		Agenda Item No: 5vi
SUMMARY REPORT	**EXECUTIVE OPERATIONAL COMMITTEE PART 2**	**25th August 2020**

Report Title:	**Oxehealth Ward Implementation Update – Outcome and Lessons Learnt**				
Executive/Non-Executive Lead:	Mark Madden, Executive Chief Finance Officer				
Report Author(s):	[I/S] , Director of ITT & Business Analysis &Reporting				
Report discussed previously at:	N/A				
Level of Assurance:	Level 1	√	Level 2		Level 3	

Purpose of the Report

This report provides:		
	Approval	
	Discussion	√
• The Executive Operational Committee with early findings of the Oxehealth pilot, initial lessons learnt and next steps.	**Information**	√

Recommendations/Action Required

The Executive Operational Committee is asked to:

1. Note the contents of the report
2. Discuss the findings of the report
3. To agree next steps
4. Request further information or action as necessary

Summary of Key Issues

Essex Partnership University NHS Foundation Trust (EPUT) partnered with Oxehealth to improve the safety, quality and efficiency of care on their inpatient wards.

Oxehealth's Digital Care Assistant is an innovative solution improving safety and experience on inpatient mental health wards. It uses an optical sensor to pay attention to a room; it can see movement and measure vital signs. There is no device connected to the patients and the solution works even in total darkness.

It supports ward staff working on inpatient wards and has been proven to reduce patient risks as well as enable a better patient experience relating to better sleep, feeling safer and a greater sense of privacy at night.

Relationship to Trust Strategic Objectives

SO 1: Continuously improve service user experiences and outcomes	√
SO 2: Achieve top 25% performance	√
SO 3: Valued system leader focused on integrated solutions	√

Which of the Trust Values are Being Delivered

1: Open	√
2: Compassionate	√
3: Empowering	√

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Relationship to the Board Assurance Framework (BAF)

Are any existing risks in the BAF affected?	No
If yes, insert relevant risk	
Do you recommend a new entry to the BAF is made as a result of this report?	

Corporate Impact Assessment or Board Statements for Trust: Assurance(s) against:

Impact on CQC Regulation Standards, Commissioning Contracts, new Trust Annual Plan & Objectives	
Data quality issues	
Involvement of Service Users/Healthwatch	
Communication and consultation with stakeholders required	
Service impact/health improvement gains	
Financial implications: Capital £ Revenue £ Non Recurrent £	
Governance implications	
Impact on patient safety/quality	
Impact on equality and diversity	

Equality Impact Assessment (EIA) Completed?	YES/NO	If YES, EIA Score

Acronyms/Terms Used in the Report

Supporting Documents and/or Further Reading

Appendix report from Oxehealth

Lead

[I/S]

Mark Madden
Executive Chief Finance Officer

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Oxehealth Ward Implementation Update – Outcome and Lessons Learnt

Purpose of Report

To provide the Executive Operational Committee with early findings of the Oxehealth pilot, initial lessons learnt and next steps.

Background/Current Position

Essex Partnership University NHS Foundation Trust (EPUT) partnered with Oxehealth to improve the safety, quality and efficiency of care on their inpatient wards.

Oxehealth's Digital Care Assistant is an innovative solution improving safety and experience on inpatient mental health wards. It uses an optical sensor to pay attention to a room; it can see movement and measure vital signs. There is no device connected to the patients and the solution works even in total darkness.

It supports ward staff working on inpatient wards and has been proven to reduce patient risks as well as enable a better patient experience relating to better sleep, feeling safer and a greater sense of privacy at night.

In addition, the Digital Care Assistant provides staff with objective data for reporting purposes, to learn from serious incidents or near misses, for auditing / assessment purposes.

A number of NHS Trusts have deployed the Digital Care Assistant in seclusion rooms to increase physical health monitoring, especially post rapid tranquillisation to reduce restrictive interventions and improve adherence to physical health monitoring policies. The Digital Care Assistant also alerts to 'no activity' in an occupied seclusion room, alerting staff earlier to potentially life-threatening incidents.

The aim of the evaluation was to identify early insights and implementation learnings after three months of use on Ardleigh, female acute, and Peter Bruff, mixed assessment.

The full report / findings are attached to this report.   This evaluation was prepared by conducting surveys, interviews and focus groups with service users, ward staff and clinical operational management.

Evaluation/Findings Methodology

The evaluation of the Oxehealth system implementation and early insights was conducted after 3 months of use on Ardleigh ward, 18 bedrooms female acute, and Peter Bruff ward, 17-bedroom mixed assessment unit. The Oxehealth system was installed in all rooms on both wards and went live in April 2020.

To identify early insights and implementation learnings, the following data were collected.

Staff perceptions were evaluated by:

- 33 x 17-question questionnaires, 14 from Ardleigh and 19 from Peter Bruff.

- 1 focus group with Ardleigh ward with 5 staff members.

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- 3 one to one interviews with Peter Bruff ward:

Patient perceptions were evaluated by:

- 15 x 9-question questionnaires, 9 from Ardleigh and 6 from Peter Bruff.

- 2 focus groups with patients on Ardleigh ward with 7 patients total.

- 5 one to one interviews with patients on Peter Bruff ward.

Implementation learnings were identified by 6 one to one interviews with staff.

Evaluation / Findings

Implementation Lessons Learnt

Four lessons learned for implementation.

EPUT and Oxehealth undertook installation and implementation under challenging circumstances due to the COVID-19 pandemic. Despite this, staff and patients interviewed felt that the implementation was highly successful. Four key learnings were identified for future implementations:

The key learnings for how to run a successful and timely implementation are:

1. Frequent patient engagement mitigated potential stress from additional activity and changes on the ward

2. Open communication, effective training and regular touch points alleviated the fear factor and gave staff a strong sense of ownership

3. Successful implementation relies on understanding how technology integrates into operational ways of working on the wards

4. Partnership working and good aftercare from Oxehealth supported smooth installation and successful implementation.

Key Findings

Safety on the wards has improved - There are fewer incidents and less harm to patients, and patients feel safer.

- 91% agreed the Oxehealth system improves patient safety on the ward.

- 94% of staff surveyed stated that the system helps them to identify incidents they may not have known about.

- 90% stated that the system has enabled them to prevent a potential incident from occurring.

- 75% of patients surveyed felt that the system keeps them safer.

In addition, there is improved physical health monitoring, and improved management of COVID-19 transmission risk.

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There is a positive impact on therapeutic engagement with patients through new ways of working.

- Enabling staff to undertake least restrictive observations at night whilst empowering them to use clinical skill and judgement to intervene when needed is improving their relationship with patients.

- 97% of staff agreed that they disturbed patients' sleep less at night using the system, and patients have noticed that they are being disturbed less at night.

- 70% of patients surveyed felt that the system has improved their wellbeing on the ward

- 62% felt that the system helps them get better sleep at night.

- Approaching clinical decisions with knowledge that the system is there as an additional tool, such as managing the risk of self-harming behaviour differently or taking a positive risk in stepping down close observations, are enabling the staff to "break the cycle" of challenging behaviour for many patients. As a result, patients are learning to engage with their recovery and develop coping skills earlier in their treatment.

- 88% of staff agreed the system enables them to provide better care for patients on the ward.

- 91% stated that the system enables them to better manage patient risk.

- 70% of patients reported they feel staff care for them better when they use the system (as an additional tool).

There are early signs the system is delivering operational value through three mechanisms.

- Fewer 1-to-1 observations, positive risk taking in stepping down observations, and faster observation rounds are saving time for staff to redeploy into other therapeutic areas.

- 79% of staff reported that observation levels for some patients can be lowered because patient risk can be better managed using the system as an additional tool.

- 88% of staff reported that their observation rounds at night were faster.

Next Steps

There were 4 wards identified for the pilot areas, the two identified in this paper, Ardleigh and Peter Bruff. The other two were delayed whilst cabling suppliers managed social distancing requirements of COVID these were Hadleigh Ward and Chelmer Ward. These wards are currently in the stage of blind running and over the next few weeks will undertake the same evaluation/findings as Ardleigh and Peter Bruff.

It was agreed previously that early findings would be brought back to the EOC for discussion and decision on whether rollout to other wards could be funded to enable them to use this product.

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Action Required

The Executive Operating Committee is asked to:

1   Note the contents of the report
2   Discuss the findings of the report
3   To agree next steps
4   Request further information or action as necessary

Report prepared by [I/S], Director of ITT, Business Analysis &Reporting

On Behalf of

Mark Madden
Executive Chief Finance Officer

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Early Insights
and
Implementation Lessons Learned

Essex Partnership University NHS Foundation Trust
in partnership with Oxehealth

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Contents

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Executive Summary

Essex Partnership University NHS Foundation Trust (EPUT) partnered with Oxehealth to improve the safety, quality and efficiency of care on their inpatient wards.

This report was prepared by conducting surveys, interviews and focus groups with service users, ward staff and clinical, operational and project management.

The aim of the evaluation was to identify early insights and implementation learnings after three months of use on Ardleigh, female acute, and Peter Bruff, mixed assessment.

Safety on the wards has improved.

There are fewer incidents and less harm to patients, and patients feel safer.

91% agreed the Oxehealth system improves patient safety on the ward. 94% of staff surveyed stated that the system helps them to identify incidents they may not have known about, and 90% stated that the system has enabled them to prevent a potential incident from occurring.[1] 75% of patients surveyed felt that the system keeps them safer.[2]

> "We had a serious patient incident on the ward last year that badly affected our patients and staff.
>
> Several instances of ligatures and self-strangulation have been highlighted by the Oxehealth system before staff members would have noticed.
>
> With Oxehealth, not only have we reduced the risk of serious incidents happening and improved patient safety, we will be able to reduce the suffering of staff and patients following a tragic incident which is invaluable to us."
>
> **[I/S]**, *Service Manager*

In addition, there is improved physical health monitoring, and improved management of COVID-19 transmission risk.

There is a positive impact on therapeutic engagement with patients through new ways of working.

Enabling staff to undertake least restrictive observations at night whilst empowering them to use clinical skill and judgement to intervene when needed is improving their relationship with patients.

97% of staff agreed that they disturbed patients' sleep less at night using the system.[3]

Patients have noticed that they are being disturbed less at night. 70% of patients surveyed felt that the system has improved their wellbeing on the ward, and 62% felt that the system helps them get better sleep at night.[4]

Approaching clinical decisions with knowledge that the system is there as an additional tool, such as managing the risk of self-harming behaviour differently or taking a positive risk in stepping down close observations, are enabling the staff to "break the cycle" of challenging behaviour for many patients.

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As a result, patients are learning to engage with their recovery and develop coping skills earlier in their treatment.

88% of staff agreed the system enables them to provide better care for patients on the ward, and 91% stated that the system enables them to better manage patient risk. [5] 70% of patients reported they feel staff care for them better when they use the system (as an additional tool). [6]

> "Occasionally we'll have some spikes but before it was a constant busy, like it was more firefighting, going from one to the next thing.
>
> Now you can take time to have that meaningful interaction and say "how are you", not just being reactive to an incident. We purposefully go to make 1-to-1 conversation, not because a patient has just tried to cut themselves.
>
> Communication has improved, patients aren't feeling like children, they are feeling more like adults."
>
> **[I/S]**, *Ward Manager*

There are early signs the system is delivering operational value through three mechanisms.

Fewer 1-to-1 observations, positive risk taking in stepping down observations, and faster observation rounds are saving time for staff to redeploy into other therapeutic areas.

79% of staff reported that observation levels for some patients can be lowered because patient risk can be better managed using the system as an additional tool. [7] 88% of staff reported that their observation rounds at night were faster. [8]

> "I think Oxehealth will help us to reduce 1-to-1 observations. We regularly have high levels of patients on 1-to-1 observations for reasons of vulnerability or safeguarding from other patients. Having lots of other staff members on observations like this can also be overwhelming for other patients.
>
> For example, right now we have 7 of our 15 patients on enhanced observations and I'd say we could confidently step down 5 of those with the help of Oxehealth because they're at risk from others.
>
> We would know where the patient is, so you wouldn't need a staff member observing each patient. I think this way, we'd give more quality care and free up staff time to give to patients."
>
> *Chloe Cawston, Service Manager*

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Four lessons learned for implementation.

EPUT and Oxehealth undertook installation and implementation under challenging circumstances due to the COVID-19 pandemic. Despite this, staff and patients interviewed felt that the implementation was highly successful. Four key learnings were identified for future implementations:

The key learnings for how to run a successful and timely implementation are:

1. Frequent patient engagement mitigated potential stress from additional activity and changes on the ward
2. Open communication, effective training and regular touch points alleviated the fear factor and gave staff a strong sense of ownership
3. Successful implementation relies on understanding how technology integrates into operational ways of working on the wards
4. Partnership working and good aftercare from Oxehealth supported smooth installation and successful implementation.

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Finding 1: Safety on the wards has improved

Fewer incidents and less harm to patients

Staff feel that patient safety on the ward has improved as a result of introducing the Oxehealth system: 91% agree the Oxehealth system improves patient safety on the ward.[9]

94% of staff surveyed stated that the system helps them to identify incidents they may not have known about, and 90% stated that the system has enabled them to prevent a potential incident from occurring.[10]

Specifically, 88% and 69% of staff reported that the system enabled them to prevent incidents of self-harm and assaults respectively.[11]

> "I think incidents of violence and aggression have reduced during the night time because we're disturbing our patients less."
>
> **[I/S]** *Ward manager*

> "We have patients who are very aggressive, we can monitor them in their room using Oxehealth so we're not at risk of harm ourselves or aggravating the patient while continuing to check the patient is ok."
>
> **[I/S]**, *Staff Nurse*

Staff are able to intervene earlier to prevent patients from causing serious harm or injury to themselves and others.

> "Because of Oxehealth, staff are more proactive now. They use Oxehealth as a tool and they get to the patient before they come to any harm.
>
> We have seen a reduction in the number of incidents that require us to call 999. With the help of Oxehealth, we've intervened at the right time, and minimized the risk of further harm."
>
> **[I/S]**, *Matron*

> "We have several patients with personality disorders that cause them to act spontaneously based on their thoughts. It's very common for them to self-harm and we can't always pick up on it in between our checks.
>
> Since we have had Oxehealth, we have discovered several of these instances and been able to intervene much faster to prevent them from coming to harm."
>
> **[I/S]** *Service manager*

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Several case examples were shared by staff who were able to intervene early and prevent patient harm from ligatures. Examples include:

> "One of our patients would use her phone to time the length of time between her observations. She knew when we would come into her room to check on her and immediately after she would start the time and she would plan to self-harm in between these checks.
>
> I had a feeling she might self-harm, so in between her observations I took a vital signs measurement using Oxehealth and I saw her trying to tie a ligature in her bedroom. Within 2 seconds I was knocking at her bedroom door and quickly intervened to cut the ligature."
>
> **[I/S]**   *Senior Healthcare Assistant*

> "We have one lady that puts the blanket up over her head when she's in bed. Sometimes it is just how she sleeps, but there have been occasions where she has been hiding a ligature. As part of her observations, we need to check her breathing rate and have to remove the blanket to see properly, but this wakes her up.
>
> With Oxehealth, we can measure her breathing rate even when she is covered and know that if her breathing rate drops even slightly below what we would expect, she's in trouble and we can attend to her immediately."
>
> **[I/S]**   *Charge Nurse*

Patients feel safer

Patients reported feeling safer as a result of introducing the Oxehealth system on to the ward: 75% felt that the system keeps them safer.[12]

> "A staff member had just spoken to a patient a couple minutes ago and their conversation gave me an inkling that we should check on her. I tried to take a vital sign but she wasn't still, however I saw something shine in the camera and went to her room to check.
>
> The patient had hidden a blade [I/S] and had a history of self-harm and aggression. We were able to verbally de-escalate the situation and had a long conversation with the patient. If we hadn't have checked on her, by the time someone had done their observation round, she may have already cut her arm.
>
> She historically has had trust issues, but we were able to build trust with her during that conversation and she would come speak to us when she was getting wound up. To my knowledge, she didn't have another incident while on the ward."
>
> **[I/S]**   *Senior Healthcare Assistant*

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Patients mentioned that their sense of safety increased because staff are able to identify when they might need help and then respond appropriately to help them.

50% of patients reported that staff responded to them more quickly when they needed them because of the system.[13]

On the topic of safety, the following quotations are representative of patient feedback:

"I think Oxehealth increases safety for patients because staff carry around the tablet with Oxehealth on it. They can see an overview of what's going on on the ward, without knocking on the patient's door and it will alert if someone needs help."

Patient

"I see Oxehealth as a link to the staff when you're ill. At night in bed, they can see that you're moving and it's a good thing because staff know you are safe."

Patient

"In one instance [staff member] came into my room to look at a drawing, and then [another staff member] came down the corridor to check I was OK having realised there was someone in my room. In that case I didn't need help but I felt it was very receptive with no delay, which made me feel safe".

Patient

"It helped me with my specific problems when I was in my room isolated. It just meant I felt safer".

Patient

"We feel safer. Manual checks allow for a greater margin of human error and overseen risk factors, but with the addition of this we know ourselves and our friends will not be left in a crisis or life threatening physical state without recordings of it having happened and an alert to someone who can step in."

Patient

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Better physical health monitoring and management of COVID-19 risk

Staff have been using the system to improve their ability to monitor the physical health of patients: 91% agree the system makes this task easier.[14]

> "I think in mental health hospitals, we're not always as good at monitoring physical health as we could be. With Oxehealth, we can get vital signs data without having to touch the patient, especially when we're concerned for their physical health. It improves our physical health monitoring for patients."
>
> *Chloe Cawston, Service Manager*

Case example:

> "We had one patient with advancing COPD that was admitted to our ward from an acute hospital after taking an overdose. He was physically unwell but there had been no highlighted issues from the day shift and they had been with us for 2 or 3 days.
>
> I was doing my level 2 observations and took the vital signs of a patient using the Oxehealth system and saw his breathing rate was 33. We immediately took his sats which were very low.
>
> We contacted the junior doctor and gave the patient oxygen. His oxygen levels rose to normal levels and so we continued to monitor his vital signs using the Oxehealth system and an oximeter. His sats dipped again and we called for an ambulance to transfer him to A&E.
>
> It makes you feel relieved and makes you wonder how much we've missed before the Oxehealth system. Despite the patient's advancing COPD, we previously wouldn't have regularly taken vital sign measurements to avoid disturbing the patients sleep."
>
> **[I/S]** *Senior Healthcare Assistant*

Reduced transmission risk of COVID-19

Enhanced physical health monitoring has been particularly beneficial in managing suspected and positive cases of COVID-19 on the ward. 61% of staff reported that they used the system to care for patients with suspected COVID-19.[15]

Several staff stated that they used the system to monitor physical health while maintaining a safe distance to minimise risk of COVID-19 transmission.

Staff feel that they have been able to manage patient risk despite reducing direct contact with COVID-19 patients by using the system, with one staff member stating: "a patient was at significant risk of suicide and so staff were able to remotely monitor her to minimise her risk of self-harm and also reduce the risk of transmission for staff."

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Additionally, [I/S], Charge Nurse, stated that "the Oxehealth system alerts to a patient leaving their bedroom which has helped to ascertain if the patient is complying with isolation."

"When we have a patient that we suspect has COVID-19, we have to take physical observations at least 4 times a day for all patients in isolation.

This includes taking their temperature, blood pressure, breathing rate and heart rate. With Oxehealth, we can be less intrusive and take their heart rate and breathing rate remotely. It's helped to lower the transmission risk to our staff too, by reducing the time spent with patients, but they are still getting their in-person care."

[I/S] *Matron*

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Finding 2: There is a positive impact on therapeutic engagement with patients through new ways of working

Staff highlighted that the Oxehealth system is enabling them to organically evolve their ward routines and ways of working, which is having a positive impact on their relationship and therapeutic engagement with patients.

Improving the staff-patient relationship

Least restrictive observations at night

Both staff and patients highlighted that a shift to "least restrictive observations" at night is improving the sleep and wellbeing of patients.

Staff are now able to confirm patients are safe and breathing without disturbing them several times an hour during the night. 97% of staff agreed they disturbed patients' sleep less at night using the Oxehealth system.[16]

Patients have noticed that they are being disturbed less at night, and stated that they are now able to sleep better. 64% of patients indicated that they felt the system reduces disturbance at night for them, and 62% felt that the system helps them get better sleep.[17]

> "It's good for a rested night sleep. It stops the nurses checking on you. I have been woken by torch light shining through my window at night which did panic me and made me think of the police coming to my property."
>
> *Patient*

Enabling staff to undertake least restrictive observations at night whilst empowering them to use clinical skill and judgement to intervene when needed is improving their relationship with patients.

As a result, patients feel their wellbeing is improving: 70% felt that the system has improved their wellbeing on the ward.[18]

> "I think it's the little things that make the big differences for our patients. Something like checking on our patients at night, we might have to move their duvet to check they are safe which wakes them up. It impacts their relationship with us.
>
> Being able to do remote safety checks at night will make a big difference to their wellbeing and to our relationship with them."
>
> *Chloe Cawston, Service Manager*

> "Oxehealth has been very helpful at night time. Sometimes our patients will go to bed late and when we go into their rooms to take their observations, they are in a light sleep and the torch and the noises wake them up.

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They'll then come out of their room, they might ask for a coffee and they're wide awake because we've interrupted their sleep. With mental health problems, if you don't have enough sleep it causes big problems. Oxehealth has meant we don't interrupt patients' sleep as often and it's helping their mental health to improve."

[I/S] *Healthcare Assistant*

It is important to note that staff strongly identify that the system does not replace the need for observations. It does not allow for vocal responding or therapeutic interventions, but it does allow them to spend time engaging those patients that are awake and in need of help whilst minimising disturbance to those that are resting/sleeping.

Bringing a level of calmness to the ward

The way in which staff identify and respond to potential safety incidents is changing as a result of introducing the Oxehealth system. As a result, staff have highlighted that the ward environment is calmer.

"Previously if we had an incident, we would have to sound alarms and people would come running to the room. It would cause a lot of excitement and disrupt the ward, because even though we may be intervening with one patient, it could easily trigger three others.

Now, with Oxehealth, we can go in and intervene in an incident before it gets to that point.

That's what makes it so good: it minimises chaos on the ward and reduces the anxiety of other patients. It brings a level of calmness to the ward."

[I/S] *Ward Manager*

Privacy and dignity

Staff are now able to manage patient risk in a way that is less intrusive and improves patient privacy and dignity. 73% of staff reported that they feel the Oxehealth system gives patients a greater sense of privacy and dignity at night.[19]

"Oxehealth helps with staff anxiety, as you know you're not being as intrusive with patients and it really does help us to keep our patients safe."

[I/S] *Charge Nurse*

Specific examples highlighted by staff include:

Improving privacy and dignity with disinhibited behaviour

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Case example:

> "We had a lady who was quite unwell; she would take her clothes off and wander into communal areas. We also suspected she had contracted COVID-19 and needed to be isolated.
>
> Usually, we would have her on 1-to-1 observations with the door open due to her risk. However, with male staff on observations we used Oxehealth to check on her intermittently and remotely to uphold her privacy and dignity at the same time as keeping her safe.
>
> It had two benefits, really: we were able to give her more dignity when she would take her clothes off but also as she was unable to be compliant with isolation, the system helped us to better manage her in isolation."
>
> [I/S] *Staff Nurse*

Improving privacy with vulnerable persons

"Many of our patients have histories of sexual abuse. When we have male staff on observations, they need to enter the ladies' bedrooms at night to check on them. For these ladies it can be very triggering: waking up, confused and seeing a man in their bedroom. For a moment they forget where they are and it is very disturbing for them.

Now, we can use Oxehealth to monitor them overnight discreetly and remotely which we really like, and we know it benefits these patients."

[I/S] *Ward Manager*

Whilst it is clear from patient feedback that their sense of safety and wellbeing has improved, patients have differing views on how their own sense of privacy has been impacted.

Of patients surveyed, 45% felt that the system gives them a greater sense of privacy and dignity on the ward.[20] But feedback was, unsurprisingly, mixed. The following quotations are representative of the patients' feedback:

"Since Oxehealth was installed, I'm disturbed much less at night. It's much better because no one watches you trying to do everything."

Patient

"Most of the time we have forgotten about it which is a good thing. It's unobtrusive enough to do what it needs to do without causing unnecessary stress to patients"

Patient

"Oxehealth impedes a bit on your privacy."

Patient

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"At first I was paranoid it would be able to see me get undressed, but now its fully explained I'm much more at ease and have more dignity from staff not having to constantly come in my room"

Patient

"I don't like the camera there, I feel like my privacy has been taken away"

Patient

"I don't really care [that there's a camera]. It's a little bit like "oh there's a camera there". It impacts me a bit as sometimes I wonder who is watching so I might get dressed under the covers."

Patient

When assessing the impact on privacy and dignity, this feedback indicates that staff need to take into account the presenting behaviours as well as the patient's own individual context.

[I/S] Associate Practitioner gave an example of engaging with paranoid patients:

"We have a lot of paranoid patients and some patients find it quite intrusive that we can see into their room and can be shocked that there's a camera.

We explain to them why it's there and that we only view their room if an alert goes off or doing physical health checks and that helps them to feel better about it."

Similarly, for individuals engaging in self-harming behaviour, staff highlight that patients often want them to intervene, so they find the system very helpful to them as they can get the help they need without being put on close observations that significantly impede their privacy.

"I think Oxehealth makes us very safe. It calls for help when you need it, but also when you don't think you need help. I find it hard to ask for help or admit I might need help, but with Oxehealth you know it alerts staff when you need them and they will come and help you."

Patient

Breaking the cycle of behaviour earlier on in recovery

As a result of introducing the Oxehealth system, staff now have an additional tool that enables them to take clinical decisions that were previously not available to them.

88% of staff surveyed agree the system enables them to provide better care for patients on the ward, and 91% agree the system enables them to better manage patient risk.[21]

78% of staff reported the system provides them with more information to help them make better care or clinical decisions,[22] and 70% of patients reported they feel staff care for them better when they use the system (as an additional tool).[23]

Approaching clinical decisions with knowledge that the system is there as an additional tool, such as managing the risk of self-harming behaviour differently or taking a positive risk in

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stepping down close observations, are enabling the staff to "break the cycle" of challenging behaviour for many patients.

As a result, patients are learning to engage with their recovery and develop coping skills earlier in their treatment.

<u>Case example 1</u>

> "We're not giving patients the same type of physical attention. Patients go to psychology sessions to learn about coping mechanisms and skills. For example one patient we have is currently doing art in her room. When she is on level 3s, she'll be busy talking to the staff member which is good but won't be learning to rely on the coping mechanisms and when she goes home she won't have someone sitting there like the staff member. Now, as we can monitor her through the Oxehealth system, she's learning and practicing these skills so when she goes home she'll be fine.
>
> Whereas before, we can be disempowering patients by keeping them in a bubble and not allowing them to rely on the mechanisms we teach. However at 5pm today, we know she struggles more and so we'll put her on level 3 obs to show her that we're here and supporting her. Other times, we will use the Oxehealth system as a tool to help us. Now she has time to practice those coping mechanisms and if it goes wrong here, we can support her.
>
> Occasionally we'll have some spikes but before it was a constant busy, like it was more firefighting, going from one to the next thing. Now you can take time to have that meaningful interaction and say "how are you", not just being reactive to an incident. We purposefully go to make 1-to-1 conversation, not because a patient has just tried to cut themselves. Communication has improved, patients aren't feeling like children, they are feeling more like adults."
>
> [I/S] Ward Manager

In this case example, the staff were able to provide the right care to the patient to support and encourage her to develop coping mechanisms that were needed for her recovery, and allow her to safely take responsibility for her own recovery. It also means that staff can focus their interactions in a therapeutically beneficial way and shift the relationship from "adult-child" to "adult-adult".

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Case example 2

> "We have some patients that will self-harm as a form of communication - their behaviour escalates to a point that they self-harm, knowing a staff member will need to intervene and that they will be put on 1-to-1 observations with a staff member. I think these interventions from staff can reinforce their behaviour and it doesn't always help them.
>
> With Oxehealth, we can intervene before they self-harm and make sure they're safe. I think we have a better balance with our care now. The patients are learning to engage with themselves, develop their coping skills and it breaks those behaviour cycles that can lead to a patient self-harming."
>
> **[I/S]** *Ward Manager*

In this case example, the staff were able to safely manage patient risk without giving the patient the attention they were looking for, therefore breaking the cycle of self-harm as a form of communication or "attention seeking".

Case example 3

> "We used the Oxehealth system to take a vital signs measurement of a patient in her bedroom and saw that she had a plastic bag tied around her head. We immediately went to her bedroom and removed the plastic bag and she appeared to start seizing. It took her a while to come around and when she did she claimed she couldn't see or hear anything.
>
> Typically, if this happens, we would call the on duty doctor out to the ward or take her to A&E.
>
> Unfortunately, in the past, she had been known to exaggerate how ill she had been. We decided to continue observing her in her bedroom using the Oxehealth system and take her vital signs measurements. From this we would clearly see she was safe, her presentations weren't consistent with having had a seizure and her vital signs measurements were stable.
>
> This allowed us to save valuable time for the doctor from not having to come out to the ward to assess her. It also enabled us to break that cycle of behaviour and engage her in treatment in the right way."
>
> **[I/S]** *Charge Nurse*

In this case example, the staff were able to safely monitor the patient in a way that breaks their cycle of behaviour which was preventing them from engaging with their recovery. It also saved valuable time for the staff in the trust and wider healthcare system.

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Dedicating time to reflective learning

One staff member highlighted that having the system is improving the ability for the MDT to learn from incidents:

> "The ward staff have reflective meetings where we discuss and learn from incidents that have occurred and that have caused a lot of anxiety for our staff. Previously, when we attend these meetings, even though we stay on the ward, 3 of the 5 staff members need to continue monitoring the ward and ensure patients are safe whilst the meeting is taking place.
>
> This means that each time we hold these team meetings, 3 staff members miss out on the opportunity to learn, feedback and discuss concerns in this forum.
>
> Now we have the Oxehealth tablet, it's possible to change that. We bring the tablet with us to our meetings and it means only 1 of us needs to remain on the ward. We're reassured that we're still keeping an eye on our patients and are alerted if they need us. All staff can now benefit from the meetings."

[I/S]   *Ward Manager*

Finding 3: There are early signs the system is delivering operational value

Early evidence suggests that the Oxehealth system is delivering operational efficiencies through fewer avoidable close observations, positive risk taking in stepping down observation levels, and faster observation rounds.

Fewer 1-to-1 observations

79% of staff reported that observation levels for some patients can be lowered because patient risk can be better managed using the Oxehealth system as an additional tool.[24]

> "I think Oxehealth will help us to reduce 1-to-1 observations. We regularly have high levels of patients on 1-to-1 observations for reasons of vulnerability or safeguarding from other patients. Having lots of other staff members on observations like this can also be overwhelming for other patients.
>
> For example, right now we have 7 of our 15 patients on enhanced observations and I'd say we could confidently step down 5 of those with the help of Oxehealth because they're at risk from others.
>
> We would know where the patient is, so you wouldn't need a staff member observing each patient. I think this way, we'd give more quality care and free up staff time to give to patients."
>
> *Chloe Cawston, Service Manager*

Positive risk taking in stepping down observations

Staff highlighted multiple cases where they were able to step down 1-to-1 observations earlier than they would have been able to prior to the introduction of the Oxehealth system. For example:

> "On Friday, a patient tied a ligature in her bedroom and we placed her on enhanced observations.
>
> Over the weekend we could see that she was engaging in therapeutic activities, she was out on the ward and doing puzzles.
>
> On Monday, we reviewed her observation level. We knew that having Oxehealth, we could keep a close eye on her and in a discreet way.
>
> We decided to step down her observations and were confident in doing so because we could use Oxehealth to take remote observations in between her in-person checks."
>
> **[I/S]** *Ward Manager*

Faster observation rounds

Staff have reported that they are able to conduct level 1 and 2 observations faster by using the Oxehealth system as a supportive tool.

This was particularly the case at night, where 88% of staff reported that their observation rounds were faster.[25]

Staff are already redeploying the time they save to improve the quality of care they can provide to patients. For example, staff are able to focus their time on therapeutically beneficial interactions or with those patients that are most in need.

> "It's faster to do level 1 and 2 obs. We can use the system to easily and quickly check the patients are ok and go and check in person when needed. There was one patient that had put herself at an angle that was difficult to get vital signs from the Oxehealth system.
>
> The staff tried to get a vital sign and couldn't so immediately went to check on her. She was self-harming and she eventually was ok but before who knows how it would have ended if Oxehealth hadn't helped the staff to use their clinical judgement and check the patient."
>
> [I/S] *Ward Manager*

Further analysis will be required to identify the scale of potential time efficiencies and financial savings.[26]

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Implementation learnings

Frequent patient engagement mitigated potential stress from additional activity and changes on the ward

Patients were frequently kept informed of the Oxehealth system, the implementation process and how it would impact them through regular meetings, leaflets and posters.

Chloe Cawston, Service Manager, described patient engagement on her wards during implementation of the Oxehealth system:

> "To engage and involve patients on the use of Oxehealth, we held community meetings every morning where we would give patients updates and make sure they were able to understand the process of installation.
>
> We wanted to involve the patients throughout, because ultimately, it's for them. They liked that we were open and honest with them and it improved the staff and patient relationship.
>
> When Oxehealth were coming to install the system, we put extra staff on shift and we let patients know and kept them informed all the time. Some of our patients can have paranoia and can be quite stressed at times and so having that open communication really helped them.
>
> Patients became quite proud to be involved and showed off the equipment to staff and new patients when they came in."

Open communication, effective training and regular touch points alleviated the fear factor and gave staff a strong sense of ownership

Staff were engaged and educated through weekly clinical team meetings, training sessions from Oxehealth, training resources including leaflets, presentations and a how-to video.

As [I/S] , Project Manager and Head of Electronic Systems and IG commented

> "Oxehealth have been really good at training our staff to use the Oxehealth system. Not only did we have multiple face to face meetings with the Oxehealth team, they also provided us with virtual resources like a how-to video.
>
> We set up a page on our intranet using their resources for staff to use and have access to whenever they needed to.
>
> We have had lots of engagement from staff and they have actively given feedback and ideas to improve the Oxehealth system. Staff feel ownership of the Oxehealth system instead of it being forced upon them."

Implementing the technology on the ward was a cultural shift for staff. [I/S] Matron, reflected on his own personal experience:

> "Personally, I was apprehensive of what Oxehealth was trying to do. I thought that it was trying to reduce staff numbers. I was assured that wasn't the case and that it was an addition to patient safety. Having the system in place for 2 months now it's already

starting to demonstrate that, and it's a really good enhancement on what we do on a day by day basis.

It's a culture shift, it's a bold step to use technology if you've been around for a long time but actually it's the way to go."

Similarly, Chloe Cawston, Service Manager, reflected on her experience:

"We had staff that were skeptical about the technology. We actively encouraged them to look at the work in other trusts, to phone them and speak to them about their work. The Oxehealth system has shown its value very early on and staff saw the benefits. They've now changed their minds."

Successful implementation relies on understanding how technology integrates into operational ways of working on the wards

Oxehealth worked closely with the clinical team to understand existing operational policies and protocols, and agree functionality based on their particular use cases. As part of the process, Oxehealth provided a range of tailored resources, including anonymised examples of protocols successfully implemented by other customers.

Operational policies were updated to include use of the Oxehealth system and helped staff integrate the technology into their existing ways of working. 100% of staff found the Oxehealth system easy to use.[27]

As [I/S] Matron commented:

"We had a long conversation about how to help staff use the system properly and that was in the detail of the operational policy. The operational policy helped staff to know how to use the system properly."

Ways of working evolve as staff adapt to using the system. Regular clinical team meetings are important to reflect on what is working well and what could be improved to ensure that the technology is integrated in a way that maximises its use and leads to clinical improvement for the wards.

Partnership working and good aftercare from Oxehealth supported smooth installation and successful implementation

The Service Management and Implementation Project Manager highlighted that Oxehealth's experience in implementation, open communication and quick response to support requests were important factors to successful implementation.

Chloe Cawston, Service Manager, stated:

"I had concerns when it came to installing the new technology on the ward. On the PICU, the acuity can be so variable and in the past, we have had negative experiences with contractors on the ward and not feeling safe. This wasn't the case with Oxehealth's installation - it went fantastically, we didn't even know that it was going on."

[I/S] Matron, said:

"The Oxehealth installation team were brilliant. They were very approachable and knew exactly what they were doing. If it wasn't a good day to have them on site, that would be fine. They worked well through difficult circumstances and we wouldn't have had them do it any differently."

[I/S] continued "a big positive is how quickly Oxehealth fixes problems. The ward team has been very impressed with how quickly Oxehealth fix problems - sometimes within minutes! Oxehealth provides the aftercare that you don't receive with other technology."

[I/S] Project Manager and Head of Electronic Systems and IG, commented:

"Oxehealth were always completely open and up front with the wards when it came to installation and timescales. It allowed us to clearly communicate with our patients and manage their expectations.

What worked well throughout the process of operationalising the Oxehealth system was that we had direct contact links with Oxehealth through phone calls, emails and a help button on the system. It helped not having to go through our own IT support because we had instant responses from Oxehealth, even at night.

We implemented the technology at the same time as the COVID-19 pandemic hit. Our own IT department was flat out, trying to mobilise our workforce to work from home so staff were redeployed. We really benefited from the support of Oxehealth during that time."

On working with the Oxehealth team, Chloe Cawston, Service Manager, said:

"What I valued most was how down to earth everyone was. I felt like I could pick up the phone and ask the "stupid question". Everyone was approachable and friendly, and there if I needed them."

There are improvement areas for future implementations as [I/S] Ward Manager, suggested:

"One thing that should be considered when the system is being installed is the type of ward and patient cohort. The ward can become unsettled and patients can be put off. Two teams came onto the ward, one from the Trust and one from Oxehealth. If only 1 team come on at a time for the Oxehealth implementation, it would have been less unsettling for the ward"

There has been regular engagement from staff helping with debugging and future product improvements through feedback channels including weekly clinical team meetings, Oxehealth's 24/7 customer service line and feedback portal on the Oxehealth system.

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Methodology

An evaluation of the Oxehealth system implementation and early insights was conducted after 3 months of use on Ardleigh ward, 18 bedrooms female acute, and Peter Bruff ward, 17-bedroom mixed assessment unit. The Oxehealth system was installed in all rooms on both wards and went live in April 2020.

The project was sponsored by Sally Morris, Chief Executive, and the Executive Team and led by [I/S] Director of ITT, Business Analysis & Reporting. Lizzie Wells and [I/S] [I/S] provided clinical sponsorship of the project, and [I/S] Head of Electronic Systems and IG, provided project management support.

To identify early insights and implementation learnings, the following data were collected.

Staff perceptions were evaluated by:
- 33 17-question questionnaires, 14 from Ardleigh and 19 from Peter Bruff.
- 1 focus group with Ardleigh ward with 5 staff members.
- 3 one to one interviews with Peter Bruff ward:
  - [I/S] Senior Healthcare Assistant, Peter Bruff
  - [I/S] Staff Nurse, Peter Bruff
  - [I/S] Associate Practitioner, Peter Bruff

Topics covered in the questionnaire, focus group and interviews were patient safety, patient care, patient experience, staff experience, and staff ways of working with the Oxehealth system.

Questionnaires required staff to answer on a scale of 1 to 6. 1, 2 and 3 were strongly disagree, disagree and slightly disagree, respectively, 4, 5 and 6 were slightly agree, agree and strongly agree, respectively.

Patient perceptions were evaluated by:
- 15 9-question questionnaires, 9 from Ardleigh and 6 from Peter Bruff.
- 2 focus groups with patients on Ardleigh ward with 7 patients total.
- 5 one to one interviews with patients on Peter Bruff ward.

Topics covered in the questionnaire and focus groups were patient sense of wellbeing, engagement, safety, privacy and dignity.

Questionnaires required patients to answer on a scale of 1 to 5. 1 and 2 were strongly disagree and disagree, respectively. 3 was no opinion. 4 and 5 were agree and strongly agree. The number of survey responses analysed may be lower than stated in the methodology section as survey results were indexed to exclude 'no opinion' responses.

Implementation learnings were identified by 6 one to one interviews with:
  - [I/S], Ward Manager, Ardleigh[20]
  - [I/S] Matron, Peter Bruff
  - [I/S] Matron, Ardleigh

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- o [I/S] Service Manager
- o Chloe Clawston, Service Manager
- o [I/S] Project Leader and Head of Electronic Systems and IG

Implementation learning interviews covered installation, staff and patient onboarding (engagement, education & training), onboarding effects including how it impacted on staff-patient relationships, and advice for working in partnership to successfully implement technology to drive safety & quality improvements.

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Endnotes

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[1] N = 33, 32 and 31, respectively.
[2] N = 12
[3] N = 31
[4] N = 10 and 13 respectively
[5] N = 33
[6] N = 10
[7] N = 33
[8] N = 32
[9] N = 33
[10] N = 32 and 31, respectively
[11] N = 32 and 29, respectively
[12] N = 12
[13] N = 11
[14] N = 33
[15] N = 31. Staff required to answer "Yes" or "No
[16] N = 31
[17] N = 14 and 13, respectively
[18] N = 10
[19] N = 33
[20] N = 11
[21] N = 33
[22] N = 32
[23] N = 10
[24] N = 33
[25] N = 32
[26] Time efficiencies and financial savings analyses are part of the longer-term benefits realisation plan in place.
[27] N = 32