



Proxximos Safer Care

Proxximos has created an Infection Prevention & Control Solution to help prevent the costly and harmful spread of infection. This is built on a high precision real-time location & tracking system (RTLS). The Solution consists of an Application and an RTLS comprising static anchors, wearable tags & asset trackers. Proxximos can supply the RTLS or use an existing RTLS if already installed and sufficiently accurate enough.

The Proxximos Safer Care Solution is:

- A Digital Infection Prevention & Control Solution.

The associated RTLS is then also able to support other distinct use cases for NHS Trusts such as:

- Improving Patient Flow (knowing patients' locations in real-time)
- Bed Tracking
- Medical Device Asset Tracking
- Improving real world AI training data sets

Customers can combine these use cases as required.

Proxximos Infection Prevention & Control Benefits

There is a profound impact in NHS hospitals (and in all hospitals worldwide) from Healthcare Associated Infections (HCAI's). Proxximos is aiming to mitigate and suppress this challenge through our innovative Infection Prevention and Control Solution.

The following diagram highlights the challenge of HCAI seen across healthcare settings:





Currently, manual contact tracing is used to tackle all the pathogen examples below (and more)

Flu	Whooping Cough	<i>C.difficile</i>	<i>E.coli</i>	RSV
Norovirus	Mumps	Covid-19	Chicken Pox	CPE
Rubella	iGAS	Measles	MRSA	<i>Pseudomonas</i>
CRAB	Strep A	Tuberculosis	VRE	High Consequence Tropical (Lassa Fever, etc, etc)
Proxximos				
		Problem Solution Benefit Team		

The HCAI impact for typical NHS trusts is significant:

Current HCAI impact on a 1,000 bed hospital

If your hospital reflects the national average then...

HCAIs per year

800,000 infections across the NHS

5,700

Bed occupancy per day

Patients with HCAIs overstay significantly occupying 21% of beds

210

Patient deaths per year

28,000 patient deaths caused by HCAIs annually across the NHS

200

Costs per year

The beds, disruption, and direct costs caused by treating HCAI patients

£70m



How the Proxximos solution works

The Proxximos system works by providing staff and patients with a wearable device such as the following:



The staff wearable will be on a lanyard with their NHS pass. The patient wearable can be worn on the wrist attached to their patient ID band. Anchors (located every ward or so), can then see and locate the wearables every ten seconds. These locations are then stored in our Azure-based database.

Once a Case of infection is suspected or confirmed, NHS staff enter the name of the Case (e.g. the infected person) and the solution can automatically identify people who are Contacts of the Case. The solution uses the hospital's definition of Contact depending on the nature of infection and/or pathogen identified. For example, definitions are usually based on duration and proximity for respiratory infections. For gastro-related infections tracing is usually focused on places or objects that maybe contaminated.

Tracking Tags are also placed on patient-contacting medical devices that are sometimes acting as vectors for infection spread.

Contact tracing is not new – hospitals however do this manually. We have simply digitised the process. It then becomes real time, precise, labour free and not open to flawed human memory. Being precise means that we don't swamp the system with false positives which would make the data far less useful.

Instant digital contact tracing allows IPC staff to get ahead of a pathogen spreading by identifying potentially infected individuals who are not yet infectious or symptomatic. IPC staff can then decide on an appropriate package of interventions reducing the chances of onward transmission. The following image summarises this approach & process:





There are many expected benefits from the Proxximos Safer Care platform, and we anticipate we can support trusts via a 25% reduction in HCAI's. By doing so a typical 1,000 bed hospital would see the following benefits:

1. 52 more beds available every day
2. 1,400 fewer patient infections per year
3. 50 fewer avoidable patient deaths per year
4. £5m in-year cashable savings per annum

This directly supports trusts helping achieve their bed occupancy and elective care waiting list targets for improvement.

Additional Benefits of the RTLS

The Proxximos Infection Prevention & Control Solution incorporates a highly precise RTLS which can be installed using the attractive business case for reducing infections. Once this RTLS is in place, the system can be used to also support important other use cases for real-time, precise location data:

- Improving Patient Flow (knowing patients' locations in real-time)
- Bed Tracking
- Medical Device Asset Tracking
- Improving real world AI training data sets

Customers can combine these use cases as required.

Improving Patient Flow

Through NHS initiatives, NHS Trusts are also seeking to optimise patient flow and increase productivity & efficiency.

Bed Tracking



The Proxximos solution can also help with bed tracking & management by:

1. The real-time location of the bed
2. Whether or not there is currently a patient in the bed
3. Providing staff with the ability to locate either occupied or available beds in real time and to a high degree of accuracy. This prevents delays and saves time for treating patients.



From feedback from trusts, the RTLS system provided by Proxximos solution appears to be more cost effective than existing passive RFID solutions sometimes installed for such deployments in the NHS.

Medical Device Asset Tracking

It is estimated that some nurses and facilities staff can spend upwards of 20% of their time simply trying to locate pieces of medical equipment. This can include items such as wound pumps or mobile CT scanners.



The Proxximos solution can help with medical device asset tracking & management by:

1. Locating high-value equipment in real time preventing delays and saving time looking for equipment vital for time sensitive patient care
2. Real-time alerts can be provided if medical devices are removed from their expected area of use
3. Providing the infrastructure to allow medical device suppliers to locate and track the equipment they own in your hospital.
4. This reduces wastage, optimizes the number of assets required, and can provide significant financial efficiencies for both the trust and the supplier of medical devices.

Improving real world AI training data sets

AI tools need accurate training data on “events” to function optimally. Events can be things like the time a patient left recover and returned to a ward. Often events recorded in EPR system are stamped with the date and time the record was created rather than the time of the event.

Where events can be seen by location data (e.g. a patient move from recovery area to a hospital ward) then Proxximos can provide a real-time feed of event data for the training of AI tools.

Summary

There is an attractive business case for reducing infection (cost savings, freeing up beds, improve patient care, reduced staff sickness, etc). This provides a 10x recurring return for a system that can reduce infection rates by 25%. This includes the installation of a real-time and precise (+/- 25cm) RTLS system. The RTLS can then also be used to unlock the benefits for several other use cases for real-time location data.

Please get in touch if you wish to find out more.

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