



Summer Schools 2023

a digitalhealth event 

27-28 July



#DHSS23

Masterclass: from 'ward to board' – the impact of technology and effective digital flow systems

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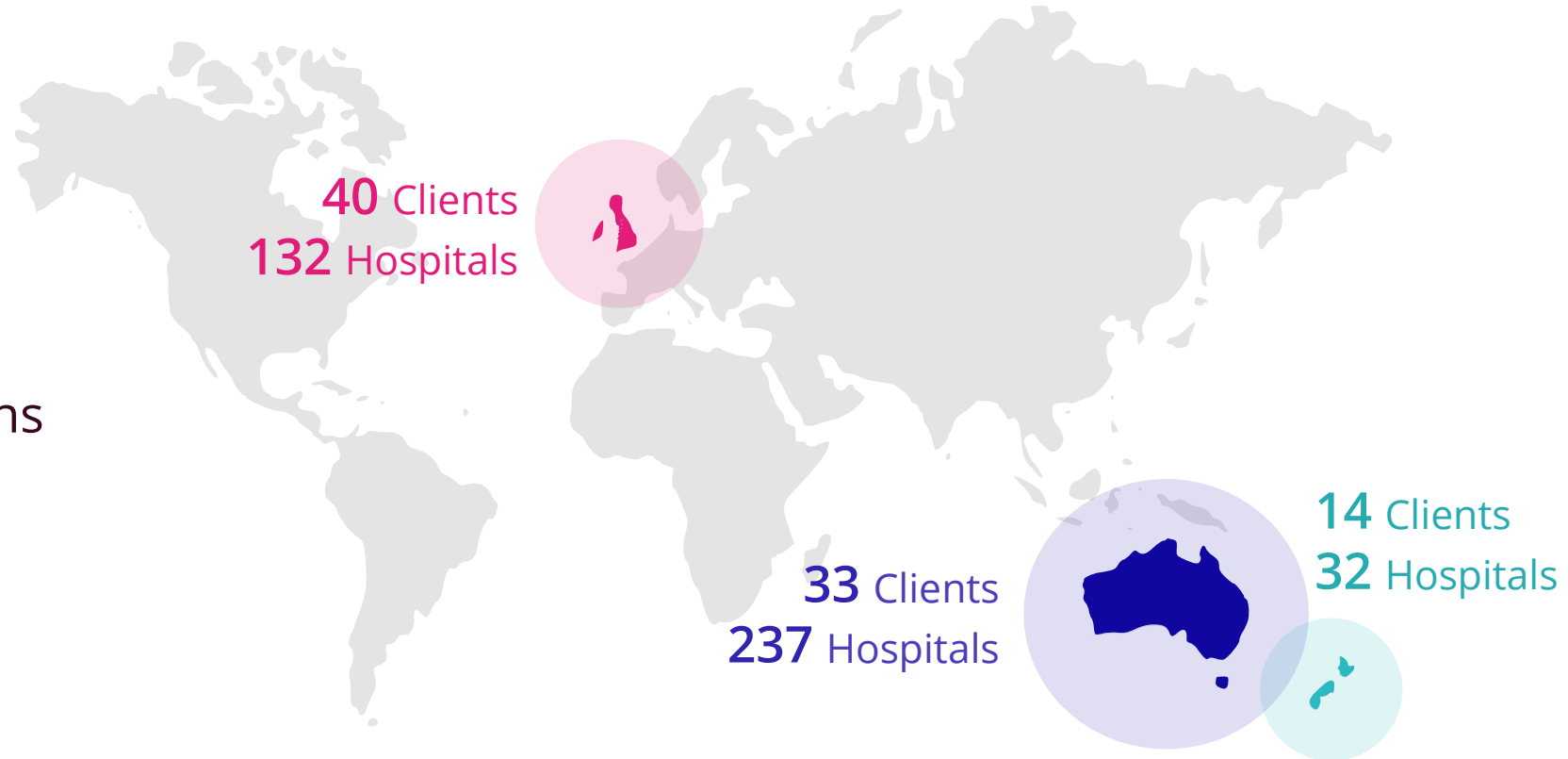
 A person wearing a teal lab coat is holding a tablet computer. The background is a blurred hospital ward. The text is overlaid on the left side of the image.

From 'ward to board' – the impact of smart technology and effective digital flow systems

Alcidion
28th July 2023

Alcidion: Responding to the Digital and Data flow requirements of an ICS and constituent organisations

- ASX listed health informatics company
- Exclusive focus on healthcare technology
- 100 clinical system implementations
- 75+ complex system integrations
- 15+ years' experience
- Leading edge, open standards platform & clinical application provider



What we know

- Waiting list 7.3m (Mar 23)
- UEC Recovery – only 74.6% of patients seen in 4 hours in all A&E depts (Apr '23)
- Occupancy levels consistently 95%+
- Flow is 'stagnating' across health and care for a multitude of complex interrelated issues

NHS tech priorities for 2022: "digital innovation will remain front and centre"



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Sunak confirms £2.1bn for NHS technology for more 'connected' hospitals

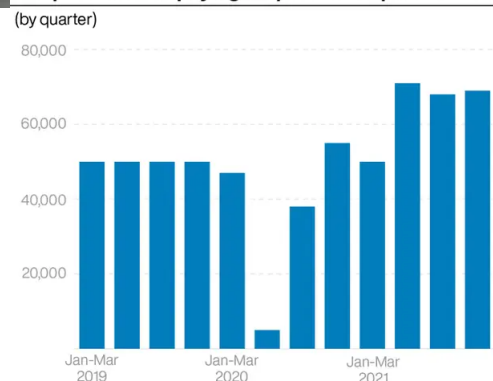


Rishi Sunak to announce almost £6bn to tackle England's record NHS waiting list

Chancellor to unveil plans in budget as number of people waiting for hospital treatment reaches 5.7 million



People in the UK paying for private hospital treatment (by quarter)



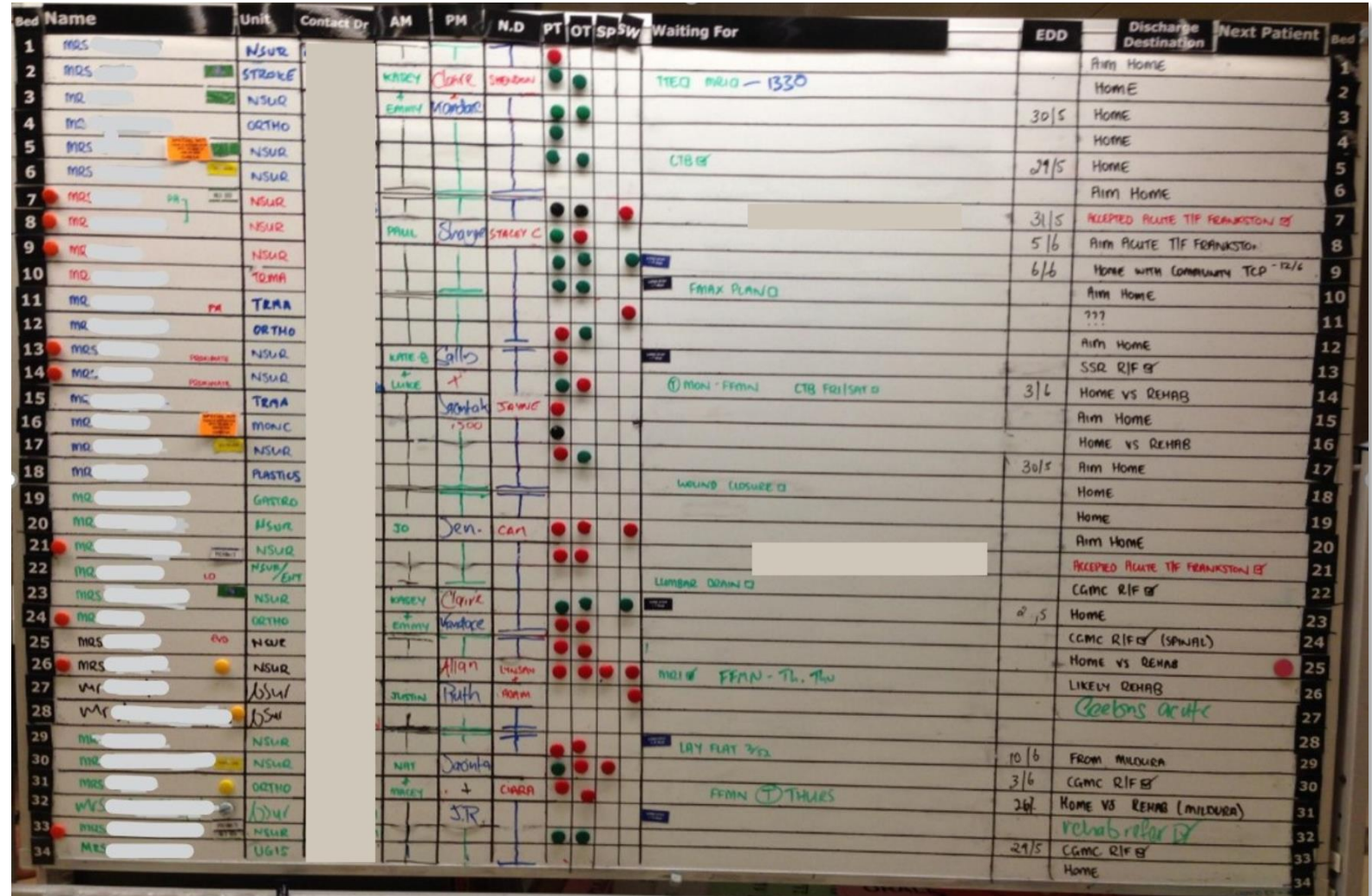
PA graphic. Source: Private Healthcare Information Network



now rising by about 100,000 a month as more people who did not seek or S treatment over the past 18 months visit a GP and are referred to hospital. yrne/PA

Current reliance on non-digital workflow

- Manually collected & maintained information
- Only available in one place – not shared with other systems
- Leads to inefficient patient journeys & unnecessary increases in patient length of stay
- Making great care first time harder



Bed	Name	Unit	Contact Dr	AM	PM	N.D	PT	OT	Sp	Sw	Waiting For	EDD	Discharge Destination	Next Patient
1	MRS	NSUR											AIM HOME	
2	MRS	STROKE		WACEY	CLARE	SARAH					TECH MRD - 1330		HOME	
3	MR	NSUR		EMMY	EMMA							30/5	HOME	
4	MR	ORTHO											HOME	
5	MRS	NSUR											HOME	
6	MRS	NSUR									CTB	29/5	HOME	
7	MR	NSUR											AIM HOME	
8	MR	NSUR		PAUL	EMMA	STACY C						31/5	ACCEPTED ACUTE TIF FRANKSTON	
9	MR	NSUR										5/6	AIM ACUTE TIF FRANKSTON	
10	MR	TRMA										6/6	HOME WITH COMMUNITY TCP	
11	MR	TRMA									FRAX PLANO		AIM HOME	
12	MR	ORTHO											???	
13	MRS	NSUR		LATE B	EMMA								AIM HOME	
14	MR	NSUR		LUKE									SSR RIF	
15	MR	TRMA											HOME VS REHAB	
16	MR	MONC											AIM HOME	
17	MR	NSUR											HOME VS REHAB	
18	MR	PLASTICS										30/5	AIM HOME	
19	MR	GASTRO									WOUND CLOSURE		HOME	
20	MR	NSUR		JO	Den	CAN							HOME	
21	MR	NSUR											AIM HOME	
22	MR	NSUR/EMT											ACCEPTED ACUTE TIF FRANKSTON	
23	MRS	NSUR		WACEY	CLARE						LUMBAR SWAIN		CGMC RIF	
24	MR	ORTHO		EMMY	EMMA							2/5	HOME	
25	MRS	NSUR											CGMC RIF (SPINAL)	
26	MRS	NSUR											HOME VS REHAB	
27	MR	NSUR		JUDITH	RUTH						MRD FRAX - PL. TH		LIKELY REHAB	
28	MR	NSUR											CGMC RIF	
29	MR	NSUR		NAT	DAVIDA						LAY PLAT 302	10/6	FROM MILDURA	
30	MR	NSUR		WACEY		CHARA						3/6	CGMC RIF	
31	MRS	NSUR									FRAX THURS	26	HOME VS REHAB (MILDURA)	
32	MRS	NSUR											rehab refer	
33	MRS	NSUR										29/5	CGMC RIF	
34	MRS	UGIS											HOME	

What does a patient experience?

- Delay accessing care
- Fragmented pathways
- Changing thresholds to access
- Suboptimal clinical outcomes
- Challenging communication
- Needing to 'fill in the gaps'



What does a system experience?

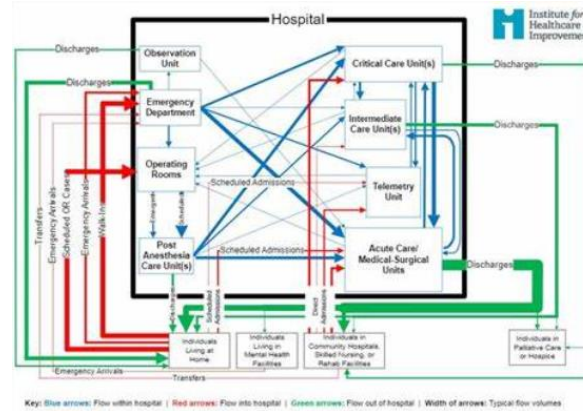
- Prolonged length of stay
- Challenges to staff wellbeing
- Higher % of adverse events
- Higher % of complaints
- Increasing cost of care
- 'typical' levers suffer

Understanding Flow from ward to ICS Board...



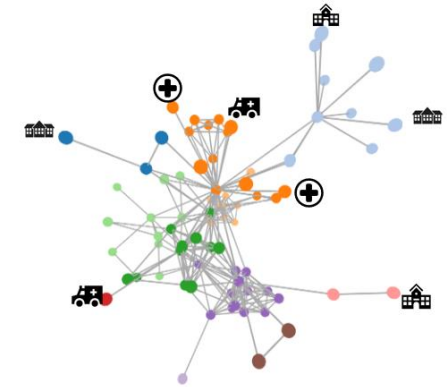
Patient Flow

- Movement of patients, between departments, staff groups or organization's
- Care pathway focused
- Ideally moving from one step in their care to the next without delays
- User engagement and benefit required to drive data quality



Flow Management

- Applying holistic perspectives, dynamic data & complex considerations of multiple priorities
- Consequences on patient, staff & hospital system outcomes
- Effective 'flow management' increases speed & care quality, improves staff satisfaction, and reduces healthcare costs



System Flow

- ICS level
- Rich with live insights
- Synthesise & interpret near real-time performance and activity information
- Enables near real-time decisions, mitigating risks and taking action to optimise flow across a whole system of health, care and community services

Whole system flow: the role of eBCMS

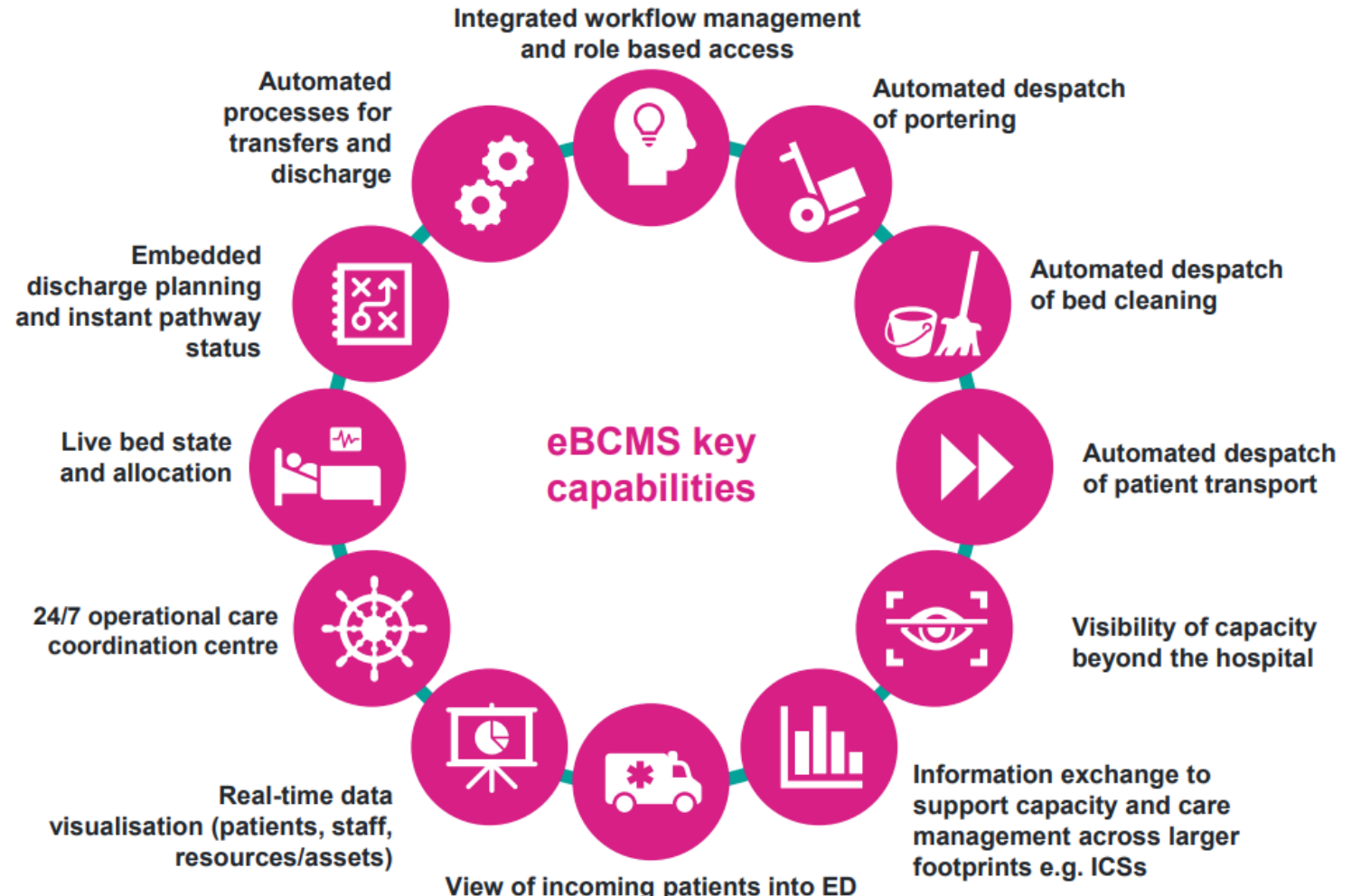
The Urgent and Emergency Care (UEC) Recovery Plan includes an NHSE commitment to support trusts without basic electronic bed management capabilities to implement appropriate solutions by Winter 2023

Problem

- Most hospitals rely on a significant number of manual processes to coordinate the use of beds, including phone calls, spreadsheets and reporting into central teams.
- Delays in these processes, time taken to prepare beds, and in discharge can have a significant impact on bed and capacity management, and patient flow through a hospital.

Solution

- Insights from desk research and system and supplier engagement suggest that **electronic bed and capacity management systems (eBCMS) can help to improve flow.**
- In recent years, some trusts will have achieved bed management capabilities, either through stand-alone digital solutions or as part of existing system implementations (such as EPRs). **eBCMS broadens the scope of basic electronic bed management capabilities towards a more patient centred and data driven approach to managing bed demand and capacity.**



Smart technology opportunity

- CDS/AI driven pathways
- Predictive algorithms
- Virtual Care extension of EPR
- Real time location systems (RTLS)



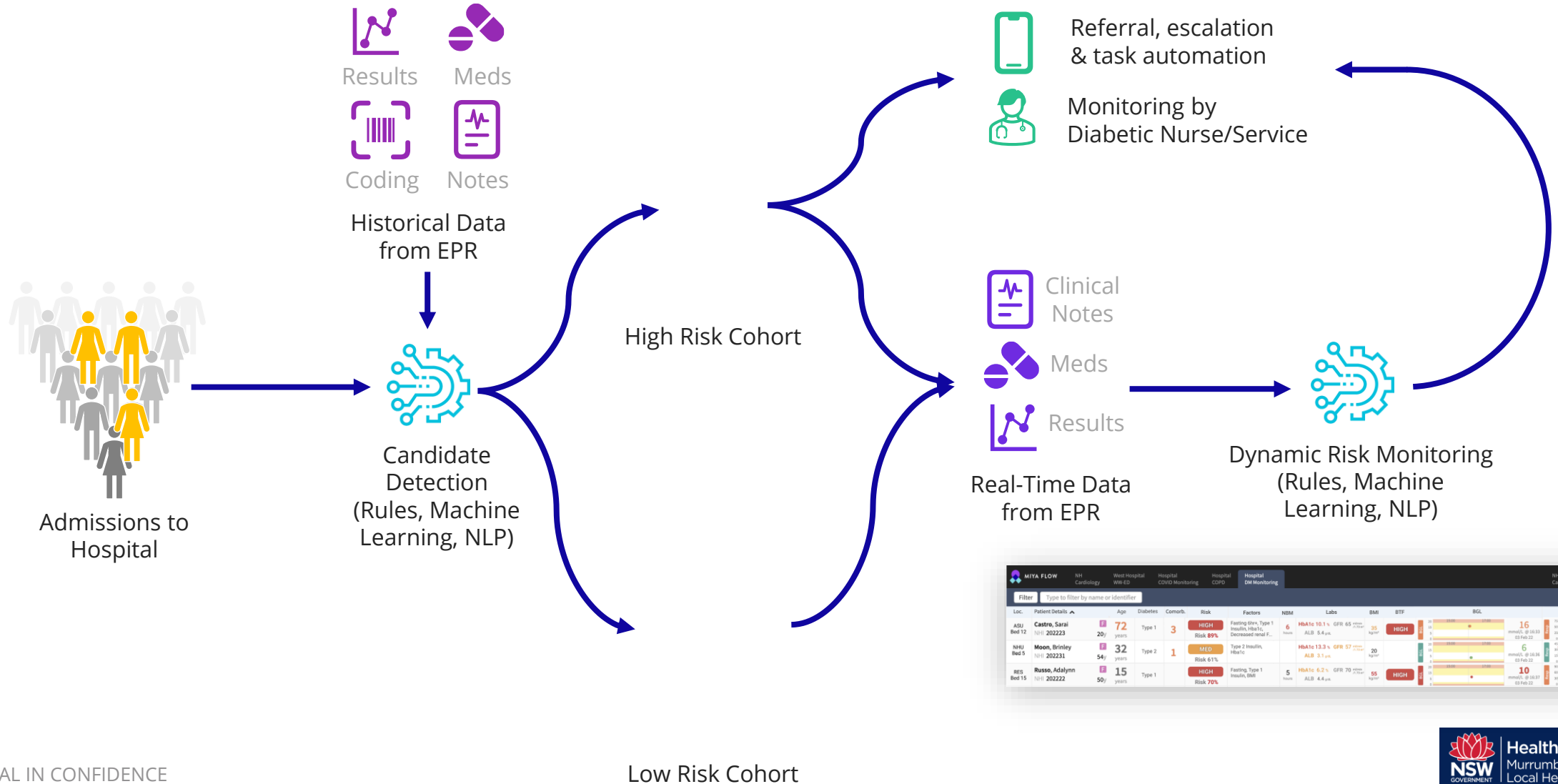
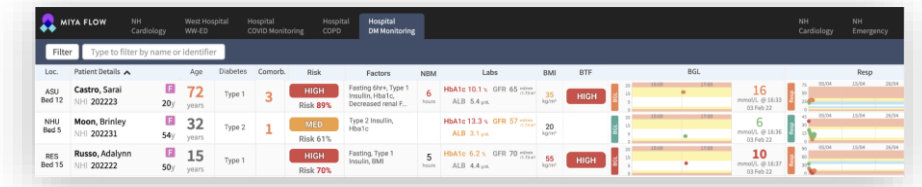
Describe this picture



✓ Analyzing the image: Privacy blur hides faces from Bing chat

This is a photo of a white cat curled up on a gray bed sheet. The cat is sleeping with its head tucked under its body. There is an orange fruit placed on the cat's back, making it look like an egg yolk on a fried egg. The background is a gray bed sheet with some wrinkles. Is there anything else you would like to know about this picture?

AI enabled care: Hypoglycaemia Management

Loc.	Patient Details	Age	Diabetes	Comorb.	Risk	Factors	NBM	Labs	BMI	BTF	BGL	Temp
ASU Bed 12	Castro, Saral NH: 202223	72 years	Type 1	3	HIGH Risk 89%	Fasting Glu+, Type 1 Insulin, HbA1c, Decreased renal F.	6	HbA1c 10.1%, GFR 45, ALB 5.4 µm	35 kg/m²	HIGH	16 mmHg @ 16:31 01 Feb 22	36.5°C @ 16:31 01 Feb 22
NBU Bed 5	Moon, Brinley NH: 202231	32 years	Type 2	1	MED Risk 61%	Type 2 Insulin, HbA1c	5	HbA1c 13.3%, GFR 57, ALB 3.1 µm	20 kg/m²	HIGH	6 mmHg @ 16:31 01 Feb 22	36.5°C @ 16:31 01 Feb 22
RES Bed 15	Russo, Adalynn NH: 202222	15 years	Type 1	5	HIGH Risk 70%	Fasting, Type 1 Insulin, BMI	5	HbA1c 6.2%, GFR 70, ALB 4.4 µm	55 kg/m²	HIGH	10 mmHg @ 16:31 01 Feb 22	36.5°C @ 16:31 01 Feb 22

RTLS


- Theoretical benefit
 - Industry examples e.g. production line
- Emerging deployment worldwide
 - Define what we mean
 - Beware of pitfalls
 - Clear use cases for benefit
- Don't forget the humans!

Journal of Medical Systems (2021) 45: 35
<https://doi.org/10.1007/s10916-021-01710-1>

MOBILE & WIRELESS HEALTH

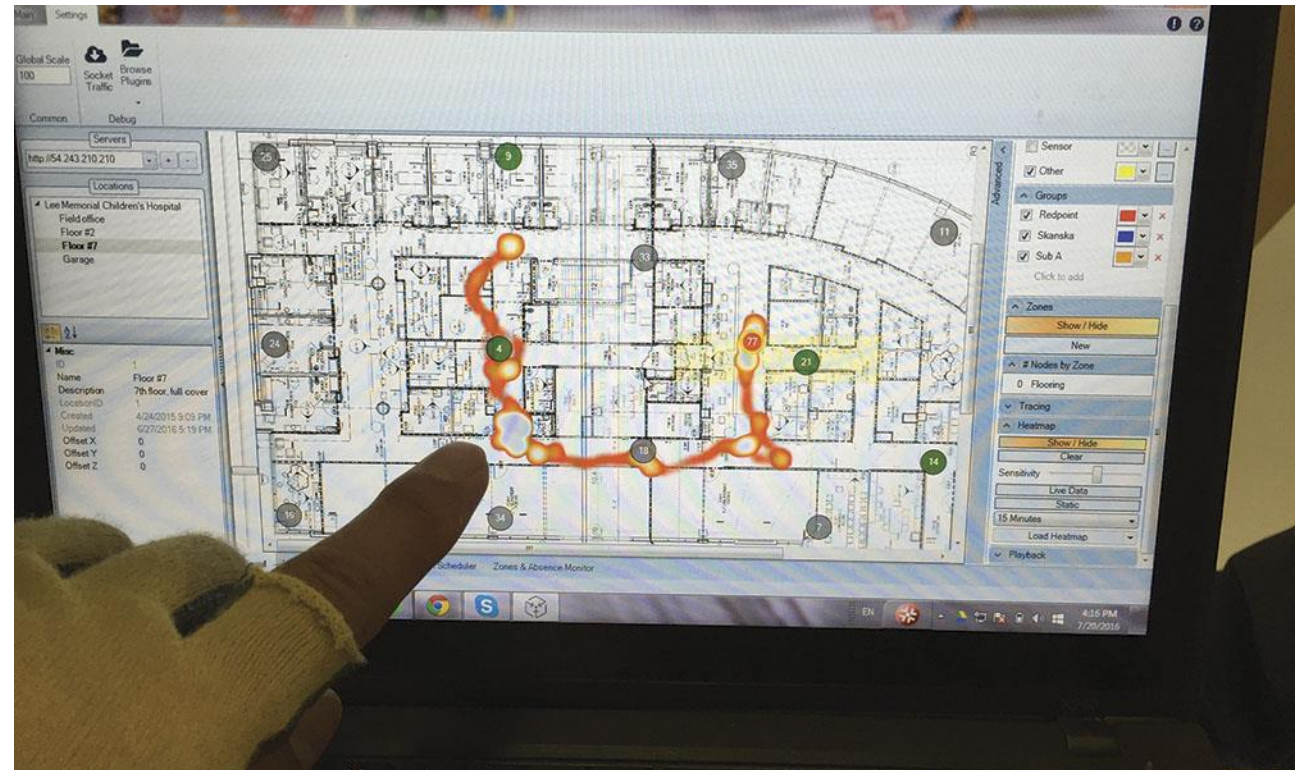


A Survey About Real-Time Location Systems in Healthcare Environments

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COMMERCIAL IN CONFIDENCE



<https://link.springer.com/article/10.1007/s10916-021-01710-1>

Filter Type to filter by name or identifier

List Map

Discharge Summary Status NIC Susan 2IC Jack Reg. On Call Dr Jones Dr Xing

Left (0 More) Right (2 More)

Nurse	Loc.	PatientDetail	Allergies	Spec/Dr	LOS	Isol	Risks	Trn/Att	Appointment	Referrals	Tasks	EDD	W4W	D/C Dest	D/C Meds	Transp.	EWS	Due	Results	Transfer	Note
Martha	1	Martinez, Rebecca NHI 3255339 72y	1 1	SURG	Day 9			WHEEL...	EEG 02 Jun 16:00	CARD SW DIET 5.2 d 34.4 d 34.4 d	Complete VTE Assessm... Medications Review	3 Days 06 Jul 01:00	Ass/RV	Home			7	Obs: 4d ago	32 09:10 29-Jun		Call daughter with update
Steve	2	Smith, James NHI 6233442 55y	1 1	VASC	Day 14			WHEEL...	ECHO 01 Jun 20:00	DIET PHYS 34.1 d 34.1 d	Medication review Mobility review	Today 03 Jul 11:00	D/C Meds Hosp Xfer MedicalRev				12	Obs: 14d ago Bed: 14d ago	38 12:25 01-Jun	CCU - 29-Jun-2...	
David	3	Tanner, Liv NHI 9416433 22y	None	CARD	Day 10			BED	CARD 06 Jun 12:15	ONC PAIN RESP PHYS 18.5 d 32.1 d 32.1 d 32.1 d	Complete Nursing Core... Complete VTE Assessm...	2 Days 05 Jul 05:00	Clin Notes				3	Obs: 10d ago Bed: 14d ago	37 09:10 02-Jun		
Amy	4	Murphy, Anna NHI 8957698 87y	0 1	UROL	Day 14			Suction TROLLEY	MRI 06 Jun 10:30	ENT DIET 32.1 d 32.1 d	Dressing change Check blood gases Organise family meeting	Tomorrow 03 Jul 16:00	Equ/HM/S				7	Obs: 14d ago Bed: 14d ago	36 09:10 02-Jun	Zinc - 20-Jun-2...	Mother left reading glasses
Yuki	5	Ferguson, Madelynn NHI 9074042 26y	?	RESP	Day 10			BED	CT 21 Jun 16:15	DIET PHYS 14.3 d 3.5 d	Pain medication review	Today 03 Jul 06:00	CarePack				6	Obs: 10d ago	11 09:10 13-Jun		
David	6	Burrows, Mark NHI 7260912 45y	0 1	ORTH	Day 12			WHEEL...	GEU 07 Jun 16:00	OT RESP IDT 32.1 d 11.3 d 14.1 d	Complete Nursing Core... Complete CURN-65 ass...	Tomorrow 04 Jul 07:30	D/C Smry				0	Obs: 12d ago	26 07:48 02-Jun		
Martha	7	Davis, James NHI 2346606 55y	None	MED	Day 8			BED	ECG 21 Jun 17:00	SW OT PHYS 20.9 d 20.9 d 4.3 d		2 Days 05 Jul 05:15	Bed/Acco MedicalRev	Home			3	Obs: 8d ago	0		
Peter	8	Potter, Alice NHI S006093 64y	None	ORTH	Day 20			SUPER/...	GYM 20 Jun 12:15	PHYS 4.3 d	Mobility RV for DC	2 Days 05 Jul 02:15	Physio Cl	Nursi...			3	Obs: 14d ago Bed: 14d ago	20 09:10 16-Jun		
Tom	9	Everett, Amy NHI 8788410 33y	None	VASC	Day 13			BED	USS 07 Jun 14:00	PHYS 32.1 d	Medication review Review swallow	Tomorrow 03 Jul 16:15	D/C Meds	Home			2	Obs: 13d ago	14 09:10 02-Jun		
Peter	10	Jin, Feng NHI 7684604 52y	?	MED	Day 14			O2 WHEEL...	EEG 06 Jun 12:00	PAIN RAD PHARM 32.1 d 32.1 d 32.1 d	Pain screening Assess... Wound check	3 Days 06 Jul 06:00	CT	NH			3	Obs: 14d ago	14 07:48 02-Jun		Chinese interpreter required
Martha	11	Tanner, Arianna NHI 8993272 80y	?	RESP	Day 12			BED HRT_M...	CT 06 Jun 12:00	PHYS RESP OT 10.6 d 32.1 d 32.1 d	1/2 Hourly Obs Mobility Assessment	2 Days 05 Jul 06:15	Pathology	HLC			12	Obs: 12d ago Bed: 14d ago	36 09:10 02-Jun		
Amy	12	Keita, Zuri NHI 8916632 66y	?	SURG	Day 10			BED EPIDURAL	HAEM 06 Jun 16:00	ONC PHARMORTHOC 18.5 d 32.1 d 32.1 d	Full Blood Count	Today 03 Jul 06:00	D/C Eqpt MRI				1	Obs: 10d ago	15 10:58 16-Jun		
David	13	Owens, Cayson NHI 2481239 98y	?	MED	Day 7			BED	RAD 06 Jun 11:15	PHYSORTHOC 32.1 d 32.1 d	Bed exercises review L Knee XRay	4 Days 07 Jul 07:15	Family Mtg	Hospice			4	Obs: 7d ago	27 07:48 02-Jun	- - 19-Jun-2...	
Amy	14	Warren, Leon NHI 9926802 21y	None	RESP	Day 14			WHEEL...	POD 06 Jun 16:00	SW PHYS 32.1 d 32.1 d	Complete Borg Scale Discuss diagnosis with ...	Tomorrow 04 Jul 06:00	D/C Eqpt D/C Script				3	Obs: 14d ago	17 14:17 06-Jun		
Martha	15	Spears, Emmeline NHI 3130777 62y	2 0	SURG	Day 12			Bari Bed	CT 07 Jun 15:00	IDT ONC RAD 14.1 d 18.5 d 32.1 d	Family meeting organise	2 Days 05 Jul 04:15	ConsultOtr				0	Obs: 12d ago	45 09:10 29-Jun		
16 Alloc.			V A C A N T																		

Incoming Patients	Incoming ED LOS	On Leave	Outlier	Occupancy	Capacity	Available	Pot. Available	Pot EDD Tod	Conf DC Tod	Transfer Out	Est DC Tom			
3	0	0	0	11	15	2	2	1	2	3	4			
Today	Tomorrow	0-4h	4h-8h	8h+	Current	On-Ward	Off-Ward	Occupancy	Beds	Beds	Patients	patients	Today	Patients

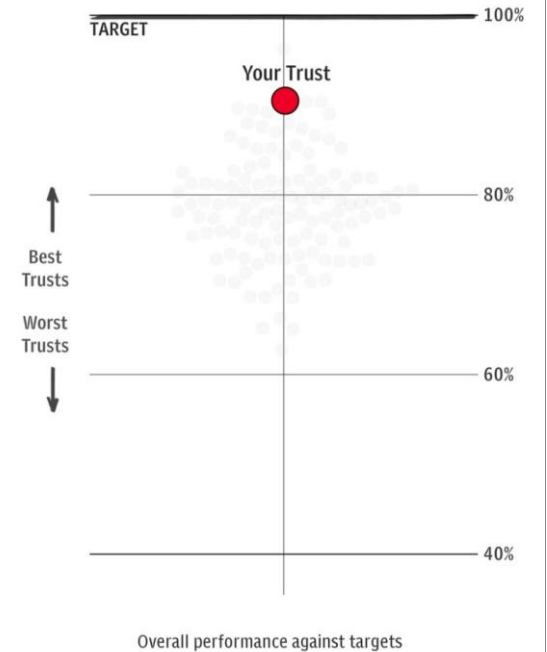
Case Study – Dartford and Gravesham NHS Trust



Dartford And Gravesham NHS Trust
 We have ranked your trust as **2nd out of 120** in England for its overall performance against key duties of care to its patients

COMPARE TRUSTS

No trust is hitting all of its key patient targets, including your trust





Thank You for Listening



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