



FOI 3016

Date 20/09/2024

Dear Requester,

Thank you for your Freedom of Information request. Please note, this is a cross-site response for Bedford site and Luton site.

You asked:

- 1. Does your organisation employ or utilise the use of logistical robots, or advanced equipment that can assist in operational tasks in a healthcare setting?**
 - *Please select all box(es) that apply. If nothing applies, please proceed to Question 5.*
 - *In the case the robot is multifunctional, please select one that best suits its primary purpose.*
 - *In the case of multiple models and manufacturers under one application, please use the extra page given at the end of this form.*
 - *For the purpose of this study, we are looking at logistical and supporting robots, with the exclusion of surgical and clinical robots (C-Arm, phlebotomy robots, exoskeleton/therapy robots, etc.). The term 'robot' used in this study refers to an advanced equipment or hardware that has an autonomous capability and can operate with minimal to no human intervention.*

Delivery or transportation robots (delivering inpatient meals, empty food trays, medicines, samples/specimens, linen, etc.)

If yes, could you please give a general specification of the product/s:

Main delivery item : Food / Medicine / Specimen / Linen / Other

If Other :

Manufacturer :

Model :

Year of installation :

Generation : First/ Second/ Third/ Others

Other functions? :

Customer service/helper/care robot (greeting and assisting visitors in wayfinding and digital check-in, choosing inpatient meal options, etc.)

If yes, could you please give a general specification of the product/s:

Manufacturer :

Model :

Year of installation :

Generation : First/ Second/ Third/ Others

Other functions? :

Waste management robot (transporting waste, sorting waste, recycling, etc.)

If yes, could you please give a general specification of the product/s:



Manufacturer :
Model :
Year of installation :
Generation : First/ Second/ Third/ Others
Other functions? :

Cleaning or disinfecting robot (vacuuming, mopping, scrubbing, UV disinfecting, etc.)

If yes, could you please give a general specification of the product/s:

Manufacturer :
Model :
Year of installation :
Generation : First/ Second/ Third/ Others
Other functions? :

Pharmacy robots (sorting, storing, dispensing, etc.)

If yes, could you please give a general specification of the product/s:

Manufacturer : Beckton, Dickinson and Company
Model : BD Rowa VMax 160
Year of installation : May 2022
Generation : First/ Second/ Third/ Others
Other functions? : Prolog – to automatically load stock (new deliveries)

If yes, could you please give a general specification of the product/s:

Manufacturer : Omnicell
Model : Mach 4
Year of installation : 2016
Generation : Unsure
Other functions? :

If yes, could you please give a general specification of the product/s:

Manufacturer : Omnicell
Model : XT Med 3
Year of installation : 2019
Generation : Unsure
Other functions? :

Manual handling robots (goods reception, sorting, storing, etc.)

If yes, could you please give a general specification of the product/s:

Manufacturer :
Model :
Year of installation :
Generation : First/ Second/ Third/ Others
Other functions? :

CSSD robots (sterile instrument automatic storing, packaging, delivering, etc.)

If yes, could you please give a general specification of the product/s:

Manufacturer :
Model :
Year of installation :



Generation : First/ Second/ Third/ Others
 Other functions? :

Other logistical robots

Application/purposes :
 Manufacturer :
 Model :
 Year of installation :
 Generation : First/ Second/ Third/ Others

2. Was the installation of the robot(s) part of the hospital's development (as a new build, refurbishment, department enhancement, renovation, etc.) or a dedicated retrofit?

Type of Robot	Planned	Retrofit
BD Rowa VMax 160	X	
Omnicell Mach 4	x	
Omnicell XT Med 3	X	

3. When planning the use of robots, could you please tell us of any design decision(s) or adjustment(s) needed, if any, that was made to the hospital infrastructure and building design to enable their use? (E.g. installation of automatic doors, dedicated FM routes, adjustment to lifts etc.)

4. What were the main intentions behind the decision to implement the robot(s)? What evidence-based factors supported the decision to implement the robot(s) i.e., savings projection?

Type of Robot	Purpose of Use
BD Rowa VMax 160	<p><i>Choose all that apply</i></p> <p><input checked="" type="checkbox"/> Easing staff physical workload</p> <p><input checked="" type="checkbox"/> Increasing efficiency of task</p> <p><input checked="" type="checkbox"/> Repurposing staff time for patient-centric tasks</p> <p><input checked="" type="checkbox"/> Reducing human error</p> <p><input type="checkbox"/> Maximising working hours</p> <p><input type="checkbox"/> Others, please explain below_____</p>



Omnicell Mach 4	<p><i>Choose all that apply</i></p> <p><input checked="" type="checkbox"/> Easing staff physical workload</p> <p><input checked="" type="checkbox"/> Increasing efficiency of task</p> <p><input type="checkbox"/> Repurposing staff time for patient-centric tasks</p> <p><input checked="" type="checkbox"/> Reducing human error</p> <p><input type="checkbox"/> Maximising working hours</p> <p><input type="checkbox"/> Others, please explain below _____</p>
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Have the robot(s) delivered the benefits envisaged when first considering using them? Please could you outline the positive and negative impacts of the robot(s) to the staff, patients, visitors, the hospital environment, and other stakeholders in the hospital:

Type of Robot	Impacts
BD Rowa VMax 160	<p><i>The Robot is in place to serve the Dispensing staff when completing prescriptions to speed up the dispensing process and reduce errors.</i></p> <p><i>Distribution staff are able to supply 'bulk orders' for the wards.</i></p> <p><i>Automated Prolog for loading in new deliveries of stock.</i></p> <p><i>Staff time looking for medication has reduced</i></p> <p><i>Robot records expiry dates and uses short dated stock first</i></p> <p><i>Some functions of the Box Delivery System are not working as intended due to software issues.</i></p> <p><i>Robot has 2 maintenance services a year which requires around 2hours downtime</i></p> <p><i>How does it serve its purpose? Are benefits realised in time and labour saving and operational efficiency?</i></p> <p><i>Is the system reliable? Is there a high uptime and is maintenance manageable?</i></p> <p><i>How does it affect its surrounding?</i></p> <p><i>How do the staff and patient interact with it?</i></p> <p><i>Are you considering the continuity or increased use of this type of robot?</i></p>



Omnicell Mach 4	<p><i>How does it serve its purpose?</i></p> <p><i>Picks dispensed or requested medicines. Stores medicines poured onto the filling belt. Sorts medicines in between tasks to optimise space inside. Supports with date rotation and expired medicines.</i></p> <p><i>Are benefits realised in time and labour saving and operational efficiency?</i></p> <p><i>Staff no longer have to pick or load stock onto shelves which saves a considerable amount of time. When dispensing, stock comes to the staff member requesting it. Picking errors are greatly reduced provided barcodes have been inputted correctly.</i></p> <p><i>Is the system reliable?</i></p> <p><i>Yes.</i></p> <p><i>Is there a high uptime and is maintenance manageable?</i></p> <p><i>Yes</i></p> <p><i>How does it affect its surrounding?</i></p> <p><i>It was built to suit its surroundings as part of a refurb. As it is almost two storeys high, the space around it is limited to further development as the robot cannot be moved.</i></p> <p><i>How do the staff and patient interact with it?</i></p> <p><i>Staff interact via the computer attached or from the numerous dispensing stations.</i></p> <p><i>Are you considering the continuity or increased use of this type of robot?</i></p> <p><i>After 10 years, I believe the contract will be revisited and next steps confirmed as to renewing or upgrading.</i></p>
Omnicell XT Med 3	<p><i>How does it serve its purpose? Are benefits realised in time and labour saving and operational efficiency?</i></p> <p><i>Is the system reliable? Is there a high uptime and is maintenance manageable?</i></p> <p><i>How does it affect its surrounding?</i></p> <p><i>How do the staff and patient interact with it?</i></p> <p><i>Are you considering the continuity or increased use of this type of robot?</i></p> <p><i>This is used as our automated controlled drugs (CD) storage cabinet and electronic register (CD). There is time savings as the entries are electronic saving the manual writing into paper registers, this also reduces the risk of illegible handwriting. This allows for safe storage and selection of drugs reducing the risk</i></p>



	of selecting the wrong drug errors. The system is beneficial, it makes the process easier and is safer for patients. The staff find the system easy to use.
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5. Please only answer these questions if you are unable to answer Question 1-4

a. **Has the organisation considered implementing logistical robots?**

- Yes
- No

b. **If yes, is the organisation going to implement logistical robots in the next 5 years?**

- Yes
- No

If yes, what kind of logistical robot(s) and what is its intended purpose(s)?

Choose all that apply

- Delivery or transportation robots
(Delivering inpatient meals, empty food trays, medicines, specimens, linen, etc.)
- Customer service/helper/care robot
(Greeting and assisting visitors in wayfinding and digital check-in, choosing inpatient meal options, etc.)
- Waste management robot *(transporting waste, sorting waste, recycling, etc.)*
- Cleaning or disinfecting robot *(vacuuming, mopping, scrubbing, UV disinfecting, etc.)*
- Pharmacy robots *(sorting, storing, dispensing, etc.)*
- Manual handling robots *(goods reception, sorting, storing, etc.)*
- CSSD robots *(sterile instrument automatic storing, packaging, delivering, etc.)*
- Other, please explain _____

c. **If No, please share some of the reasons why you are not going to consider implementing logistical robots or decided not to proceed:**

Choose all that apply

- Cost of the robot(s)
- Limited funding / higher priorities towards other areas of improvement
- Lack of evidence supporting the effectiveness and functionalities of the robot(s)
- Lack of requirement due to ease of recruitment for human personnel/manpower
- Complexity in implementation (lengthy business case, etc.)
- Requirement for staff training
- Existing infrastructure preventing the installation of enabling works (guide routes, automatic doors, wide corridors, sufficient vertical access, etc.)
- Staff uncertainty/unease towards new technologies and possible replacement of staff
- Satisfactory solution already exists, i.e., pneumatic tube, cage tug, contracted out food/linen service
- Others, please explain _____

6. **Please could contact details be provided of anyone within the Trust who would be willing to take part in a more detailed discussion about automating logistical processes?**

This question is subject to an exemption under section 40(2) of the FOIA – Personal Information



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If you are not satisfied with the Trust review under the Freedom of Information Act 2000 you may apply directly to the Information Commissioners Officer (ICO) for a review of your appeal decision. The ICO can be contacted at: ICO, Wycliffe House, Water Lane, Wilmslow, Cheshire, SK9 5AF www.ico.org.uk

Yours sincerely,

FOI Officer

Bedfordshire Hospitals NHS Foundation Trust