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CASE STUDY · MARLUC SYNOPSIS

Kettering General Hospital AI bed allocation proof of concept

IMPLEMENTED 2021 · HEALTH AND LIFE SCIENCES · UNITED KINGDOM · BAND E · CLAIMED ONLY

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Kettering General Hospital and Faculty built a 14-week proof of concept, funded by the NHS AI Lab Skunkworks, that forecast demand and suggested beds for emergency patients for staff to choose from. The trust planned to bid for funding to put it into use. No source found shows that it went into use.

ABOUT THIS SYNOPSIS

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Facts and figures are as reported by the sources listed below, which may be incomplete, self-reported or out of date. Check the original source before relying on any figure.

The impact band, proof marker and SEAM view are MarLuc's opinion. The organisation is not a MarLuc client and has not reviewed or endorsed this synopsis. Names and trademarks belong to their owners.

NOTICE WORDING LAST UPDATED 16 NOVEMBER 2026

AT A GLANCE

No measurable effect: tested, no effect.

AI used: Machine learning demand forecast and bed allocation suggestions (proof of concept).

Implemented: 2021. Grade: band E, No measurable effect, Claimed only.

Headline result, as reported: A 14-week proof of concept for AI bed suggestions; no reported use since

1 · The case

The facts, as reported by the 5 sources listed at the end. Where a source is silent, the field says "Not reported".

Organisation

Kettering General Hospital NHS Foundation Trust. NHS acute hospital trust in Kettering, Northamptonshire, England. Staff numbers: Not reported in the sources used. Canvas block: 4. Operations and process. Also 6. Data and technology.

Business challenge

The challenge. Bed allocation is done by a human team relying on individual expertise. NHS England's write-up reports that demand and capacity are complex, that staff are overwhelmed with options, and that expertise varies. ACE notes that senior managers called their bed managers 'super humans' and that gaps appear when they are away.

Who implemented it

Faculty (Consultancy): Applied AI supplier that built the proof of concept.
In-house (In-house): Kettering General Hospital: trust staff acted as product owners and reviewed the tool.
Funded and supported by the NHS AI Lab Skunkworks; Faculty was engaged through the Home Office's Accelerated Capability Environment.

Technology (SEAM pillar E)

SEAM types: T8 Predictive / ML models. Deployment: Not reported. Vendors and products: Faculty, Bed allocation proof of concept (open source).

Where it was built in: A stand-alone web interface over a virtual hospital built from historical data; not connected to live patient data.

What changed

Nothing reported in practice. Before and after: bed managers allocate beds by hand. The proof of concept showed what a fully developed tool could suggest. [1] [2] [3] [4] [5]

What it cost

Not reported

What it saved

Not reported. Expected benefits listed by NHS England (fewer patient moves, shorter stays, better staff efficiency) were not measured. [1] [2] [3] [4] [5]

Governance and control

Data access followed an information governance process and used pseudonymised data, per NHS England. Human in the loop was a requirement from the outset: the tool gives ranked options and schedulers decide, per ACE. Trust administrative and clinical staff sat in the delivery team as product owners. No monitoring or later assurance is reported.

S2 · Accountable owner · Claimed
Senior administrative and clinical staff from Kettering sat in the delivery team as product owners, per ACE. [3]

A1 · Safe use · Claimed
Data was accessed after an information governance process and was pseudonymised, per NHS England. [1]

A2 · Human in the loop · Claimed
Explainability and human in the loop were requirements from the outset; schedulers make the final decision from ranked options. [3] [5]

A3 · Monitoring and assurance · Not reported
Not reported.

A4 · Vendor AI · Not reported
Not reported.

A5 · Agent controls · Not reported
Not reported.

A6 · Standards and regulation · Not reported
Not reported.

What worked, what did not, what is unproven

WORKED

– A working interface that shows current occupancy, forecast demand and explained bed suggestions, per NHS England.

– Trust staff acted as product owners inside the delivery team, per ACE.

DID NOT

– The trust had no centralised patient flow information, so the allocation model could not draw on admissions for all specialties, per NHS England.

– The more advanced Monte Carlo approach needed significant computing power, and reinforcement learning was not developed within the 14 weeks.

– Staff could not easily reconfigure the tool for new beds, ward changes or flu peaks, per NHS England.

UNPROVEN

– Whether the tool would reduce bed moves or length of stay in live use.

– Whether the further funding bid was made or succeeded.

Timeline

May 2021 Bed allocation identified as an AI Skunkworks project [4]

Sept 2021 Trust's digital director says the project is about halfway through [2]

Oct 2023 ACE publishes its case study, listing integration and wider coverage as future steps [3]

2 · Grade and SEAM assessment

MarLuc's opinion, made on the evidence above. How cases are graded: marluc.co.uk/case-studies/how-we-rate

Level of change and impact

Claimed: Not applicable. Grade: E, No measurable effect. Proof: Claimed only. Level of change: Not graded.

No level assessed: band E, a proof of concept with no reported live use.

A proof of concept tested on historical data in a virtual hospital. The trust and Faculty said they would bid for funding to develop it further; no source found shows funding, live use or results.

The SEAM view and lessons learnt

The project was set up well for trust: explainable suggestions, people making the final call, and staff as product owners. It stopped at the point where most hospital AI stalls: live data. Without a central view of patient flow, the model could not see the whole hospital. For a larger organisation, the transferable point is to check that the data feeds a live tool would need exist before funding the model.

1. Confirm live data feeds exist before building the model.
2. Keep people choosing from ranked, explained options.
3. Agree the funding route to production before the proof of concept ends.

Evidence

Score 1 of 4. Self-reported: NHS England and ACE write-ups of work they funded or procured, and the trust's digital director at a trade event. No independent evaluation.

Evaluation method. Proof of concept tested and reviewed by the trust on historical data. No live trial, comparison group or published performance figures.

Sources disagree. NHS England and ACE say the proof of concept took 14 weeks; the trust's digital director described a 12-week project at HTN in September 2021.

Status. No live use reported. ACE published its case study in October 2023 still describing future steps; no later trust or NHS source found.

3 · Original sources

Read these in full. To challenge a fact or a grade, use the contact form at marluc.co.uk or the link on https://marluc.co.uk/case-studies/kettering-general-hospital-ai-bed-allocation

[1] NHS England AI Knowledge Repository: Improving hospital bed allocation using AI
https://digital.nhs.uk/services/ai-knowledge-repository/case-studies/improving-hospital-bed-allocation-using-ai

[2] HTN: Kettering General Hospital opens HTN Now focusing on AI patient flow and bed management (September 2021)
https://htn.co.uk/2021/09/20/video-kettering-general-hospital-opens-htn-now-focusing-on-ai-patient-flow-and-bed-management/

[3] GOV.UK (Accelerated Capability Environment): Using AI to improve patient bed allocation decisions in hospital (October 2023)
https://www.gov.uk/government/case-studies/using-ai-to-improve-patient-bed-allocation-decisions-in-hospital

[4] NHS England Data Science: Bed allocation
https://nhsengland.github.io/datascience/our_work/bed-allocation

[5] Hospital Management: ACE and KGH explore bed allocation improvement via AI (October 2023)
https://www.hospitalmanagement.net/news/ace-kgh-bed-allocation-ai

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