



BED MANAGEMENT, WARD WHITEBOARD & DISCHARGE PLANNING

9 APR 2015

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BED MANAGEMENT & WARD WHITEBOARDS

OVERVIEW

The Epro Bed Management Module provides visibility of current and immediate future bed occupancy across a hospital.

It does this by combining information from a variety of sources (PAS, medical and nursing handover lists, ward whiteboards) to provide real time bed state across a hospital, in a format designed to support the operations and bed managers.

It may be used either as a standalone element fully integrated with the patient administration system or in conjunction with other Epro modules, or linked to external systems.

CURRENT ISSUES

Lack of real-time bed state

Many hospitals currently lack the ability to ascertain their current bed state in real time. Many PAS systems do not have the capacity to store bed information, and if they do it is often poorly used.

Inefficient bed managers

In an attempt to address this, bed managers / operational managers spend a considerable amount of time travelling between wards with clipboards recording the current bed state, as well as expected admissions and discharges.

Lost patients

When a patient moves ward or changes care to a different consultant, this must also be entered manually. This has two consequences it takes time, and may not be recorded promptly creating a risk of 'lost' patients.

PAS bed state inaccurate

Additionally, because PAS systems are commonly updated by clerical staff who may not have complete out of hours cover, even though ward moves are being recorded electronically, this information is not transferred to the PAS on a timely basis, which leads to a drift in the accuracy of the PAS data during out of hours periods.

Poor communication leads to delayed discharges

Ad hoc or unstructured communication on discharge planning data between different disciplines (nursing, social work, physiotherapy, medical, occupational therapy etc.) is a common theme in factors which unnecessarily increase length of stay.

Discharge planning information poorly available to bed managers

There may be much useful information relating to discharge planning contained across multiple separate sources / groups, but there is no easy means for bed managers / operations managers to access this.

- lack of real-time bed state in PAS
- inefficient bed managers
- 'lost' patients
- accuracy of PAS Bed state 'drifts' out of hours
- discharge delays can occur information is not communicated between teams
- discharge planning information not easily available to managers
- CQUIN targets: VTE management/ Senior review
- Inconsistent application of discharge planning practice

CQUIN standards – VTE prevention and Senior Review

Hospitals are now required to demonstrate excellence in the prevention of venous thromboembolisms, and other quality markers such as senior review of emergency admissions etc. Even where this happens consistently, collecting the data to prove it, is often a cumbersome manual process.

Lack of a discharge planning culture

Best practice in patient flow and patient care, dictates that discharge planning should start at (or before) the point of admission. It is an area which crosses many different professional disciplines and it the application of good practice is usually very inconsistent. This is a contributory factor to increased length of stay and avoidable delayed discharges.

BED MANAGEMENT FEATURES IN DETAIL

FEATURE	BENEFIT
Visibility of current bed availability across whole site available with one click.	Saves time both for bed managers who do not need to visit / phone wards to get up to date information and ward staff who are no longer interrupted with requests for information.

Menu ▾

Patients

Tasks

Beds

user Arroyo, Benjamin

log out

patients / users / lists

All ▾

calendar

whiteboard

filter

print

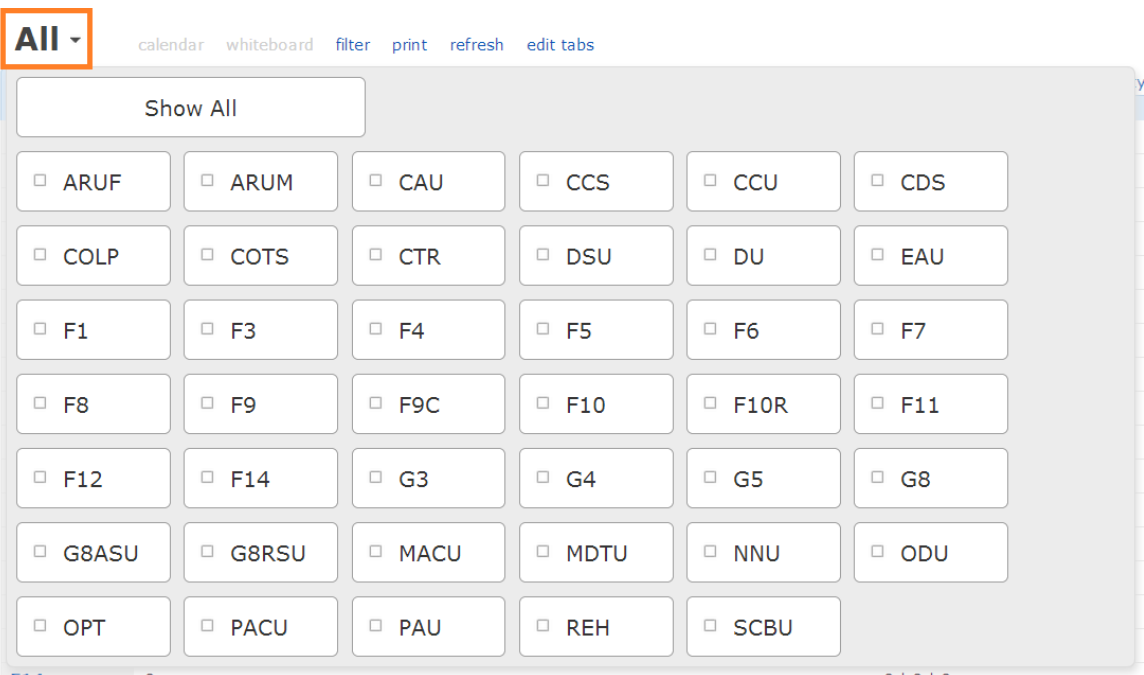
refresh

edit tabs

Bed State	All Beds ⁴	Discharges Toda...	Discharges Tomorro...	Med Fi...	Clinically Sta...	Overstay...	Outli...	Empty ³	63 ms
Ward	Beds	Infected	Patients By Gender	Ward Notes	Total Beds By Gender	PD Today By Gender			
ARUF	35	0	0 0 0		0 0 35	0 0 0			
ARUM	34	0	0 0 0		0 0 34	0 0 0			
CCS	0		0 0 0		0 0 0	0 0 0			
CCU	7	0	1 0 0		0 0 7	0 0 0			
CDS	18	0	2 0 0		0 0 18	0 0 0			
COLP	0		1 0 0		0 0 0	0 0 0			
COTS	0		0 0 0		0 0 0	0 0 0			
CTR	0		1 0 0		0 0 0	0 0 0			
DSU	0		0 0 0		0 0 0	0 0 0			
DU	0		0 0 0		0 0 0	0 0 0			
EAU	27	0	5 5 0		0 0 27	0 0 0			

One click selection of one or more wards

Instant visibility of required information on a per ward basis

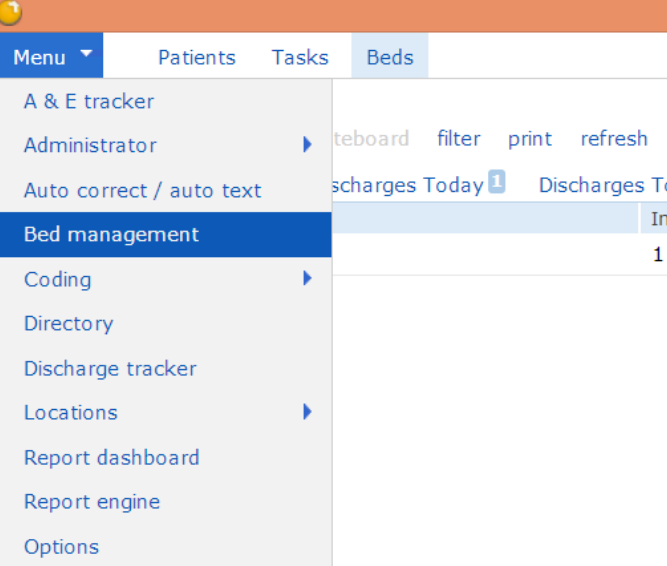


The screenshot shows a web interface for bed management. At the top, there is a navigation bar with a dropdown menu set to 'All'. Below this is a 'Show All' button and a grid of 42 buttons, each representing a different ward or bed type. The buttons are arranged in 7 rows and 6 columns. The first row contains: ARUF, ARUM, CAU, CCS, CCU, CDS. The second row contains: COLP, COTS, CTR, DSU, DU, EAU. The third row contains: F1, F3, F4, F5, F6, F7. The fourth row contains: F8, F9, F9C, F10, F10R, F11. The fifth row contains: F12, F14, G3, G4, G5, G8. The sixth row contains: G8ASU, G8RSU, MACU, MDTU, NNU, ODU. The seventh row contains: OPT, PACU, PAU, REH, SCBU.

Ward and Bed Configuration					
ARUF	ARUM	CAU	CCS	CCU	CDS
COLP	COTS	CTR	DSU	DU	EAU
F1	F3	F4	F5	F6	F7
F8	F9	F9C	F10	F10R	F11
F12	F14	G3	G4	G5	G8
G8ASU	G8RSU	MACU	MDTU	NNU	ODU
OPT	PACU	PAU	REH	SCBU	

Ward and bed configuration can be accessed via the main menu. It is possible to set the number of beds and bays per ward, create new wards and edit existing ones

Individual configuration of layout on a per ward basis.



The screenshot shows the main menu of the system. The 'Menu' dropdown is open, displaying a list of options. The 'Beds' tab is selected in the top navigation bar. The 'Bed management' option is highlighted in the dropdown menu.

- Menu
 - A & E tracker
 - Administrator
 - Auto correct / auto text
 - Bed management**
 - Coding
 - Directory
 - Discharge tracker
 - Locations
 - Report dashboard
 - Report engine
 - Options

The ward configuration can be accessed from the main menu

Ward overview in the configuration tab

Configuration of beds, bays and ward layout

One click on each ward shows a list of patients or graphical whiteboard view.

Drilldown ability saves times in gaining detailed picture of ward activity.

F5 ▾ board Manual handling training - 2pm red team, 230pm blue, 3pm green
Mr Johnson's ward round **11am today** Discharges: **3** today, **4** tomorrow
Care Index: **48** 179 ms

Bed	Patient	Day	PD	MF	Stay Reasons	Nx	DS Status	
1.1	MALONEY, Patrick (Dr) R W	8 / ?	30 Jun AM			C2	not done	planning
1.2	BUTTERWORTH, Delilah (Mrs)	11 / ?	29 Jun ✓	MF+4	1. Awaiting Social Care Assessment 2. Care Home Assessment	A1	written	planning
1.2	MULVANEY, Jason (Mr)	7 / ?	26 Jun		1. Awaiting CT scan 2. Needs TTOs	A3	needed	planning
1.3	WALTERS, Wiliam (Mr) RIP	4 / 4	26 Jun			A1	review	planning
1.4	FALKINGHAM, Todd (Dr) R	13 / ?			1. Biopsy of Liver	C2	not done	planning
1.5	SMITH, Nathan (Mr) E	10 / ?		MF+7		C1	not done	planning

Traditional list view of a ward

F5 ▾ list Manual handling training - 2pm red team, 230pm blue, 3pm green
Mr Johnson's ward round **11am today** Discharges: **1** today, **6** tomorrow
Care Index: **48**

Bay 5		Bay 4	
4 HOWARD, Alan, (Mr) B5 AM ✓ N	3 REINHARD, Kirsten, (Dr) B3 R/V N	4 Empty Bed	3 DAVIS, Samantha, (Ms) C3 AM W
5 LONGSTEAD, Vincent, (Mr) B1 CL 7/? PD??? MF+5 N	2 447d 22h 3m Dirty	5 JOHNSON*, Jasmine, (Miss) A1 AT 7/? Tomorrow AM ✓ MF+5 N	2 VANSTONE, Edith, (Miss) A2 CL 11/? NEWS 9 N
6 PATTON, Jake, (Mr) B3 AW 2/? NEWS 2 N	1 THIMAN, Jack, (Mr) B2 RT 11/? 04 Oct ✓ N	6 GOUGH, Verity, (Mrs) A2 AW 7/? 03 Oct AM N	1 NASS, Betty, (Professor) A1 CL 2/7 06 Oct AM N
Bay 3		Bay 1	
4 Infected	3 TURNER, Jane, (Mrs) B2 RT Today R	4 FALKINGHAM, Todd, (Dr) C2 AW 8/? PD??? N	3 WALTERS, Wiliam, (Mr) A1 RT 2/4 04 Oct AM ✓ R
5 JONES, Roxie, (Miss) 1 RL 3/? Tomorrow N	2 BLOGGS, Paul (Mr) Leave	5 Empty Bed	2 MULVANEY, Jason, (Mr) A3 AW 12/? Tomorrow R
6 SMITH, Nathan, (Mr) C1 R E	1 EDWARDS, Justin, (Dr) C1	6 Empty Bed	1 MALONEY, Patrick, (Dr) C2

Discharge Transfer

A2 B4 C? Nursing Team / Dependency TBS To Be Seen ● Marker 1
R/V Review Required ● Marker 2
MF+x Medically Fit for x days ⚠ Other alerts ● Marker 3

Board view of a ward

Total number of occupied beds for each ward, organised by male, female and individual rooms.

Instant visibility of total current hospital bed capacity.

Shows number of empty beds (organised by male, female

Empty beds become visible as soon as they are available

and individuals room, for each ward.	rather than when they are 'declared' by each ward.
Planned discharges for today and tomorrow are shown for each ward. With one click individual patients can be identified by name.	Early visibility of planned discharges gives warning of impending bed crises, gives opportunities to increase planned admissions.
F5 ▾ list Manual handling training - 2pm red team, 230pm blue, 3pm green Mr Johnson's ward round 11am today Discharges: 3 today, 4 tomorrow Care Index: 48 Bay 5 4 HOWARD, B5 Alan AW 12/10 27 Jun AM ✓ 5 LONGSTEAD, B1 Vincent CL 2/? PD??? MF+1 6 PATTON, B3 Jake RV 3 REINHARD, B3 Kirsten RV AW Today 2 BLOGGS, James TCI 1 THIMAN, B2 Jack TBS Bay 4 4 Infected 5 JOHNSON*, A1 Jasmine AT 8/9 28 Jun AM MF+5 6 GOUGH, A2 Verity TBS 3 DAVIS, C3 Samantha AT 5/? 28 Jun 2 VANSTONE, A2 Edith CL 6/? MEWS 9 1 NASS, A1 Betty <i>Tile based graphical view designed for touch screens / whiteboards. The entire range of information is condensed into one view. This fragment shows: ward, bed, notes, planned discharges, care dependency index, individual patients, their alerts, sex, nursing team, nursing care requirements, consultant, day of stay, target stay, planned discharge and status, sick patients, patients needing review, medically fit status, and infected bed and a planned admission...</i>	
Planned admissions (TCI) for each ward for today and tomorrow are shown by sex or requiring side room. One click shows patient names, and another shows clinical details (subject to security).	Allows forward planning of bed state. Bed managers can now plan (re-)allocations informed by clinical information.
Blocked beds are displayed together with the reason such as infection / MRSA / Home leave etc.	Any beds which are blocked can be validated by bed managers who also have availability of when they are likely to become available again based on the reason.

Bay 5		Bay 4	
4 HOWARD, B5 Alan		3 REINHARD, B3 Kirsten RV	4 THIMAN, B2 Jack
AW 14/? 20 Jul ✓		AW 6/? 22 Jul ✓	RT 11/777 23 Jul AM
5 LONGSTEAD, B1 Vincent		2 9d 3h 7m Dirty	5 JOHNSON*, A1 Jasmine
CL 5/? PD???	M-3		AT 11/? 21 Jul AM
6 PATTON, B3 Jake RV		1 Empty Bed	6 GOUGH, A2 Verity
AW 6/? MEWS 2			AW 5/? 22 Jul AM

Beds closed for cleaning are identified and shown across all wards

Bed managers can monitor cleaning times, imminent availability of upcoming beds, and there is increased transparency around 'undeclared' beds.

Ward Notes – bed managers can make free notes on each ward

Allows central visibility of useful or critical information which can be shared between different bed managers or shifts.

Dependency index - ward staff assign a dependency score to each patient and this is summed and compared against the number of staff on each shift giving an indication of the relationship between patient care demands and staffing resources.

Bed managers can assign patients to wards that have the best staffing ratio thus increasing patient safety and reducing staff overwork. Long term dependency scores can be tracked to monitor ward health.

Whiteboard Notes Any notes written by ward staff on whiteboards can be displayed in one screen giving visibility to bed managers.

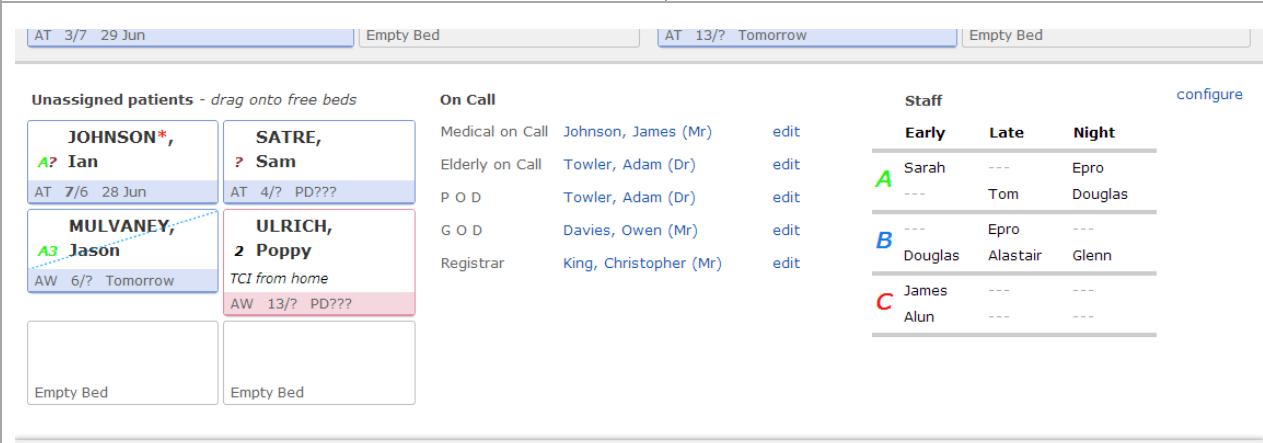
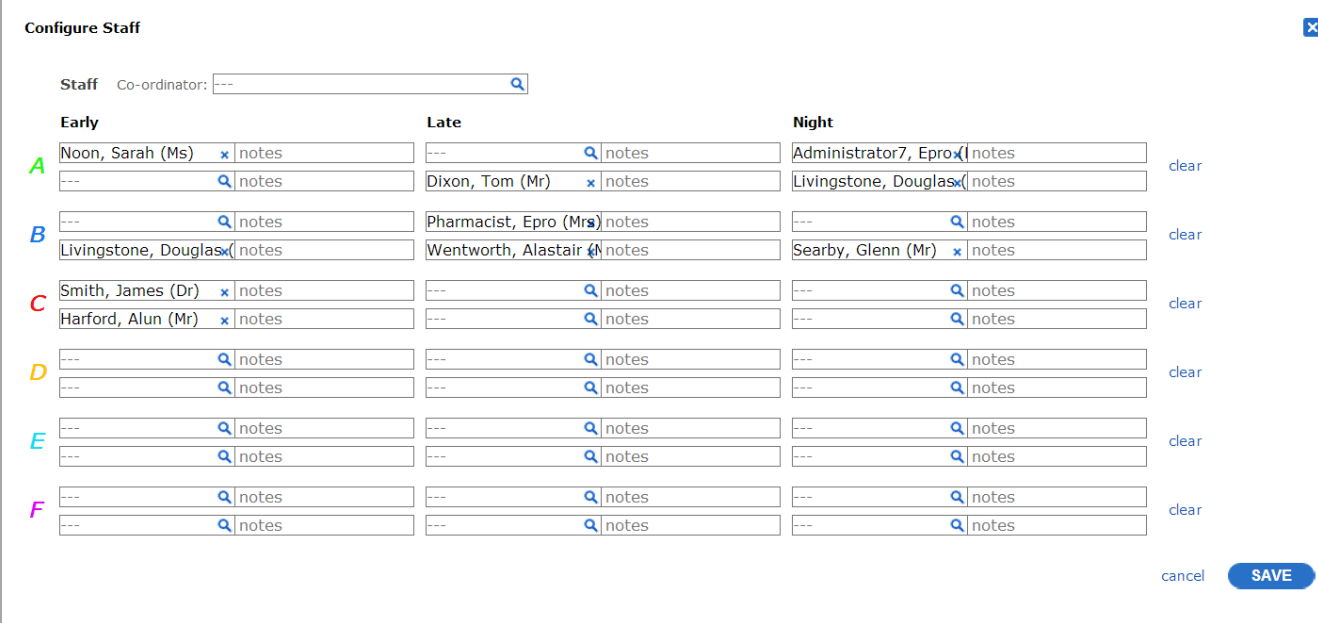
Improved communication between wards and bed managers.

Bay 5		Bay 4	
4 Alan B5		3 Kirsten B3 RV	4 Infected
AW 12/10 27 Jun AM ✓		AW Today	
5 Vincent B1		2 James	5 Jasmine* A1

Modified ward whiteboard view showing forenames only and restricted alert information

Partial hiding of information

If whiteboards are visible from public areas, it may be

	desirable to hide patient details.
 The screenshot displays the 'Bed Management' interface. At the top, there are tabs for 'AT 3/7 29 Jun' and 'AT 13/? Tomorrow'. Below these, the 'Unassigned patients' section shows four patient cards: JOHNSON*, Ian (AT 7/6 28 Jun), SATRE, Sam (AT 4/? PD???), MULVANEY, Jason (AW 6/? Tomorrow), and ULRICH, Poppy (TCI from home, AW 13/? PD???). The 'On Call' section lists medical, elderly, P O D, G O D, and Registrar staff with their names and edit links. The 'Staff' section shows a configuration table for Early, Late, and Night shifts, with staff names and edit links. A 'configure' link is also present.	
Space for unassigned patients	Can handle imminent patients who are expected on a ward but don't yet have a bed.
On call rota display	Helps ensure right person is called when escalation is needed.
Ward staff displayed together with caring team for each patient.	Helps visiting medical staff to identify the nursing caring for each patient.
Staff configuration on a per ward basis	Helps visiting medical staff to identify the nursing caring for each ward
 The screenshot shows the 'Configure Staff' interface. It has a search bar for 'Staff Co-ordinator'. Below, there are three columns: 'Early', 'Late', and 'Night'. Each column contains a list of staff members with their names, roles, and edit links. The 'Early' column lists Noon, Sarah (Ms), Dixon, Tom (Mr), Pharmacist, Epro (Mrs), Wentworth, Alastair (Mr), Searby, Glenn (Mr), and Harford, Alun (Mr). The 'Late' column lists Administrator7, Epro, Livingstone, Douglas, and Smith, James (Dr). The 'Night' column lists Harford, Alun (Mr), Smith, James (Dr), Harford, Alun (Mr), and Harford, Alun (Mr). There are 'clear' buttons next to each row. At the bottom, there are 'cancel' and 'SAVE' buttons.	
Whiteboard configuration allows to configure the way patient information is displayed, including name formats,	Helps medical staff to display necessary medical information in the right way

alerts, gender and staffing.

Configure Whiteboard

Name Format: SURNAME, Forename

Alert Display: Full

Marker 1: Marker 1

Marker 2: Marker 2

Marker 3: Marker 3

☒ Display Gender
☐ Display Admission Checklist Markers
☒ Display Staffing

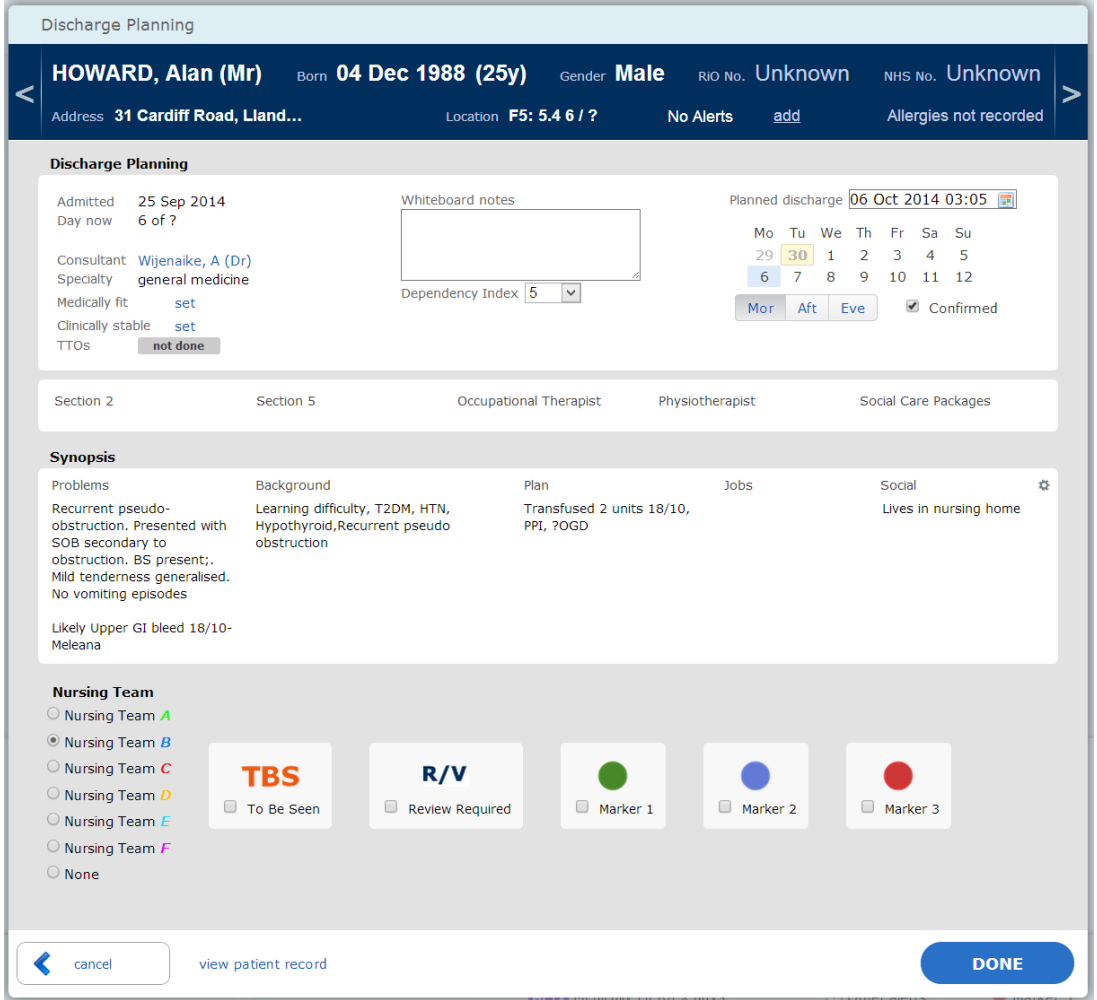
Show / Hide On Call Roles

Shown
☒ Medical on Call
☒ Elderly on Call
☒ P O D
☒ G O D
☒ Registrar

Hidden

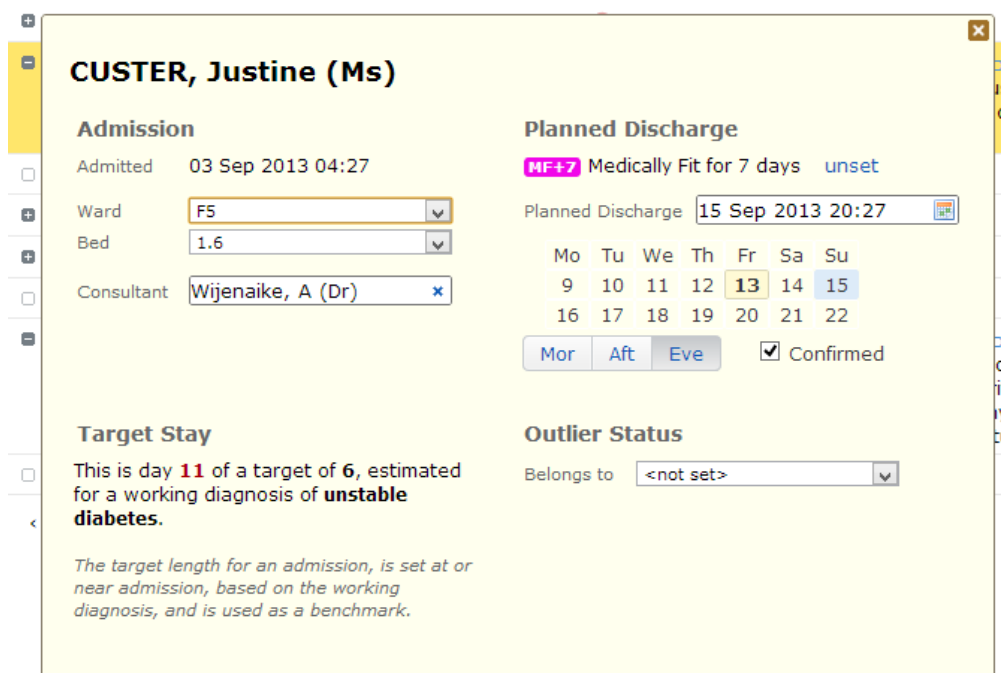
cancel **SAVE**

DISCHARGE PLANNING FEATURES IN DETAIL

FEATURE	BENEFIT
	Discharge planning on a per patient basis, including handover information

Confirmed discharges (for today) are shown.

Valuable in predicting upcoming available beds, and driving discharge practice towards a shorter length of stay



CUSTER, Justine (Ms)

Admission
 Admitted 03 Sep 2013 04:27
 Ward F5
 Bed 1.6
 Consultant Wijenaike, A (Dr)

Planned Discharge
 MF+7 Medically Fit for 7 days unset
 Planned Discharge 15 Sep 2013 20:27

Mo	Tu	We	Th	Fr	Sa	Su
9	10	11	12	13	14	15
16	17	18	19	20	21	22

Mor Aft Eve ☒ Confirmed

Target Stay
 This is day **11** of a target of **6**, estimated for a working diagnosis of **unstable diabetes**.
The target length for an admission, is set at or near admission, based on the working diagnosis, and is used as a benchmark.

Outlier Status
 Belongs to <not set>

Under the admissions section, the patient's allocated ward, bed, and consultant may be set.

One click set of ward, bed, outlier status and planned discharge

Central visibility of useful or critical information

VTE prophylaxis ☐ Yes ☒ No ☐ N/A ☒

Senior Review Holley, Will (Mr) ☒

Working Diagnosis unstable diabetes ☒

Target Stay 6 days (to 18 Jun 2013) ☒

End of life ☐ Yes ☒ No ☒

Current Admission

Currently an in-patient, admitted on **13 Jun 2013 21:08**.

This is day **13** of a target of **6**, estimated for a working diagnosis of **unstable diabetes**.

The target length for an admission, is set at or near admission, based on the working diagnosis, and is used as a benchmark.

Illustration of capture of target stay, and then a subsequent overstay

Target stay length - this is expressed, at the point of admission, as a number of days for which the patient is expected to stay, dependent on their condition / procedure / age

Setting a target at the start of an admission serves as a benchmark throughout the admission. This allows early highlighting of overstay.

Side1	HOUGHTON, Ben (Mr)    4 / 7	29 Jun
5.4	HOWARD, Alan (Mr)   13 / 4 04 Dec 1988 (24y)	27 Jun AM 
3.1	JOHNSON*, Ian (Mr)  8 / 15	28 Jun
4.5	JOHNSON*, Jasmine (Miss)  9 / 9	28 Jun AM 

Fragment of ward list showing planned discharge dates with specific identification of 'morning' discharges

Planned discharge date – once set a target length does not change (that would be moving the goalposts). However, there is a need for a date which accurately predicts the actual date / time of discharge. Close to discharge this is marked as confirmed.

A continuously updated planned date allows scheduling of resources such as out of hospital care, transport and preparation of discharge drugs (TTOs)

'Morning' discharges – the ability to identify specific patients as suitable for discharge early in the day.

Discharging an increasing proportion of patients earlier in the day directly results in a higher bed occupancy rate.

AW 12/? PD???	DO 3/4 Tomorrow
5 SMITH, C1 Nathan 	2 BUTTERWORTH, A1 Delilah TBS
CL 9/? PD???	CL 10/? 29 Jun 
6 CUSTER, A1 Justine 	1 MALONEY, C2 Patrick  
AW 12/6 29 Jun	AT 7/? 30 Jun AM

Extract from a graphical whiteboard view showing several patients who have been medically fit for 7 or 4 days.

Patients

[add](#)
[search](#)
[configure](#)
[whiteboard](#)
[print](#)

Recent

Mine

Calendar

Beds

Reports B

F5 ✕

today

September - October 2013

List

F5 ✕

My Clinic

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
26 10:00 25	27 10:00 25	28 10:00 25	29 10:00 25	30 10:00 25	31 10:00 25	1 September 10:00 25
2 10:00 25	3 10:00 25	4 10:00 25	5 10:00 25	6 10:00 25	7 10:00 25	8 10:00 25
9 10:00 25	10 10:00 25	11 10:00 25	12 10:00 25	13 Today 10:00 25 PD -1 NOW 26	14	15 PD -1
16 PD -6	17 PD -8	18 PD -2	19	20	21	22
23	24	25	26	27	28	29
30	1 October	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1 November	2	3

Calendar view of a ward

The 'Calendar' link allows the user to view appointments made for the selected ward on a given day. The blue links lead to snapshots of the patients within the ward at that particular time. The time is given on the left hand side of the link, and the number of patients present is given to the right. The 'PD - 1' label indicates that one of the patients on the ward has a planned discharge date set for that day.

Instant visibility of ward information on a per day basis

One click access to ward information and bed status on any given day

The calendar is intended to provide both a future view and historical view of the state of wards, at any given period of time

Instant visibility of bed state at any given point of time.

Supports audits and will help bad managers planning

MF	Stay Reasons	Nursing Tasks	Nx	DS Status	
			C2	not done	pli
MF+4	1. Awaiting Social Care Assessment 2. Care Home Assessment		A1	written	pli
	1. Awaiting CT scan 2. Needs TTOs		A3	needed	pli
			A1	review	pli
	1. Biopsy of Liver		C2	not done	pli

Extract from ward list, with medically fit, stay reasons and discharge summary status identified

Medically Fit status – the ability to identify patients as medically fit – meaning there is no medical reason for them to remain in hospital.	Shines a spotlight on patients whose discharges are delayed by non-medical issues. Some have argued that these delays should be funded from community resources.
Stay Reasons – the ability to identify specific reasons from a structured list why a patient remains in hospital.	Discharge delays can be quantified and reported on by specific issues, which allows modifications to processes to target these.
Physiotherapy status – provision for specific physiotherapy input to discharge planning	Improves communication and avoids delays caused when appliances need to be ordered etc.
Occupational therapy status – provision for specific occupational therapy input to discharge planning	Improves communication and avoids delays caused when appliances need to be ordered etc.
Social worker status – provision for specific social worker input to the discharge process	Social workers are the gate-keepers to community funding of out of hospital care packages.
Section2, Section 5 – indication that these assessments are needed or have been completed.	Incomplete processes prevent discharge. Avoiding delays in starting them prevents delayed discharge.

PRE-REQUISITE EPRO MODULES

The following other modules are required as a minimum to use the Epro bed management module

- Epro Core Module
- HI7 Interface Module

SUPPORTING EPRO MODULES

EPRO PATIENT HANDOVER LISTS MODULE supports the accuracy of the patient beds by allowing users to update the bed of each patient from within in Epro Lists. If doctors are using the lists for handover, this typically ensures the beds are updated every 24 hours. If nurses are using the lists for nursing handover, the information is usually updated three times per day.

BENEFITS SUMMARY**Bed Managers become more efficient because**

- They save time collecting information from wards
- Their information is more up to date
- Their information is higher quality – they can drill down to access details
- Their ability to forward plan is improved
- Length of Stay reduces as discharge planning is introduced

Wards become more efficient because

- They manage their workload better
- Their staff are interrupted less by requests for information
- Their patients may be matched better to ward staffing using the dependency index
- Length of Stay reduces as discharge planning is introduced

The Trust benefits from

- Improvements to patient flow through better bed planning
- Fewer cancelled elective admissions
- Higher bed occupancy rates
- Length of Stay reduces as discharge planning is introduced

EPRO MODULES SUMMARY

Epro is built on a modular system that allows trusts to control which features they use and which they don't. In addition to the core module and digital dictation, there are 13 modules that can be added as required, enabling a tailored solution for hospitals' requirements.

EPRO CORE is the starter module for any configuration of the Epro clinical toolkit. It includes patient demographics, GP and GP practice demographics, Powersearch, the Epro template engine, a user module with granular security framework, user activity logging, audit, server based generation of word documents and basic reporting facilities. The HL7 interface allows trusts to monitor and track all inbound HL7 messages, and the responses sent by Epro and any failures. There is the option to edit message failures to correct issues and resend them. End users are able to author their own help material to be integrated into the Epro help centre and adjust some help related configuration settings.

EPRO DIGITAL DICTATION MODULE integrates Epro with digital dictation systems to allow the capture of dictation directly into templates, and /or the transcription of dictation. It also extends the reporting available on digital dictation across the whole letter production process.

EPRO ADMISSIONS MODULE allows the transfer of admission / discharge data from the PAS via HL7 messages. A patient's admission status is displayed integrated with other core features such as Powersearch and lists by consultant / ward / specialty. Admissions data can be updated in Epro on a configurable basis. This also adds the capacity to view clinic appointments in calendar format, as clinic lists and also on a per-patient basis. Also, Epro provides a retrospective view on all previous admissions of the patient.

EPRO CLINICAL CORRESPONDENCE MODULE allows capture and production of clinical letters using templates in a web-based template engine or Microsoft Word and includes electronic review / approval and reporting on workflow.

EPRO DISCHARGE SUMMARY MODULE allows the capture and production of discharge summaries and also includes a discharge tracking module for management and reporting of discharge workflow. It includes a drugs module to support adding, managing and screening of drugs. The module also allows the recording of drug and medication histories. It includes the national CfH drug dictionary (D, M + D), a local formulary module and the possibility to create and manage order sentences on a per-trust basis. The included drug decision support adds decision support such as allergy checking, dose range checking, drug-drug interactions and drug doubling alerts.

EPRO ADVANCED PATIENT SECURITY MODULE adds extended security features to allow per patient, per specialty or per item security restrictions to be implemented in a sealed envelope model. It includes full audit and exception log management and reporting.

EPRO ALERT MODULE enables trusts to configure, add and display alerts that allow indications of specific problems or conditions affecting a patient such as "End of life", "Do not resuscitate" or "Sick patient". Ageing and automatic removal for each Alert is configurable on a per-trust basis.

EPRO BED MANAGEMENT AND WARD WHITEBOARD MODULE is a graphical view of ward based admission lists. It replaces traditional whiteboards, and is a powerful tool to support real-time bed state, bed management, handover lists and discharge summaries. The Bed Management module provides visibility of current and immediate future bed occupancy across a hospital. It allows managing bed types, transferring patients to wards or beds, configuring bed layouts in a ward and the efficient monitoring and management of available beds. It is usually combined with handover lists using admissions, transfers and discharges.

EPRO ELECTRONIC DISTRIBUTION provides a unified letter distribution mechanism for trusts. It includes a capability for dual signature letters, the capability to restrict who authors or approves letters and extended letter cloning functionality. Default distribution routes and optional additional permitted routes for each recipient make correspondence workflows more efficient.

EPRO LAB RESULTS & INVESTIGATIONS permits capture, storage, retrieval and reporting on lab results, radiology data, photos, ECGs or graphs.

EPRO HANDOVER LIST MODULE allows the recording of key clinical information on patients, and the ability to organize patients on to lists, both pre-defined and custom user designed lists. Medical and Nursing handover is combined with specialist options for each, and the whole is integrated with a discharge planning element to aid in managing length of stay.

EPRO PERSONAL CORRESPONDENCE MODULE adds templating, review and approval functionality to the core module including integration with digital dictation. This is designed especially for non-patient and internal communication.

EPRO REPORTING DASHBOARD MODULE extends the range of reporting available in Epro to enterprise level. It comes with a range of pre-configured reports together with a customization package to tailor reports to local requirements and can be used to report on the data from any of the other modules.

EPRO TASKS MODULE permits capture, storage, retrieval and reporting of free text, or structured template form clinical notes, including general notes, referrals, OPCS coded procedures and telephone notes. It enables users to set up tasks with different priorities, allowing to filter by user, due date or state of completion. The tasks module also provides one click access to correspondence and individually tailored reporting on workflow on a per-user basis.

EPRO TEMPLATING MODULE provides users with the possibility to create and manage both print templates, which determine the final appearance, and underlying templates, which determine the appearance of the interface for letter creation. This allows individually designed letter edit on a per-trust, per-specialty or per-user basis.