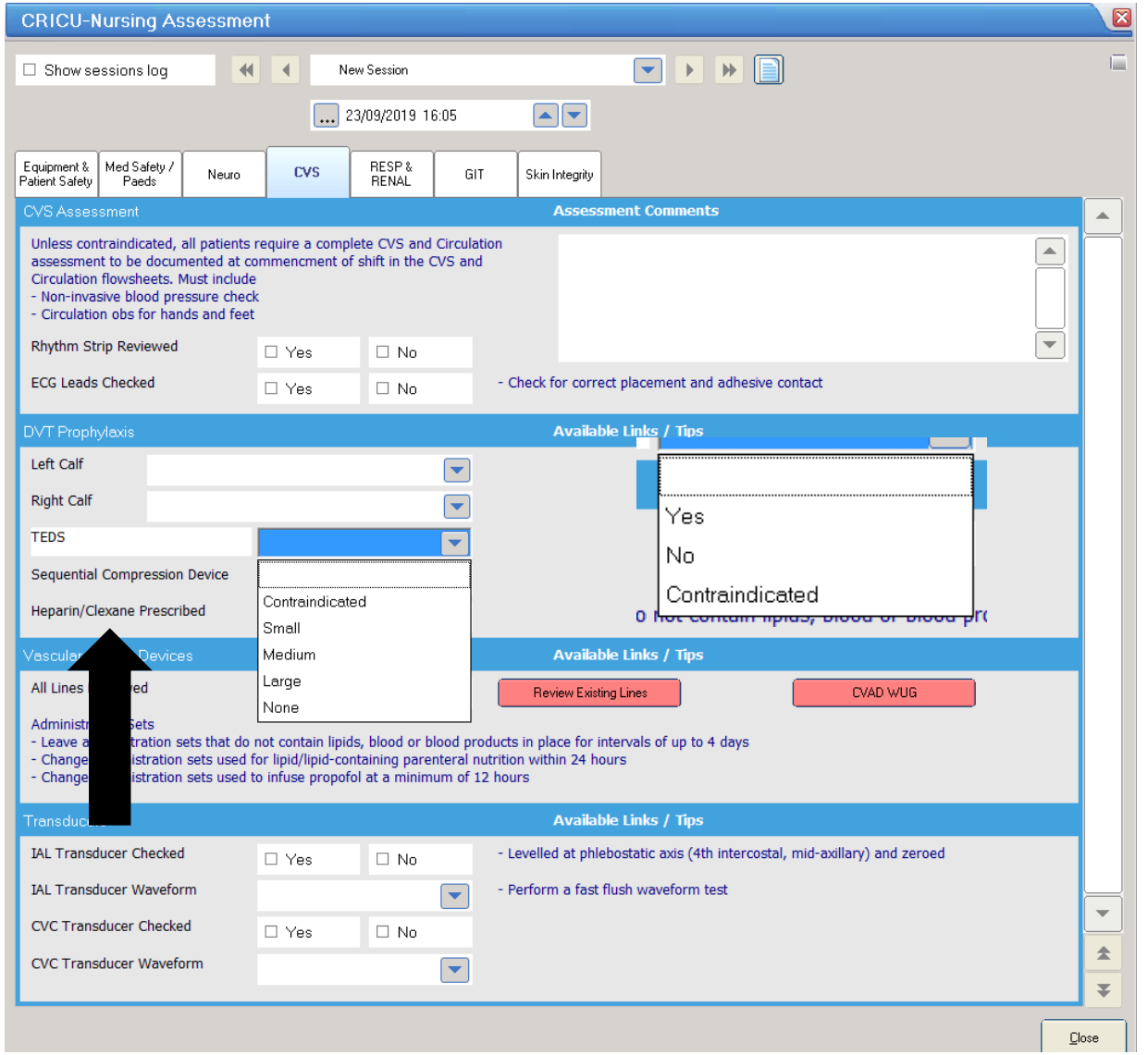
RBWH DEPARTMENT OF INTENSIVE CARE MEDICINE - Searchable Medication Report

This is searchable medication report that lists all medications prescribed within a defined duration. Enter the date range and select the drug name to display the results.

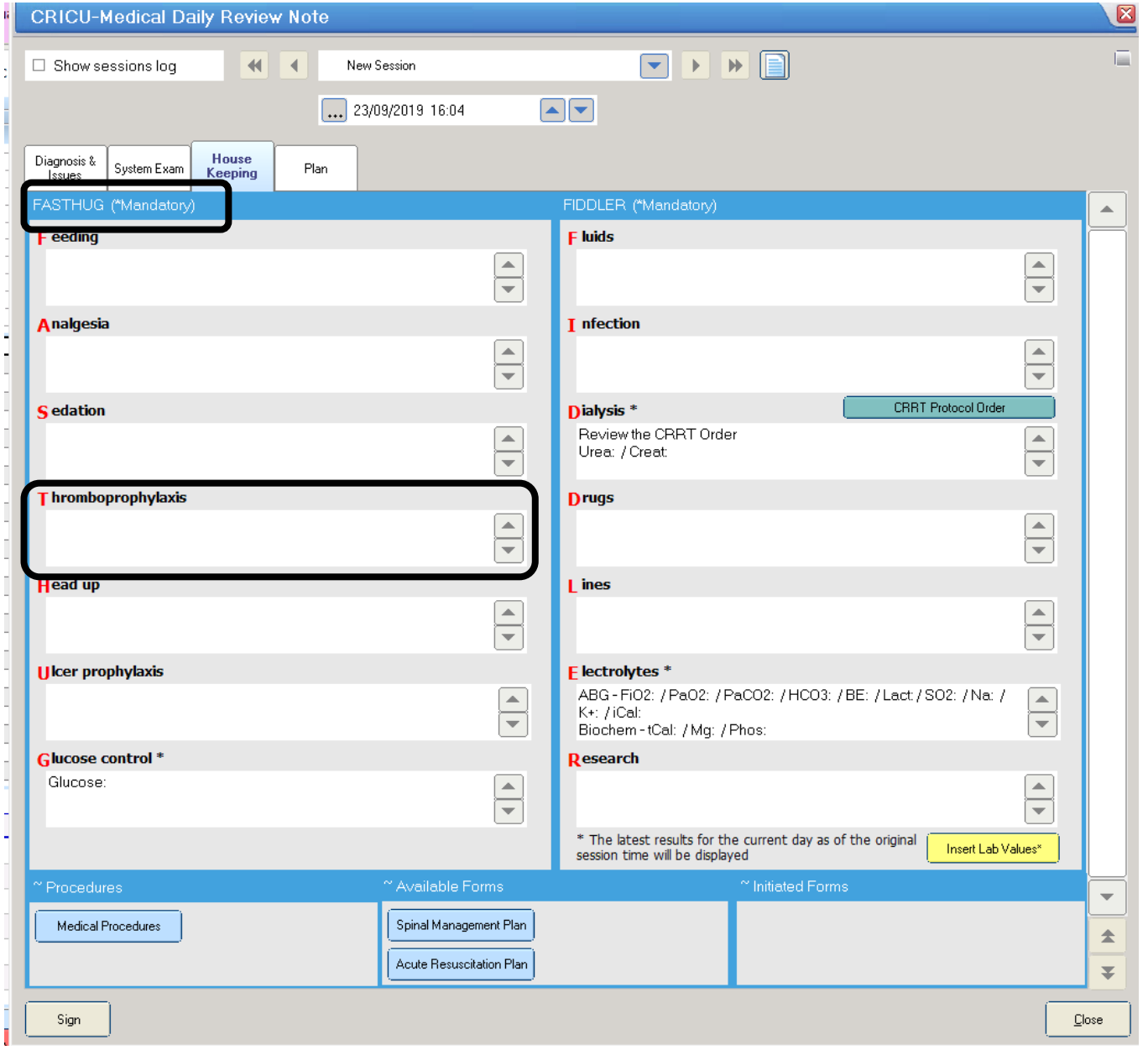
Patient Name	UR	Drug	Route	Quantity	PRN	Freq	Rate	Start	Stop
[redacted]		Enoxaparin inj subcut	Subcutaneous	40 mg		Once		08/07/19 20:00	08/07/19 20:01
		Enoxaparin inj subcut	Subcutaneous	80 mg		12 hour		10/07/19 14:04	11/07/19 09:01
		Enoxaparin inj subcut	Subcutaneous	80 mg		12 hour		13/07/19 08:00	14/07/19 14:26
		Enoxaparin inj subcut	Subcutaneous	40 mg		24 hour		13/07/19 20:00	13/07/19 13:40
		Heparin Sodium 5000Units/0.2mL	Subcutaneous	5000 Unit		Once		10/07/19 00:18	10/07/19 00:19
		Heparin Sodium 5000Units/0.2mL	Subcutaneous	5000 Unit		Once		10/07/19 02:10	10/07/19 02:11

Report created by: CIS Team @ 19/09/2018 08:30 |Dect

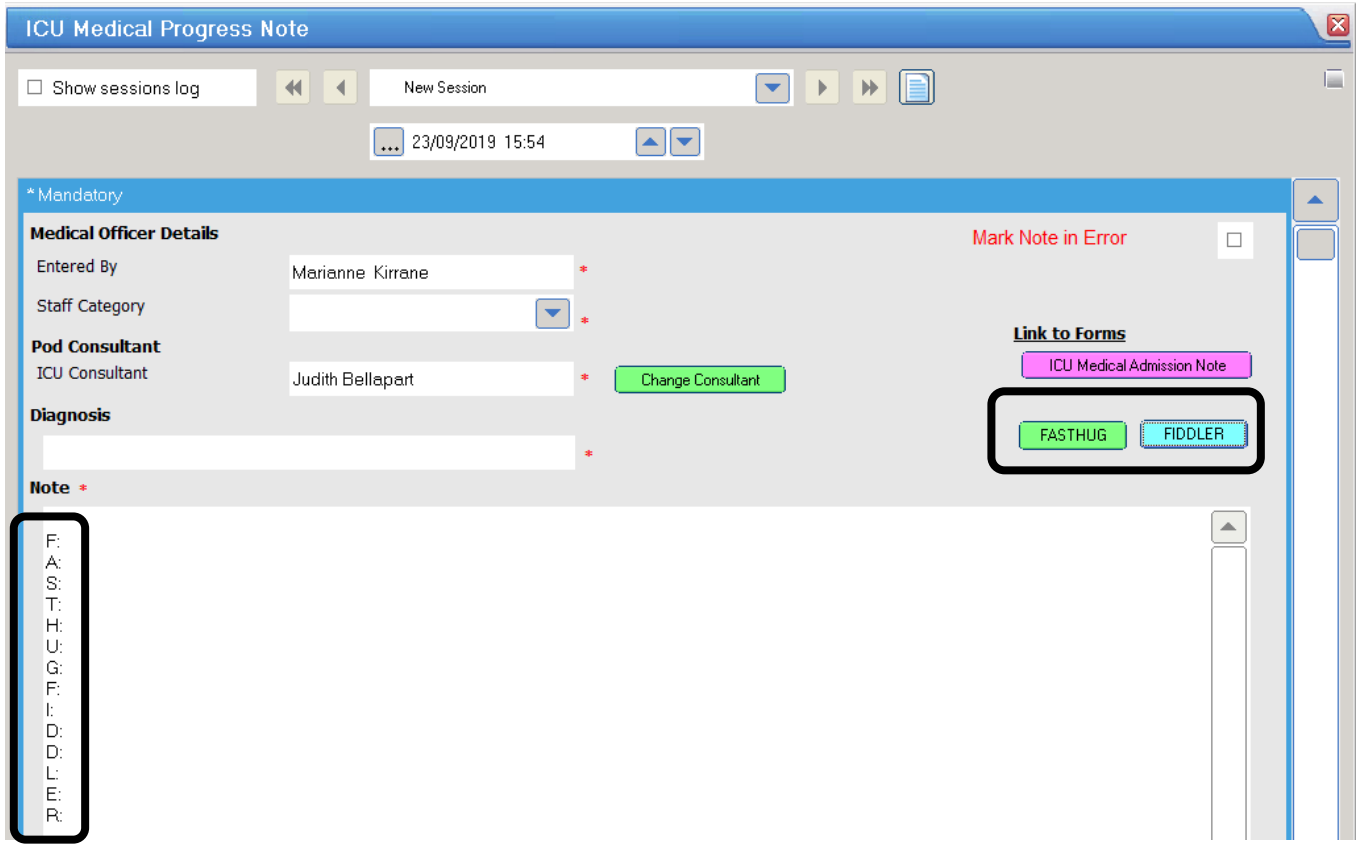

ICU-Nursing Assessment
Show sessions log
New Session
23/09/2019 16:08
Equipment & Patient Safety
Neuro
CVS
RESP / Renal
GIT
Skin Integrity
CVS Assessment
Assessment Comments
Unless contraindicated, all patients require a complete CVS and Circulation assessment to be documented at commencment of shift in the CVS and Circulation flowsheets. Must include
- Non-invasive blood preesure check
- Circulation obs for hands and feet
Rhythm Strip Assessment
Yes
No
ECG Lead Position
DVT Prophylaxis
Available Links / Tips
Left Calf
Right Calf
TEDS
Sequential Compression Device
- Contact CELs if SCDs are required (Ph: 67486 / Pager: 42816)
Monday - Sunday 7:00am - 8:45pm
Vascular Access Devices
Available Links / Tips
All Lines Reviewed
Yes
No
Review Existing Lines
I-CARE
Administration Sets
- Leave administration sets that do not contain lipids, blood or blood products in place for intervals of up to 4 days
- Change administration sets used for lipid/lipid-containing parenteral nutrition within 24 hours
- Change administration sets used to infuse propofol at a minimum of 12 hours
Transducers
Available Links / Tips
IAL Transducer Checked
Yes
No
- Levelled at phlebostatic axis (4th intercostal, mid-axillary) and zeroed
IAL Transducer Waveform
- Perform a fast flush waveform test
CVC Transducer Checked
Yes
No
CVC Transducer Waveform
Sign
Close


CRICU-Nursing Assessment
Show sessions log
New Session
23/09/2019 16:05
Equipment & Patient Safety
Med Safety / Paeds
Neuro
CVS
RESP & RENAL
GIT
Skin Integrity
CVS Assessment
Assessment Comments
Unless contraindicated, all patients require a complete CVS and Circulation assessment to be documented at commencment of shift in the CVS and Circulation flowsheets. Must include
- Non-invasive blood pressure check
- Circulation obs for hands and feet
Rhythm Strip Reviewed
Yes
No
ECG Leads Checked
Yes
No
- Check for correct placement and adhesive contact
DVT Prophylaxis
Available Links / Tips
Left Calf
Right Calf
TEDS
Sequential Compression Device
Heparin/Clexane Prescribed
Contraindicated
Small
Medium
Large
None
Yes
No
Contraindicated
Available Links / Tips
Review Existing Lines
CVAD WUG
- Leave a
- Change
- Change
Available Links / Tips
IAL Transducer Checked
Yes
No
- Levelled at phlebostatic axis (4th intercostal, mid-axillary) and zeroed
IAL Transducer Waveform
- Perform a fast flush waveform test
CVC Transducer Checked
Yes
No
CVC Transducer Waveform
Close

Forms with free text fields



Text templates



Current Qld MV config doesn't support meta-tags

Age and Ageing 2019; **48:** 285–290
doi: 10.1093/ageing/afy177
Published electronically 5 November 2018

The use of an electronic health record system reduces errors in the National Hip Fracture Database

JOHN E. LAWRENCE[1], DUNCAN CUNDALL-CURRY[1], MAX E. STEWART[2], DANIEL M. FOUNTAIN[3], CHRISTOPHER R. GOODING[1]

Open access Original research

BMJ Health & Care Informatics

Small interface changes have dramatic impacts: how mandatory fields in electronic medical records increased pertussis vaccination rates in Australian obstetric patients

Roberto Orefice,[1] Julie A Quinlivan[2,3]

BMJ Health Care Inform: first published as 10.1136/

RESEARCH LETTER

Standardized reporting templates with mandatory reporting fields and "pick-list" options improve use of Prostate Imaging and Data Reporting System version 2 in clinical practice: A plan-do-study-act analysis

Kevin Moran, MD[1]; Rodney H. Breau, MD[2]; Ilias Cagiannos, MD[2]; Luke T. Lavallée, MD[2]; Christopher Morash, MD[2]; Joseph O'Sullivan, MD[1]; Nicola Schieda, MD[1]

Technology, Computing, and Simulation
Section Editor: Jeffrey M. Feldman

An Observational Study of Anesthesia Record Completeness Using an Anesthesia Information Management System

William D. Driscoll, MA

Mary Ann Columbia, RN

Robert A. Peterfreund, MD, PhD

Evaluation of a Mandatory Quality Assurance Data Capture in Anesthesia: A Secure Electronic System to Capture Quality Assurance Information Linked to an Automated Anesthesia Record

Robert A. Peterfreund, MD, PhD, William D. Driscoll, MA, John L. Walsh, MD, Aparna Subramanian, BE, Shaji Anupama, BTech, Melissa Weaver, BA, Theresa Morris, RN, BSN, Sarah Arnholz, JD, Hui Zheng, PhD, Eric T. Pierce, MD, PhD, and Stephen F. Spring, BA

But...

T hromboprophylaxis

Yes

T hromboprophylaxis

.

T hromboprophylaxis

C-I

T hromboprophylaxis

Reviewed

GARBAGE IN ... GARBAGE OUT

Published in final edited form as:

J Med Syst. 2017 May ; 41(5): 75. doi:10.1007/s10916-017-0716-5.

Structured Data Entry in the Electronic Medical Record: Perspectives of Pediatric Specialty Physicians and Surgeons

Ruth A. Bush, PhD, MPH,
University of San Diego: Beyster Institute for Nursing Research, Rady Children's Hospital: Clinical Informatics

Cynthia L. Kuelbs, MD,
University of California, San Diego: Department of Pediatrics

Julie Ryu, MD,
University of California, San Diego: Department of Pediatrics

Wen Jian, MD, and
University of California, San Diego: Department of Surgery

George J. Chiang, MD
Rady Children's Institute of Genomic Medicine

JAMA Network | Open™

Original Investigation | Health Informatics

Association of Electronic Health Record Design and Use Factors With Clinician Stress and Burnout

Philip J. Kroth, MD, MS; Nancy Morioka-Douglas, MD; Sharry Veres, MD; Stewart Babbott, MD; Sara Poplau, BA; Fares Qeadan, PhD; Carolyn Parshall, MPH; Kathryne Corrigan, MS; Mark Linzer, MD

VIEWPOINT

The Rise of the Medical Scribe Industry
Implications for the Advancement of Electronic Health Records

George A. Gellert, MD, MPH, MPA
Department of Health Informatics, CHRISTUS Health, San Antonio, Texas.

Ricardo Ramirez, LVN
Department of Health Informatics, CHRISTUS Health, San Antonio, Texas.

S. Luke Webster, MD
Department of Health Informatics, CHRISTUS Health, Dallas, Texas.

ORIGINAL INVESTIGATION

HEALTH CARE REFORM

Unintended Effects of a Computerized Physician Order Entry Nearly Hard-Stop Alert to Prevent a Drug Interaction

A Randomized Controlled Trial

Brian L. Strom, MD, MPH; Rita Schinnar, MPA; Faten Aberra, MD, MSCE; Warren Bilker, PhD; Sean Hennessy, PharmD, PhD; Charles E. Leonard, PharmD; Eric Pifer, MD

Does it matter?

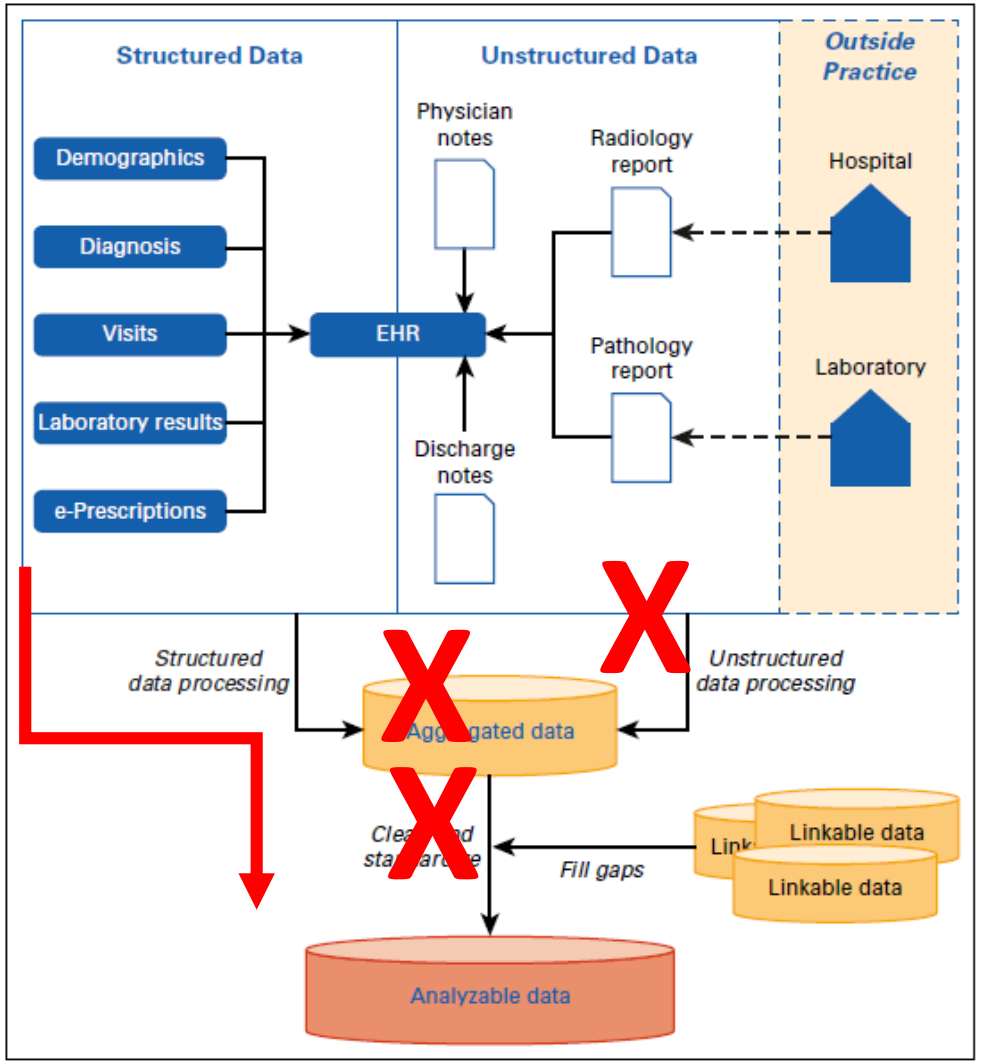


Fig 1. Process for converting electronic health record (EHR) content into analyzable data.

Use of Electronic Health Record Data for Quality Reporting

Amy P. Abernethy, James Gippetti, Rohit Parulkar, and Cindy Revol

Volume 13 / Issue 8 / August 2017 ▪ Journal of Oncology Practice

Data analytics

Diagnostic analytics

Is defined by Gartn
as "a form
adva
data
tent" to
determine why a
health outcome
happened.

WHY MORE PES?

Predictive analytics

When healthcare professionals use machine learning to analyse patient data in order to determine possible patient outcomes.

Prescriptive analytics

Uses machine learning algorithms to perform comprehensive analyses of patient data to improve the quality of patient management

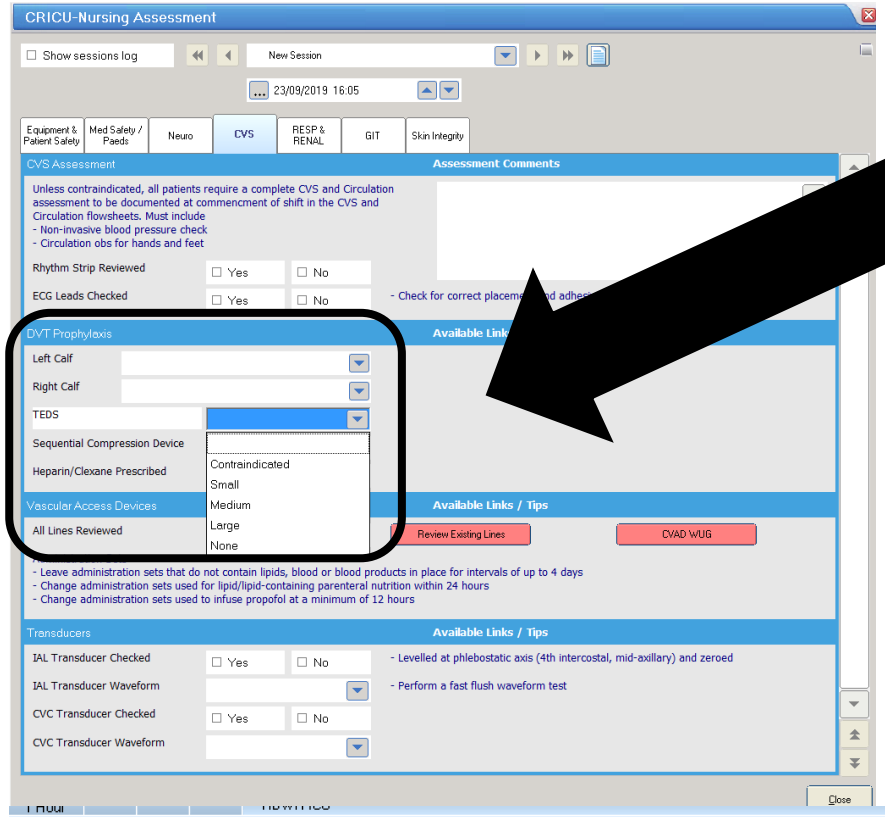
Case Vignette

Need to correlate

- Presence or absence of mechanical prophylaxis
- Presence or absence of chemical prophylaxis

AND

- Reason for absence of mechanical prophylaxis
- Reason for absence of chemical prophylaxis

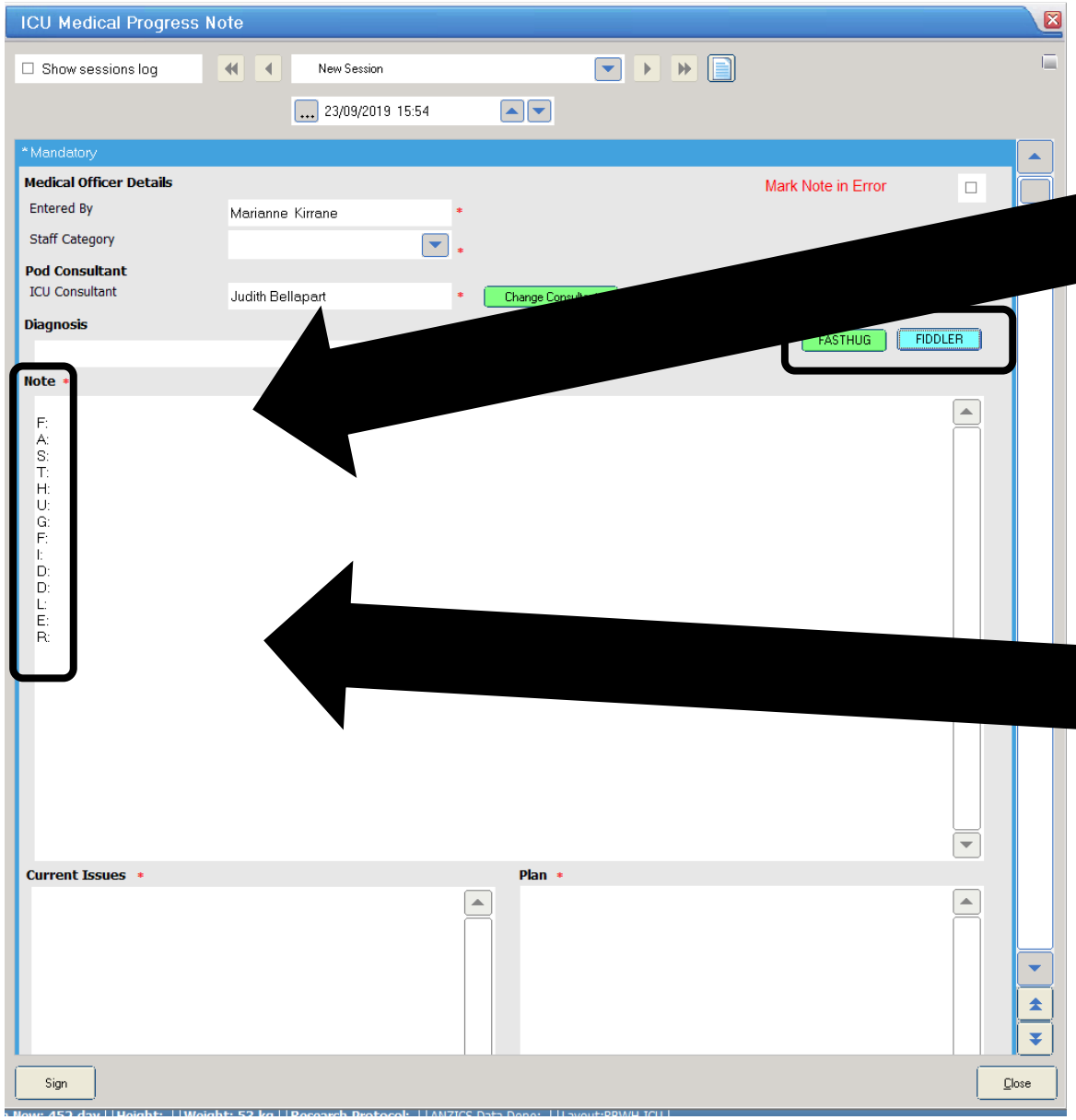


Presence or absence of mechanical prophylaxis

Presence or absence of chemical prophylaxis

Current Medication Orders **(See MedChart for Once Orders)**

Menu b →	PRN flag	Orderable	Z-Drug Name	Quantity	Frequency	Route	Dose	Rate	Solution volume	Solution	Infuse over	Start date & time	Stop
		Compound Sodium Lactate 1000mL (Hartmann's)		1000 mL	Continuous	Intravenous		50 mL/hour			20 hour	27/07/2018 09:52	
		FentaNYL inj		1000 microg	Continuous	Intravenous	10 microg/hour	1 mL/hour	100 mL	Sodium Chloride 0.9%	100 hour	05/09/2018 15:06	
	PRN	FentaNYL inj		25 microg	every 15 min	Intravenous			2.5 mL	Solution		27/07/2018 09:54	
		Furosemide (Frusemide) inj		60 mg	Continuous	Intravenous	3 mg/hour	3 mL/hour	60 mL	Sodium Chloride 0.9%	20 hour	07/09/2019 07:03	
		Heparin Sodium 5000Units/0.2mL		5000 Unit	every 12 hour	Subcutaneous						23/09/2019 15:33	
	PRN	Metoclopramide inj		20 mg	every 8 hour	Intravenous			4 mL	Solution		08/10/2018 09:09	
		NORadrenaline inj		6 mg	Continuous	Central Ven →	2 microg/min	2 mL/hour	100 mL	Glucose 5%	50 hour	07/09/2019 07:04	
		Ondansetron inj		4 mg	every 8 hour	Intravenous			2 mL	Solution		05/09/2018 15:04	
	PRN	Paracetamol inj		1000 mg	every 6 hour	Intravenous			100 mL	Solution		07/09/2019 06:59	
		Z-Drug IV Fluid		1000 mL	Continuous	Intravenous		50 mL/hour			20 hour	27/07/2018 09:56	



Presence or absence of mechanical prophylaxis

Presence or absence of chemical prophylaxis

Reason for absence of mechanical prophylaxis

Reason for absence of chemical prophylaxis

Case Vignette

Need to correlate

- Presence or absence of ...nical prophylaxis
- Presence o... of chemical prophylaxis

STRUCTURED

AND

- Reason for absence ...anical prophylaxis
- Reason f... of chemical prophylaxis

UNSTRUCTURED AND NOT MANDATORY

No mandatory structured field

= unstructured data

= no reporting or extraction capability

= failure of EMR

Mandatory structured field

= clinician burnout

= poor quality data

= failure of EMR

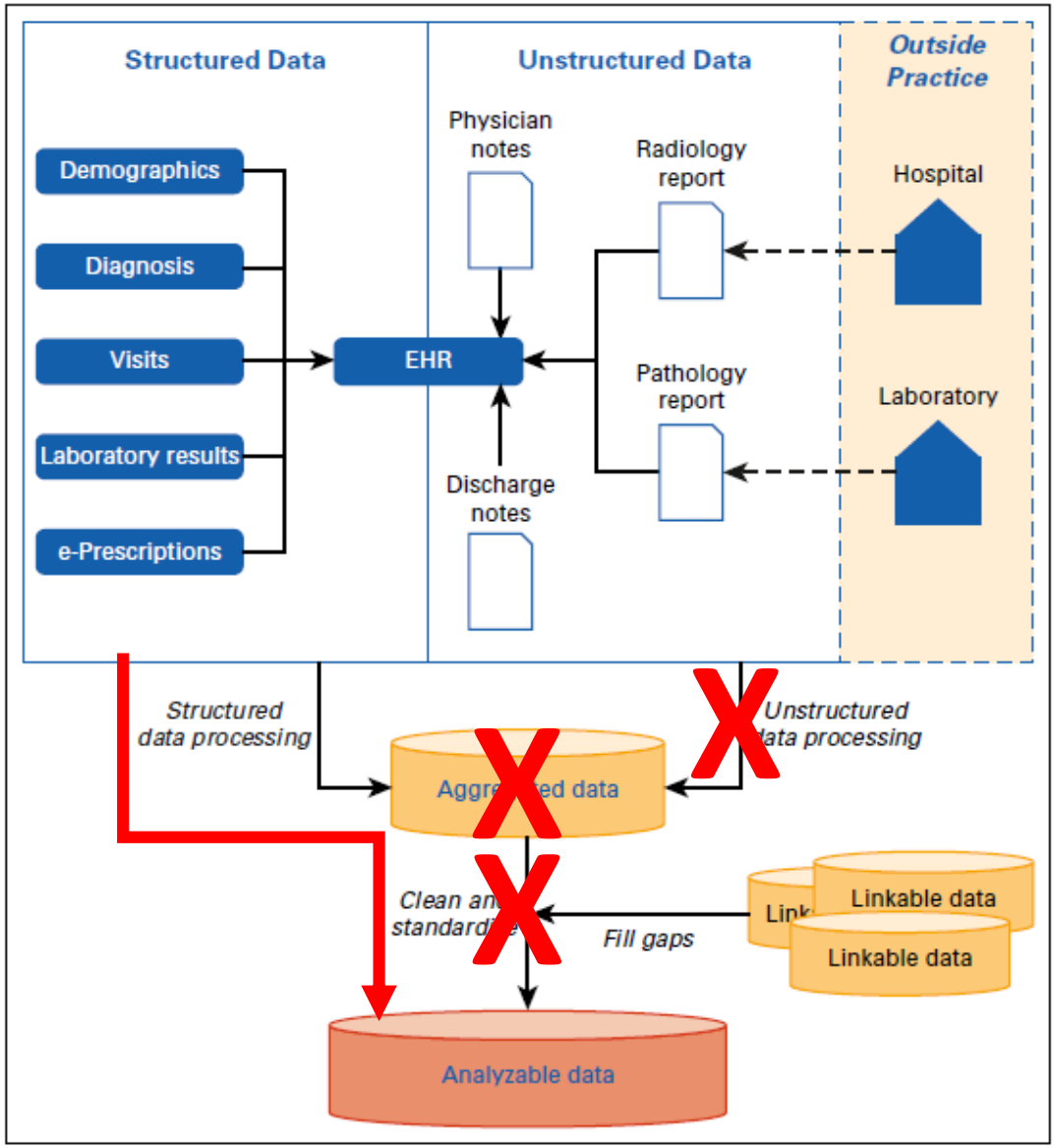
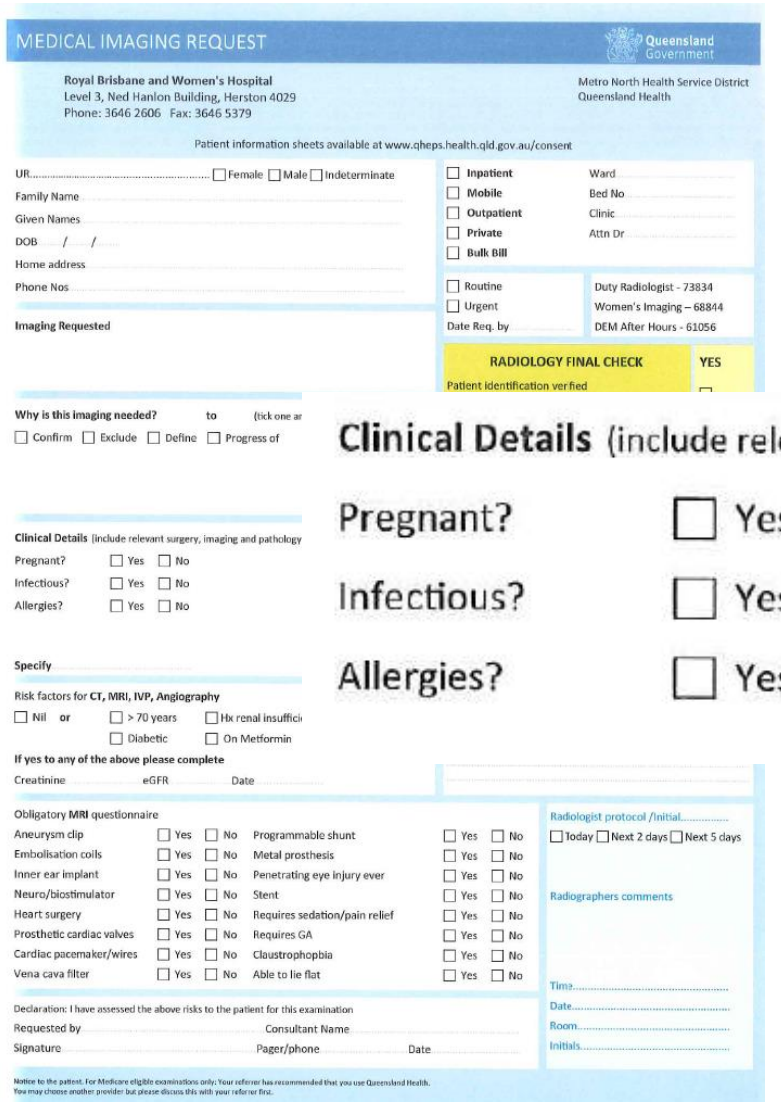


Fig 1. Process for converting electronic health record (EHR) content into analyzable data.

So how do we manage on paper?


MEDICAL IMAGING REQUEST

Queensland Government

Royal Brisbane and Women's Hospital
Level 3, Ned Hanlon Building, Herston 4029
Phone: 3646 2606 Fax: 3646 5379

Metro North Health Service District
Queensland Health

Patient information sheets available at www.qheps.health.qld.gov.au/consent

UR..... ☐ Female ☐ Male ☐ Indeterminate
Family Name
Given Names
DOB / /
Home address
Phone Nos

☐ Inpatient Ward
☐ Mobile Bed No
☐ Outpatient Clinic
☐ Private Attn Dr
☐ Bulk Bill

☐ Routine
☐ Urgent
Date Req. by

Duty Radiologist - 73834
Women's Imaging – 68844
DEM After Hours - 61056

Imaging Requested

RADIOLOGY FINAL CHECK YES
Patient identification verified

Why is this imaging needed? to (tick one ar
☐ Confirm ☐ Exclude ☐ Define ☐ Progress of

Clinical Details (include relevant surgery, imaging and pathology
Pregnant? ☐ Yes ☐ No
Infectious? ☐ Yes ☐ No
Allergies? ☐ Yes ☐ No

Specify

Risk factors for CT, MRI, IVP, Angiography
☐ Nil or ☐ > 70 years ☐ Hx renal insuffici
☐ Diabetic ☐ On Metformin

If yes to any of the above please complete
Creatinine eGFR Date

Obligatory MRI questionnaire

Aneurysm clip	☐ Yes	☐ No	Programmable shunt	☐ Yes	☐ No
Embolisation coils	☐ Yes	☐ No	Metal prosthesis	☐ Yes	☐ No
Inner ear implant	☐ Yes	☐ No	Penetrating eye injury ever	☐ Yes	☐ No
Neuro/biostimulator	☐ Yes	☐ No	Stent	☐ Yes	☐ No
Heart surgery	☐ Yes	☐ No	Requires sedation/pain relief	☐ Yes	☐ No
Prosthetic cardiac valves	☐ Yes	☐ No	Requires GA	☐ Yes	☐ No
Cardiac pacemaker/wires	☐ Yes	☐ No	Claustrophobia	☐ Yes	☐ No
Vena cava filter	☐ Yes	☐ No	Able to lie flat	☐ Yes	☐ No

Radiologist protocol /Initial.....
☐ Today ☐ Next 2 days ☐ Next 5 days

Radiographers comments

Time.....
Date.....
Room.....
Initials.....

Declaration: I have assessed the above risks to the patient for this examination
Requested by Consultant Name
Signature Pager/phone Date

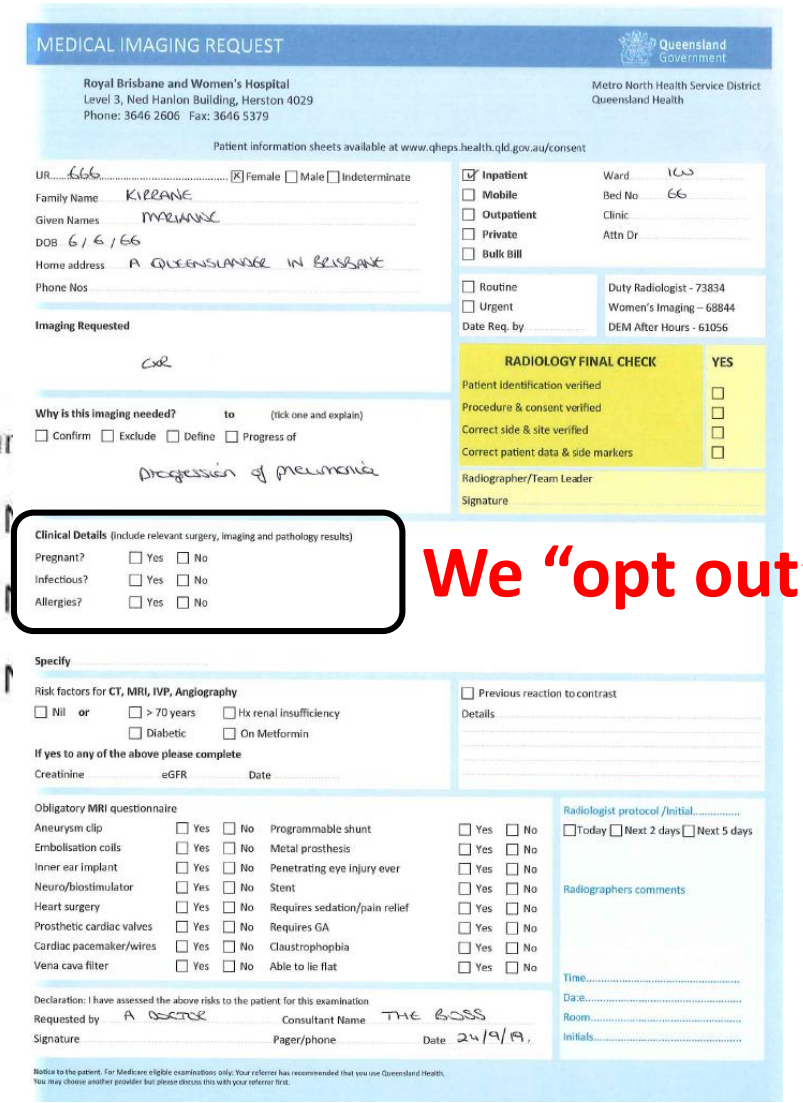
Notice to the patient. For Medicare eligible examinations only: Your referrer has recommended that you use Queensland Health. You may choose another provider but please discuss this with your referrer first.

Clinical Details (include relevant sur

Pregnant? ☐ Yes ☐ N

Infectious? ☐ Yes ☐ N

Allergies? ☐ Yes ☐ N


MEDICAL IMAGING REQUEST

Queensland Government

Royal Brisbane and Women's Hospital
Level 3, Ned Hanlon Building, Herston 4029
Phone: 3646 2606 Fax: 3646 5379

Metro North Health Service District
Queensland Health

Patient information sheets available at www.qheps.health.qld.gov.au/consent

UR 666 ☒ Female ☐ Male ☐ Indeterminate
Family Name KIRRANE
Given Names MARIANNE
DOB 6 / 6 / 66
Home address A QUEENSLANDER IN BRISBANE
Phone Nos

☑ Inpatient Ward ICU
☐ Mobile Bed No 66
☐ Outpatient Clinic
☐ Private Attn Dr
☐ Bulk Bill

☐ Routine
☐ Urgent
Date Req. by

Duty Radiologist - 73834
Women's Imaging – 68844
DEM After Hours - 61056

Imaging Requested

CXR

RADIOLOGY FINAL CHECK YES
Patient identification verified ☐
Procedure & consent verified ☐
Correct side & site verified ☐
Correct patient data & side markers ☐

Radiographer/Team Leader
Signature

Why is this imaging needed? to (tick one and explain)
☐ Confirm ☐ Exclude ☐ Define ☐ Progress of

Progression of pneumonia

Clinical Details (include relevant surgery, imaging and pathology results)
Pregnant? ☐ Yes ☐ No
Infectious? ☐ Yes ☐ No
Allergies? ☐ Yes ☐ No

Specify

Risk factors for CT, MRI, IVP, Angiography
☐ Nil or ☐ > 70 years ☐ Hx renal insufficiency
☐ Diabetic ☐ On Metformin

If yes to any of the above please complete
Creatinine eGFR Date

☐ Previous reaction to contrast
Details

Obligatory MRI questionnaire

Aneurysm clip	☐ Yes	☐ No	Programmable shunt	☐ Yes	☐ No
Embolisation coils	☐ Yes	☐ No	Metal prosthesis	☐ Yes	☐ No
Inner ear implant	☐ Yes	☐ No	Penetrating eye injury ever	☐ Yes	☐ No
Neuro/biostimulator	☐ Yes	☐ No	Stent	☐ Yes	☐ No
Heart surgery	☐ Yes	☐ No	Requires sedation/pain relief	☐ Yes	☐ No
Prosthetic cardiac valves	☐ Yes	☐ No	Requires GA	☐ Yes	☐ No
Cardiac pacemaker/wires	☐ Yes	☐ No	Claustrophobia	☐ Yes	☐ No
Vena cava filter	☐ Yes	☐ No	Able to lie flat	☐ Yes	☐ No

Radiologist protocol /Initial.....
☐ Today ☐ Next 2 days ☐ Next 5 days

Radiographers comments

Time.....
Date.....
Room.....
Initials.....

Declaration: I have assessed the above risks to the patient for this examination
Requested by A DOCTOR Consultant Name THE BOSS
Signature Pager/phone Date 24/9/19

Notice to the patient. For Medicare eligible examinations only: Your referrer has recommended that you use Queensland Health. You may choose another provider but please discuss this with your referrer first.

We "opt out"

6 ways to improve 'required fields'

1 Establish a high criteria to make a field required

2 Anticipated Expiration Date

3 Create an ‘out-out’ and ‘skip’ any required field option

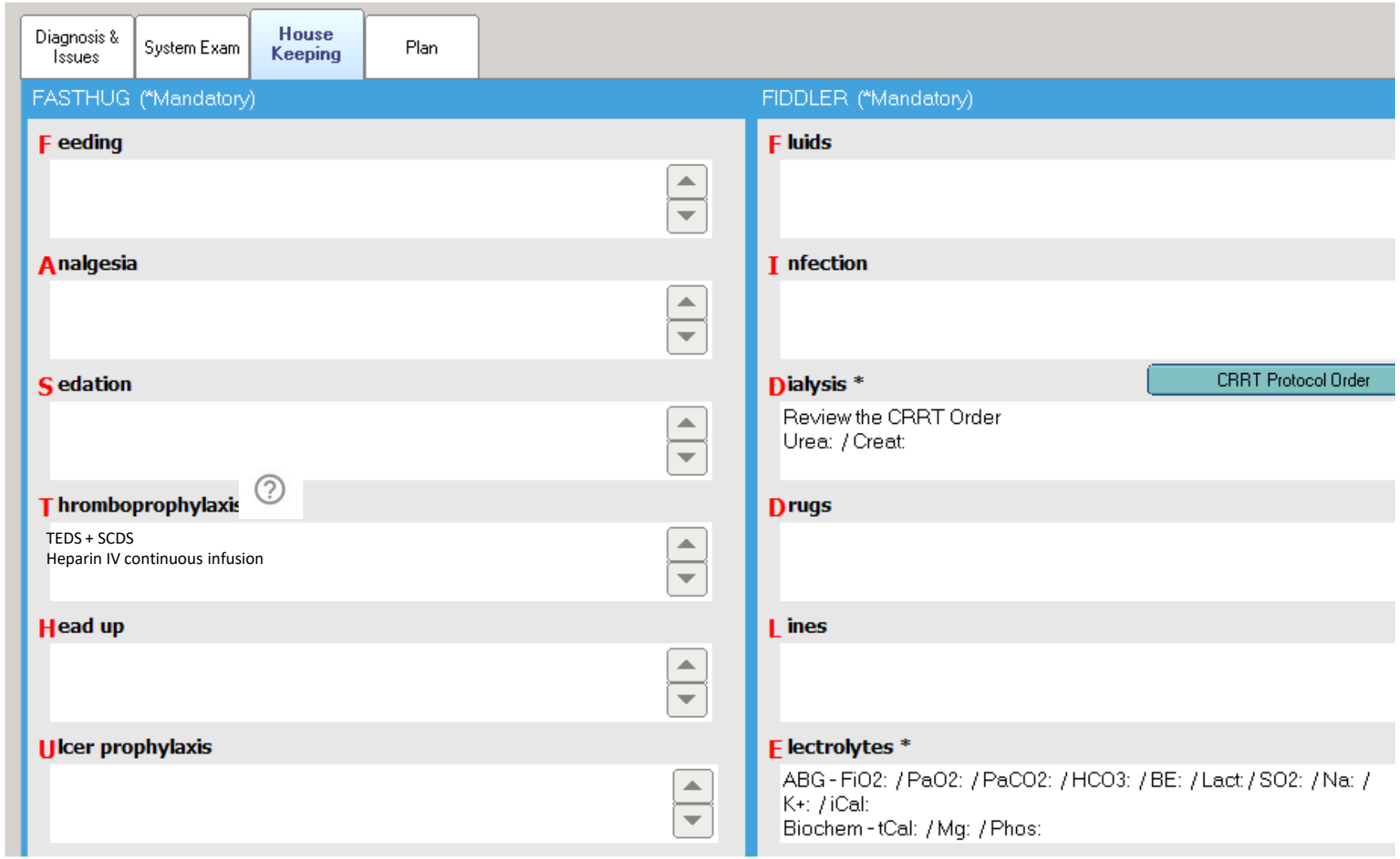
- but track its use

4 Show the ‘justification’ for the required field

5 Be open to feedback

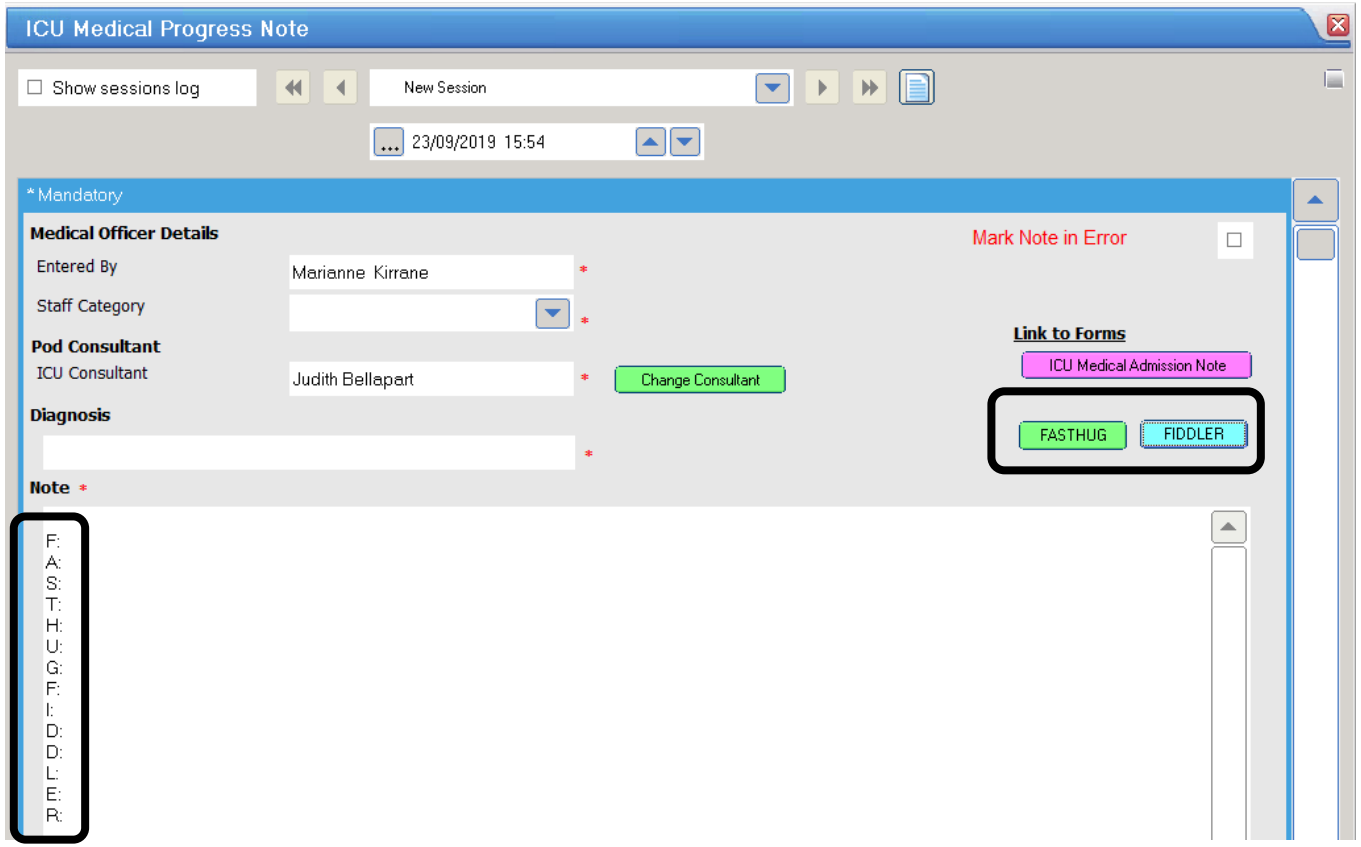
6 Auto-populate fields

Smarter forms



- Auto-population
  - Nursing assessment
  - Medication orders
- Education
- Pop-ups
  - with opt-out
  - and reminder

Templates



- Meta-tags
- Education
- Pop-ups
  - with opt-out
  - and reminder

Pop-ups

Discern: Open Chart - TESTMV, MIA (2 of 2)

Cerner

** DISCERN ALERT - INCOMPLETE VTE PROPHYLAXIS **

Please review patient's VTE Prophylaxis Adult Powerplan

Complete the following items on the VTE Prophylaxis powerplan:

- VTE Mechanical Prophylaxis or VTE Mechanical Prophylaxis WITHHOLD

- VTE Pharmacological Prophylaxis or VTE Pharmacological Prophylaxis WITHHOLD

OK

Emergency save
Reminder will pop up every time chart is accessed

Unknown info
Reminder in
12h ☐
24h ☐
Next chart access ☐

INTERNATIONAL JOURNAL OF MEDICAL INFORMATICS 81 (2012) 173–181

ELSEVIER

journal homepage: www.ijmijournal.com

Record completeness and data concordance in an anesthesia information management system using context-sensitive mandatory data-entry fields

Alexander Avidan, Charles Weissman*

Department of Anesthesiology and Critical Care Medicine, Hadassah-Hebrew University Medical Center, Hebrew University-Hadassah School of Medicine, Jerusalem, Israel

DO WE REALLY NEED THAT MANDATORY DATA FIELD?

YES

Credit: https://www.icomedias.com/en/digital-forms-oekz__trashed/mobile-formulare-oekz/

THE NOW
DIGITISED PAPER

THE FUTURE
SMART FORMS

?