Health Innovation East

Invitation to Tender: Evaluation of B.Braun elastomeric devices with remote monitoring in Hertfordshire

Part of TheAHSNNetwork

Office for Life Sciences

NHS

About Health Innovation East

Our purpose is to turn great ideas into positive health impact.

We were established by the NHS to convene all partners in the health sector, to develop and deliver innovative solutions in health and care. Our focus is the East of England, but we are part of a national network which enables us to deliver at scale.

We believe citizens, academia, health services and industry will achieve more working together than they will in isolation. Our job is to make this happen. We do this by helping innovators to navigate complex systems, generate value propositions and connect stakeholders to overcome challenges together.

Introduction

This is an invitation to tender for evaluation services to determine:

1. The acceptability and feasibility of implementing B.Braun's elastomeric device (Easypump® II) for IV infusion of medication at home alongside the existing Doccla remote monitoring system.
2. The impact of the new pathway in terms of patient experience; length of inpatient stay; staff time; carbon footprint; system capacity (in terms of additional available beds in acute settings); admission avoidance; and financial savings.

Health Innovation East is seeking a suitably qualified supplier to provide evaluation services for this project.

The following table sets out the intended timetable for the submission of bids, their assessment and the conclusion of the contractual arrangements.

Deadline	**Milestone**
03/11/2023	ITT published and issued to known suppliers
17/11/2023	12pm deadline for questions to be submitted
24/11/2023	12pm deadline for applications to be received
28/11/2023	Scoring of applications conclude, applicants notified by email, preferred supplier/s notified and due diligence begins
01/12/2023	Due diligence concludes, preferred supplier identified and contract signed

This document sets out the lot available, the expected criteria suppliers should address in their bids, along with the timescale, methodology and process for submission, scoring and award.

Background

Pressure on inpatient hospital beds is a long-standing issue – and one that took on greater significance during the pandemic. Through the virtual ward/Hospital at Home programme, alternative ways are being sought to:

- Treat patients safely and appropriately away from hospital, by avoiding unnecessary admissions, and;
- Reduce the time patients spend in hospital by facilitating safe discharge at an earlier stage in their treatment pathway.

Outpatient parenteral antimicrobial therapy (OPAT) services enable the delivery of IV antibiotics to patients, who are medically stable, within their own homes. OPAT is becoming increasingly used as a means of treating patients who need IV antibiotics, but who do not need to stay in hospital for other reasons.

There are several models of care with some services being delivered in community clinics and others in patients' homes, depending on the local available healthcare resources.

Elastomeric devices are small pumps used to administer medication such as intravenous (IV) antibiotics or chemotherapy. They can be used in patients' homes and, consequently, could help relieve pressure on hospital beds by reducing admissions and facilitating earlier discharge of patients whose sole reason for remaining in hospital is to receive IV antibiotics. With an elastomeric pump at home patients who might need antibiotics several times a day can safely have a single daily visit from health professionals.

Elastomeric devices can be procured as 'pre-filled' and stored in the fridge, or 'empty (fresh-fill)', which are filled by trained staff when they visit the patient or in aseptic units.

Pre-filled devices are required to be ordered by pharmacy on an individual basis and thus suffer from the inherent drawback of delivery lead times; ranging from 1-5 days. This can result in patients remaining in hospital until their elastomeric device has been delivered, or in some cases clinicians opting not to order the elastomeric device at all. It can also result in wastage of the pumps if the plan for the patient changes in terms of length of treatment or type of antibiotics.

Hertfordshire Community NHS Trust (HCT) is trialling the elastomeric device developed by B.Braun which allows the device to be filled in patients' homes – cutting out any delay in discharge after a clinician deems the patient medically fit to be discharged and sent home with IV medication. In addition, the B.Braun elastomeric device is procured 'empty' which offers admission avoidance potential facilitating increased capacity within the system to improve patient flow.

The pilot will use the B.Braun devices alongside HCT's established remote monitoring service (supported by Doccla remote monitoring) for patients who are referred from East and North Hertfordshire NHS Trust (ENHT) and who require the IV administration of Piperacillin/Tazobactum or Flucloxacillin.

Patients will be equipped with Doccla remote monitoring technology, and readings will be sent electronically to the remote monitoring hub in Stevenage, where they will be reviewed by a team of remote hub nurses. In addition to remote monitoring, these patients will receive one visit per day from a community clinician to support with the administration of the IV antibiotics. The visiting community clinician will not review remote monitoring readings or interact with the remote monitoring device.

The new pathway will be trialled with a small number of select patients, identified as suitable for the pilot by participating clinicians at ENHT. There are a number of other pathways that exist for this cohort of patients:

1. Hospital only admission (where all IV medications are administered as part of an in-patient stay)
2. Patients use an alternative elastomeric device and make a daily visit to OPAT services.

3. Patients are discharged or remain at home and receive IV medication via 2-3 community clinician visits per day (this pathway is only in use at Princess Alexandra Hospital NHS Trust in the Hertfordshire and West Essex ICS footprint).

An audit of patients at Lister Hospital (part of ENHT) receiving Piperacillin/Tazobactam has been carried out over one day, to assess the number of patients likely to be appropriate for the new pathway. The audit showed that 23 patients on Piperacillin/Tazobactam and 6 patients on Flucloxacillin were eligible for the new pathway on that day.

The following benefits are expected as a result of the new pathway:

- Improved patient experience/quality of life (through earlier hospital discharge and/or reduced need to travel to outpatient services)
- Reduced length of stay in acute inpatient settings, releasing bed days back into the system
- Reduced carbon emissions (from reduced community clinician visits and reduced hospital visits from visitors due to reduced length of stay)
- More efficient use of staff time including through:
    - Reduced community clinician visits
    - Reduced length of inpatient stay
    - Reduced hospital pharmacy time spent ordering and chasing elastomeric devices
- Increased system capacity (in terms of additional available beds in acute settings)
- Admission avoidance
- Reduced costs (as a result of the above)

Health Innovation East has partnered with HCT, ENHT and B.Braun to evaluate this new pathway and develop and evidence base that can be used to inform meaningful procurement and commissioning.

Evaluation questions

The evaluation questions we are looking to answer through this evaluation are:

1. How acceptable is the new pathway using B.Braun elastomeric devices and remote monitoring to patients?
2. How acceptable is the new pathway using B.Braun elastomeric devices and remote monitoring to the following staff groups:
    - Community clinicians visiting patients
    - Remote monitoring nurses based in the remote monitoring hub
    - Consultants referring patients on to the new pathway
3. How feasible is the use of B.Braun elastomeric devices and remote monitoring in a home setting, with one nurse visit per day?
4. What is the impact of the new pathway using B.Braun elastomeric devices and remote monitoring in relation to the following:
    - Patient experience
    - Length of inpatient stay
    - Staff time
    - Carbon footprint
    - Increased system capacity (in terms of additional available beds in acute settings)
    - Admission avoidance
    - Financial savings

We anticipate that these impacts will be measured against alternative pathways in order to complete a budget and capacity impact model. The below table sets out our current assumptions about how these will be measured, and the data that will be required:

Impact	**B.Braun and remote monitoring pathway post-discharge or instead of admission**	**Hospital admission only (for patients eligible for B.Braun and RM pathway)**	**2-3 community clinician home visits post-discharge (for patients eligible for B.Braun and RM pathway) – in use at Princess Alexandra Hospital only**	**Alternative elastomeric device and daily patient visit to outpatient services (for patients eligible for B.Braun and RM pathway)**
Patient acceptability	Patient survey	N/A	N/A	N/A
Staff acceptability	Staff survey	N/A	N/A	N/A
Patient experience	Patient survey	N/A	N/A	Patient survey (including cost to patient)

Length of inpatient stay	Data to be provided by ENHT	To be modelled based on length of stay data for the pilot (assuming the entire duration of treatment would be delivered in hospital if the pathway was not available). NB we will ask clinicians what the alternative pathway would be if this pathway was not available, so can indicate proportion of patients that would otherwise have remained in hospital.	To be modelled based on average LoS and RM duration provided by ENHT.	Data to be provided by ENHT.
Staff time	SystmOne data to be provided by HCT to be used showing time taken for community clinician home visit; time taken to fill IV; whether anything was escalated via the remote hub; and time taken by remote hub team. This should all be supplemented with staff surveys. A baseline survey of pharmacy staff at Lister Hospital has also been deployed to understand current time taken in ordering elastomeric devices. Feedback from pharmacy staff about the new process should	To be modelled based on published data on time taken for IV administration (other staff time associated with an inpatient stay will not be included).	To be modelled based on HCT data provided for new pathway.	To be modelled based on feedback from OPAT staff on time taken during daily patient visit.

	be used to model any savings.			
Carbon footprint	To be modelled based on published literature.	To be modelled based on published literature.	To be modelled based on published literature.	To be modelled based on published literature.
Increased system capacity (in terms of additional available beds in acute settings)	Data to be provided by Lister Hospital re what would have happened to the patient if not for new pathway.	N/A	N/A	N/A
Admission avoidance	Data to be provided by Lister Hospital re what would have happened to the patient if not for new pathway, and how many have completely avoided admission.	N/A	N/A	N/A
Financial savings	Costed based on the above as well as: - Cost of elastomerics and number used per patient - Cost of remote hub infrastructure - Any patient cost (e.g. any disruption to work) obtained via survey	Costed based on the above as well as published literature on cost of inpatient admission.	Costed based on the above.	Costed based on the above as well as: - Cost of elastomerics and number used per patient - Any patient cost (e.g. transport, time, disruption to work) obtained via a survey - Cost of OPAT daily visit based on published literature

Health Innovation East has already held multiple meetings with HCT and colleagues at Lister Hospital to ensure that the required data can be provided. Health Innovation East will support

the process of data transfer between the participating sites and the appointed evaluation partner, including ensuring the necessary information governance documentation is in place.

Deliverables

The evaluation partner is expected to develop a robust methodology that will address all of the evaluation questions outlined above, including the demonstration of health economic impact and the impact on patient outcomes. B.Braun will be responsible for the development of a budget and capacity impact model for the four pathways outlined above. The role of the evaluation partner will be to use data provided by HCT and Lister Hospital as well as appropriate data from published literature and existing datasets to complete the model and validate the assumptions made by B.Braun.

The pilot will commence in November 2023, and data collection for the evaluation is expected to take place from February-April 2024.

Below we set out key deliverables for each phase of the project.

Project set-up (December 2023-January 2024)

Data sharing agreements

The appointed evaluation team will be responsible for putting the necessary data sharing agreements in place with HCT and Lister Hospital and ensuring that necessary approvals are in place to proceed. It is not envisaged that patient identifiable data or clinical outcome data will be needed for this evaluation and primary data has been collected to inform the evaluation. Conversations about information governance and the data sharing agreements that will be needed are already in train with key stakeholders at HCT and Health Innovation East will support this process.

Theory of change

During this time, the evaluation partner will be expected to work with key stakeholders to refine the existing theory of change for the evaluation. Health Innovation East can support in facilitating a theory of change workshop with necessary people involved in the project.

Data collection (February-April 2024)

Primary data will be provided to the evaluation partner by HCT and Lister Hospital (providing appropriate data sharing agreements are in place) to answer the evaluation questions. As set out in the table above, it is also anticipated that data will need to be sourced from published literature and existing datasets.

A proposed methodology is set out below.

Data analysis and reporting (April-July 2024)

The evaluation partner will be responsible for all data analysis and independent reporting, resulting in a final report delivered at the end of July 2024. This should be copy-edited and ready for publication on the Health Innovation East website.

We would also like the evaluation partner to produce a paper for publication in an academic journal article, beyond July 2024. We can work with the evaluation partner on this and be more flexible on timelines.

Proposed methodology

In order to answer the evaluation questions, we have suggested a methodology which we feel is robust and can be achieved within the budget envelope. However, it is the responsibility of the evaluation partner to develop their own methodology and ensure they feel it can adequately answer the evaluation questions. The evaluation partner is also expected to develop appropriate data collection tools such as surveys and interview topic guides as needed.

Evaluation question	**Suggested methodology**
1. How acceptable are B.Braun elastomeric devices and remote monitoring to patients?	We suggest that patients receiving the new pathway should receive a survey to ascertain acceptability of the new pathway. The survey can be distributed via the Doccla remote monitoring devices. Health Innovation East can work with the participating sites to facilitate distribution, in order that the evaluation partner does not need to have direct contact with patients. It is not envisaged that patient identifiable information would be collected as part of the survey.
2. How acceptable is the new pathway using B.Braun elastomeric devices and remote monitoring to the following staff groups: • Community clinicians visiting patients • Remote monitoring nurses based in the remote monitoring hub • Consultants referring patients on to the new pathway	We suggest that community clinicians and remote monitoring nurses receive a survey to assess acceptability, including levels of satisfaction with the equipment; the training they have received; protocols and escalation routes; and (in the case of hub nurses) their levels of confidence in supporting patients remotely. The evaluation partner would be expected to develop and analyse the surveys. Health Innovation East can work with sites to support deployment. We suggest that referring consultants (of which we are expecting 3-4) are interviewed to understand their experience of referring to the pathway and identifying suitable patients. We also suggest that focus groups with community clinicians and remote monitoring nurses are undertaken to understand survey responses in more depth. We suggest one focus group with remote monitoring nurses and one to two focus groups with community clinicians. We would work with the evaluation team and support recruitment for the focus groups via colleagues in Hertfordshire.

	It would be the responsibility of the evaluation team to facilitate the focus groups, analyse the data and write up the results.
3. How feasible is the use of B.Braun elastomeric devices and remote monitoring in a home setting, with one nurse visit per day?	We suggest that this is assessed based on number of patients successfully referred; acceptability data as set out above; and impact data to assess financial sustainability as set out below.
4. What is the impact of the new pathway using B.Braun elastomeric devices and remote monitoring in relation to:	
a) Length of inpatient stay compared to 3 alternative pathways	We suggest quantitative analysis based on length of stay data provided by Lister Hospital as set out in the table above, as well as modelling based on this data for two of the pathways.
b) Staff time compared to 3 alternative pathways	SystmOne data to be provided by HCT to be used showing time taken for community clinician home visit; time taken to fill IV; whether anything was escalated via the remote hub; and time taken by remote hub team. We also anticipate that the staff surveys (as set out above) include questions on perceived time savings that can be used alongside the SystmOne data. In addition, a baseline survey of pharmacy staff at Lister Hospital has also been deployed to understand current time taken in ordering elastomeric devices. Feedback from pharmacy staff about the new process should be used to model any savings. Staff time for the 3 alternative pathways are to be modelled as set out in the table above.
c) Carbon footprint compared to 3 alternative pathways	This should be modelled based on published literature. We are able to suggest appropriate literature to the evaluation provider.
d) Increased system capacity (in terms of additional available beds in acute settings) (compared to a hospital admission or the OPAT pathway)	Quantitative analysis based on clinical assessment of what would have happened to the patient if not for new pathway (to be provided by Lister Hospital). This can be used to analyse where any system capacity savings are being made (e.g. if the patient

	would otherwise have been on an OPAT pathway).
e) Admission avoidance (based on clinical assessment of what would otherwise have happened to the patient)	Quantitative analysis based on clinical assessment of what would have happened to the patient if not for new pathway (to be provided by Lister Hospital). This can be used to understand whether the new pathway has resulted in an avoided admission, or whether the patient would likely not have been admitted anyway based on existing pathways.
f) Financial savings compared to 3 alternative pathways	This is to be analysed based on the above data as well as the additional cost data outlined in the table above, which can variously be suppled by B.Braun, Lister Hospital and HCT. The patient acceptability survey should cover cost; and a survey should also be sent to patients on the OPAT pathway to understand cost to them.

Reporting

During the project, the bidder will be required to report on the following areas:

- Early results as and when they arise
- Spend to date against projected spend
- Risk reporting, and,
- Progress reporting against anticipated milestones and key deliverables including via regular project meetings.

As noted above, the evaluation partner will be responsible for all data analysis and independent reporting, resulting in a final report delivered at the end of July 2024. This should be copy-edited and ready for publication on the Health Innovation East website.

We would also like the evaluation partner to produce a paper for publication in an academic journal article, beyond July 2024. We can work with the evaluation partner on this and be more flexible on timelines.

Health Innovation East can support the whole evaluation process including establishing data sharing agreements; ensuring appropriate data is shared for the appointed evaluation partner; supporting the dissemination of surveys and supporting the arrangement of focus groups and interviews as needed.

Value

A budget of **£30,000** (excluding VAT) is available for this work, although budgets that exceed this will be considered where we believe it is justified by the methodology proposed to ensure a robust output. It is anticipated that Health Innovation East would be invoiced on completion of the work. Precise funding agreements will be determined based on evaluation of the initial bid, and agreement of outcomes and deliverables.

Timetable

Below is an indicative outline timetable for this programme. Please note that there may be some flexibility in the timeline if needed, due to time needed to establish data sharing agreements etc.

Milestone	Month
New pathway goes live	November 2023
Evaluation provider appointed	December 2023
Theory of change developed	December 2023
Data sharing agreements in place	December 2023-January 2024
Data collection tools complete	January 2024
Data collection	February-April 2024
Data analysis	April-July 2024
Final report delivered	July 2024

Assessment Criteria

You are required to respond to all of the quality criteria below using the response to tender form. 80% of the marks will be assigned against the quality criteria with the remaining 20% allocated against the financial proposal.

Scoring Methodology

0	The Provider is unable to fulfil the requirement or no response is received
1	The Provider is only able to partly fulfil the requirement
2	The Provider is able to fulfil the requirement
3	The Provider exceeds fulfilment of the requirement

Quality – weighted at 80% of total score	
The Provider has demonstrated that:	
Review Deliverables	1. All the objectives and products contained within the specification will be delivered.
	2. Comprehensive and suitable methodologies are proposed for all aspects of the work, with the rationale for each.
Capability	3. Project challenges have been identified and suitable mitigations proposed.
	4. Experience of undertaking a similar piece of work, delivered to timescale
	5. The availability of suitably competent staff who have relevant experience, evidenced by CVs
	6. An understanding and application of, data confidentiality and information governance issues.
	7. Able to deliver the report within the project deadline with a realistic timetable.
Price – Weighted at 20% of total score	
Price	Scores for price are based on the following method: Normalised price score = (lowest tender price x 10)/tender price (Note that the lower the price, the higher the score)

Checklist for bidders

This check list may be helpful in developing your bid but may not be exhaustive:

- Each bid states 'Evaluation of B.Braun elastomeric devices with remote monitoring in Hertfordshire + [bidder name]' as a foot note on each page
- Each bid is page numbered
- Price for the bid has been provided, is net of VAT and is not subject to any proposed discounting.
- Each bid excludes the cost of making a presentation to key stakeholders and Health Innovation East on the findings.
- Each bid states the daily rate for the author and any associates and the number of days consumed in each element of the task.
- Each bid includes an overall timeline, broken down by task and milestone.

- Each bid includes CVs for the project team, outlining similar work previously undertaken.
- Each bid comes from the same organisation as the organisation which will submit the invoice for the report once complete, and the name of the invoicing organisation is clearly given
- Each bid states that the report will be delivered in Word.

Responses

We invite interested bidders to submit their response describing how they would deliver the described requirements within the timeframe and cost envelope. Please include a completed Declaration of Interest form with your response.

Completed responses should be sent by email to maxine.farmer@healthinnovationeast.co.uk by noon on 24th November 2023.

If you have any questions on the invitation document or the deliverables, please contact maxine.farmer@healthinnovationeast.co.uk by noon on 17th November 2023.

We will publish all questions raised (without disclosing the source of the enquiry) and all responses on the Health Innovation East website unless they are considered commercially sensitive. Our view on whether a question is commercially sensitive or not shall be final.

We reserve the right to carry out clarifications if necessary; these may be carried out via email or by inviting bidders to attend a clarification meeting. In order to ensure that both Health Innovation East and bidders' resources are used appropriately, we will only invite up to three (the ultimate number will depend on the closeness of scores) highest scoring bidders to attend a clarification meeting, should a clarification meeting be required.

Scores will be moderated based on any clarifications provided during this meeting. You are responsible for all your expenses when attending such meetings. Health Innovation East reserves the right to vary all dates in this Invitation to quote, to terminate this procurement process and/or decide not to award a contract.