		Agenda Item No: 7a
SUMMARY REPORT	**BOARD OF DIRECTORS PART 2**	**30 September 2020**

Report Title:	Oxehealth Digital Care Assistant					
Executive/Non-Executive Lead:	SALLY MORRIS					
Report Author(s):	[I/S]					
Report discussed previously at:	Executive Operation Committee (EOC)					
Level of Assurance:	Level 1		Level 2		Level 3	✓

Purpose of the Report

This report provides:

	Approval	✓
	Discussion	✓
	Information	✓

A recommendation to the Board of the further roll-out, purchase and installation of a new digital system to support quality and safety across a number of the Trust's inpatient mental health wards.

Oxehealth's Digital Care Assistant has already been installed in four wards as a pilot project. This report recommends the purchase of further units to enable an additional 13 wards to use this innovative software at an annual cost of £25k per ward (circa £400k per annum). The total lifecycle cost of the contract to provide this across 17 wards for 4 years is £1,700k plus initial set up costs and enabling works of £123k.

Recommendations/Action Required

The Board of Directors is asked to:

1. Approve the early rollout of Oxehealth's Digital Care Assistant at a revenue cost of £1,823k over 4 years.
2. Approve the completion of a full evaluation of the realised qualitative and quantitative benefits of utilising the Digital Care Assistant, at the end of this financial year.

Summary of Key Issues

Following merger, EPUT has focused on continued improvements in patient safety. As part of this process, the Trust's clinical innovation group, known as EPUT Lab, identified Oxehealth's Digital Care Assistant as a suitable option for EPUT to consider as part of the Trust's emerging patient safety strategy.

EPUT has already invested over £2.4m in physical adaptations in all of our inpatient mental health wards and promoted a range of initiatives across the organisation.

Nationally, mental health organisations have experienced higher levels of acuity across their inpatient services. This has resulted in an increased risk of incidents of self-harm, mainly from self-ligature (non-anchored ligature).

Despite the significant investment identified above to eliminate fixed ligature points, the risk of non-anchored ligature incidents remains. Most of these incidents take place in bedrooms and bathrooms. This is traditionally mitigated by clinical risk management and the use of observation levels undertaken by ward staff which is resource intensive. Current observation

13368

practice is reliant on one to one supervision and is seen by patients as restrictive and at times punitive. At night physical checks frequently require staff to enter the bedroom of sleeping patients which is intrusive and disruptive.

The EOC previously agreed funding for pilots on four wards:

- Ardleigh (Acute Admission Ward – April 2020)
- Peter Bruff (Assessment Unit, North Locality – April 2020)
- Chelmer (Acute Admission Ward – August 2020)
- Hadleigh Ward (PICU Ward – July 2020)

The Oxehealth's Digital Care Assistant device was installed in all bedrooms.

The findings of the pilot wards and additional information on benefits gained by other organisations were provided to the EOC. As a result of these findings the EOC agreed to support a recommendation to rollout this product to a further 13 additional wards.

The EOC discussed at length the impact of an early implementation rather than waiting for the completion of a more detailed review of the benefits of this system that would be derived from analysis of all 4 pilot wards over an extended period followed by the completion of a full business case. This would delay the start of the implementation until April 2021.

However, as there was potential for safety advantages to be gained for the trust through an early implementation the EOC agreed that, on the balance of probabilities, the rollout should occur as soon as possible as early results from the pilots plus evidence provided by other NHS organisations gave sufficient confidence that the risk of this investment was minimal.

In 2019/20 additional bank and agency shifts booked for observations on these 17 wards totalled nearly 190,000 hours at an estimated cost of over £2.8m. A reduction in the requirement for additional staffing should be facilitated by Oxehealth, as identified by other organisations and EPUT pilots.

Additional system efficiency improvements may also be achievable, such as a reduction in length of stay which could reduce Out of Area bed requirements, and a reduction in physical injuries with associated need to access acute healthcare services.

These efficiencies will be assessed as part of the in-depth post implementation review.

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	✓

Relationship to the Board Assurance Framework (BAF)	
Are any existing risks in the BAF affected?	
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	

13369

EPUT009011_0002

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 £	£1,823k
	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

PICU	Psychiatric Intensive Care Unit		

Supporting Documents and/or Further Reading

Lead

Name Sally Morris **Job Title: Chief Executive Officer**

13370

Agenda Item: 7a
Board of Directors
30 September 2020

| EPUT |

| Oxehealth Digital Care Assistant |

| 1 | Purpose of Report |

The purpose of this report is to recommend to the Board the further roll-out, purchase and installation of a new digital system to support quality and safety across a number of the Trust's inpatient mental health wards.

Oxehealth's Digital Care Assistant has already been installed in four wards as a pilot project. This report recommends the purchase of further units to enable an additional 13 wards to use this innovative software at an annual cost of £25k per ward (circa £400k per annum). The total lifecycle cost of the contract to provide this across 17 wards for 4 years is £1,700k plus initial set up costs and enabling works of £123k.

| 2. | Background |

Following merger, EPUT has focused on continued improvements in patient safety. As part of this process, the Trust's clinical innovation group, known as EPUT Lab, identified Oxehealth's Digital Care Assistant as a suitable option for EPUT to consider as part of the Trust's emerging patient safety strategy.

EPUT has already invested over £2.4m in physical adaptations in all of our inpatient mental health wards and promoted a range of initiatives across the organisation. The Trust has invested in a wide range of anti-ligature fixtures and fittings including:
- curtain rails,
- ceiling fittings,
- windows,
- doors,
- toilets, and
- door top alarms in bedrooms and bathrooms

Nationally, mental health organisations have experienced higher levels of acuity across their inpatient services. This has resulted in an increased risk of incidents of self-harm, mainly from self-ligature (non-anchored ligature).

Despite the significant investment identified above to eliminate fixed ligature points, the risk of non-anchored ligature incidents remains. Most of these incidents take place in bedrooms and bathrooms. This is traditionally mitigated by clinical risk management and the use of observation levels undertaken by ward staff which is resource intensive. Current observation practice is reliant on one to one supervision and is seen by patients as restrictive and at times punitive. At night physical checks frequently require staff to enter the bedroom of sleeping patients which is intrusive and disruptive.

| 3. | Oxehealth's Digital Care Assistant |

In April 2019, discussions with UCLP led clinicians in EPUT Lab to look at the product that was being piloted in Oxford Health NHS Foundation Trust. Early work had identified a range of safety benefits including reduction in the number ligatures, anchored and non-anchored.

Oxehealth's Digital Care Assistant is an innovative solution aimed at improving safety and patient experience on inpatient mental health wards. It uses an optical sensor to monitor a room as it can detect patient movement as well as measuring their vital signs. The advantage of this system is that it is wall mounted (non-ligature) and does not require any part of the device or sensor to be physically attached to the patient. This solution works even in total darkness.

Oxehealth's Digital Care Assistant has been proven to reduce patient risks as well as enable a better patient experience including better sleep, feeling safer and a greater sense of privacy at night. In addition, the system also 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 now deployed the Digital Care Assistant in seclusion rooms to increase physical health monitoring, especially post rapid tranquillisation. The system has helped to reduce restrictive Interventions and improve adherence to physical health monitoring policies. The Digital Care Assistant also alerts staff earlier to potentially life-threatening incidents such as cessation of breathing and changes in behaviour.

Two reports have been published by NHS Trusts (Coventry & Warwickshire Partnership NHS Trust / Oxford Health NHS Foundation Trust) on the real-world evidence of the Digital Care Assistant. The publications state that deploying Digital Care Assistant delivered the following benefits:

- 71% reduction in enhanced observations; 8,260 clinical hours saved annually on one 24 bed Older Adult Ward
- Staff reported improved patient safety and confidence
- Carers reported greater peace of mind
- Rated as an example of outstanding practice by the CQC
- Patients reported feeling safer, sleeping better and greater privacy
- 33% reduction in falls at night (Older Adult ward)
- 56% reduction in A&E demand (Older Adult ward)

The evidence from other organisations is attached in Appendix 1.

Oxehealth was asked to attend EPUT LAB for a demonstration of the digital assistant and a discussion about the product. This product was very well received by the clinicians. As a result, further discussions took place with the mental health senior management to ensure they were supportive of piloting this product on the wards. Discussions also took place with the organisations that were using this product to get their feedback. Feedback from other organisation was good and they agreed to share their findings with the Trust.

Oxehealth's Digital Assistant was supported by the Trust's IM&T Strategy Group and subsequently EPUT's Executive Operational Committee (EOC). The EOC agreed funding for pilots on four wards:

- Ardleigh (Acute Admission Ward – April 2020)
- Peter Bruff (Assessment Unit, North Locality – April 2020)
- Chelmer (Acute Admission Ward – August 2020)
- Hadleigh Ward (PICU Ward – July 2020)

The Oxehealth's Digital Care Assistant device was installed in all bedrooms.

4.	Outcome of implementation of Oxehealth's Digital Assistant

The project started in February 2020 and the first wards to go live were Ardleigh and Peter Bruff in April 2020. The implementation was delayed and impacted on Hadleigh and Chelmer ward due to suppliers concerns around safety of their staff due to Covid-19 positive patients on the wards.

Early Evaluation – Pilot Wards

The evaluation of the Oxehealth's Digital Care Assistant implementation and an early insight report was presented after 3 months of use on Ardleigh ward, (18 bedded female acute ward), and Peter Bruff ward, (17-bedded mixed assessment unit) and went live in April 2020.

The insight report identified the following key findings:

Safety on the wards improved. There are fewer incidents and less harm to patients, and overall patients feel safer:
- 91% of staff working on the two early wards agreed that the Oxehealth device improves patient safety on the ward.
- 94% of staff surveyed stated that the system helped them to identify safety incidents they may not have known about.
- 90% of staff stated that the system had enabled them to prevent a potential incident from occurring.
- 75% of patients surveyed felt that the system helped them to feel safer.
- In addition, there was improved physical health monitoring, and improved management of COVID-19 transmission risk.

There is a positive impact on therapeutic engagement with patients and patient experience.

- 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 this device, 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% of patients 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% of staff 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).

Operational Value

There are early signs the system is also 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.

5. Emerging Safety Improvement Strategy

The steps to improve safety across the Trust's services form part of EPUT's emerging safety improvement strategy. This will link with recent national guidance and digital solutions will be included as part of EPUT's development path alongside physical, operational and relational security and safety initiatives.

As detailed above there are a number of measurable safety improvements arising from the Oxehealth's Digital Care Assistant. These meet the Trust aspiration to provide high quality and safe care to our patients. Early indications will include:

- Patient experience on our inpatient wards
- Carer/ relative feedback and improved confidence in EPUT services
- Improved physical health monitoring
- Reduction in 1-1 observations
- Reduction in serious incidents
- Reductions in Datix incidents
- Improved staff morale and staff survey results
- Improved commissioner and CQC feedback

It is also anticipated that with the wider rollout of this device and a focus on safety that recruitment and retention of staff could also improve over time.

6. Rollout of Oxehealth's Digital Assistant to 13 additional wards

The above findings and additional information on benefits gained by other organisations were provided to the EOC. As a result of these findings the EOC agreed to support a recommendation to rollout this product to a further 13 additional wards. These wards would include all acute admissions wards, PICU Wards and Children's Wards, equating to a total of 17 wards in total.

EOC also requested that monitoring of the wards using Oxehealth's Digital Care Assistant would continue so that a further evaluation would be provided at the end of this financial year. Due to the evidence detailed in Appendix 1 and early indications from EPUT pilot wards, the EOC believed that there was sufficient certainty to recommend to the Board that

this investment would be justified due to the potential safety and operational advantages of this system.

The EOC discussed at length the impact of an early implementation rather than waiting for the completion of a more detailed review of the benefits of this system that would be derived from analysis of all 4 pilot wards over an extended period followed by the completion of a full business case. This would delay the start of the implementation until April 2021.

However, as there was potential for safety advantages to be gained for the trust through an early implementation the EOC agreed that, on the balance of probabilities, the rollout should occur as soon as possible as early results from the pilots plus evidence provided by other NHS organisations gave sufficient confidence that the risk of this investment was minimal.

The Trust has established a project board to oversee the implementation and monitoring of Oxehealth's Digital Care Assistant Programme. Following the decision by the Board, the Project team will work closely with the supplier to build upon the existing implementation plan and learning from the pilot sites to rollout the implementation to the 13 additional wards during the remainder of this financial year. This will, of course be subject to the emerging Covid19 phase 3 plan and winter pressures.

Learning from the EPUT pilots has also identified that changes are required to the operational process and behaviours of staff working in wards where Oxehealth's Digital Care Assistant device is deployed. The Trust has developed new operational procedures aligned to those of other organisations and these wards have recognised the need for cultural and behavioural changes to maximise the benefit of utilising this device.

7. Financial Implications Summary

	£000					
	20/21	21/22	22/23	23/24	24/25	Total
Enabling Works (Estates)	62.8	-	-	-	-	62.8
Install and Configuration	60.2	-	-	-	-	60.2
Annual Service Fee	212.5	425.0	425.0	425.0	212.5	1,700.0
Total Costs	**335.5**	**425.0**	**425.0**	**425.0**	**212.5**	**1,823.0**

Successful deployment and operation of the Oxehealth technology is also dependent on good Wi-Fi connectivity in all rooms. This is already being addressed and will be provided through the Trust Wi-Fi improvement programme. These ward areas should therefore be prioritised within that project. There is no additional cost to add into this proposal as this work has already been agreed and is progressing.

The total revenue cost of the Oxehealth solution on 17 wards is £1,823k over a four year contract. The Trust's SFIs require Board approval as this exceeds £1m.

This is clearly a key safety and quality initiative, it is also recognised that other organisations have also realised efficiencies through reduced levels of observations. It is therefore reasonable to assume that EPUT will see similar benefits.

In 2019/20 additional bank and agency shifts booked for observations on these 17 wards totalled nearly 190,000 hours at an estimated cost of over £2.8m. A reduction in the

requirement for additional staffing should be facilitated by Oxehealth, as identified by other organisations and EPUT pilots.

Additional system efficiency improvements may also be achievable, such as a reduction in length of stay which could reduce Out of Area bed requirements, and a reduction in physical injuries with associated need to access acute healthcare services.

These efficiencies will also be assessed as part of the in-depth post implementation review.

This technology is only available via Oxehealth therefore a single supplier. If the additional 13 wards is approved the Trust will go through the framework to procure. Oxehealth are currently on the G-cloud framework.

8. Recommendation

The EOC recommend that the Board support the early rollout of Oxehealth's Digital Care Assistant to support staff and the organisation to improve Patient Safety on our wards.

9.   Action Required

The Board is asked to:

- Approve the early rollout of Oxehealth's Digital Care Assistant at a revenue cost of £1,823k over four years.
- Approve the completion of a full evaluation of the realised qualitative and quantitative benefits of utilising the Digital Care Assistant, at the end of this financial year.

Report prepared by:
[I/S]
Director of ITT, Business analysis & Reporting
On behalf of:

Andy Brogan
Chief Operation Officer and Deputy Chief Executive

13376

EPUT009011_0009

Mapping evidence from outside EPUT to outcomes

The following evidence is public information on clinical and operational outcomes from use of the technology in other NHS mental health trusts:

Benefit	Desired Outcome	Services	Mapping the Evidence
Reduce falls	o Reduced falls in bedrooms o Reduced severity of harm o Reduced demand for A&E services	Older Adult	Two-year (intervention period) before & after clinical study in 24-bed Older Adult hospital: o **48% reduction in falls** in bedrooms o 82% reduction in harmful falls o 49% reduction in paramedic callouts o 68% reduction in visits to A&E *Links:* *Publication - submitted* *8-month interim report*
Reduce self-harm and assaults	o Reduced incidences & early warnings to self-harm o Reduced incidences & early warnings to assaults	Acute, PICU	One-year (intervention period) before & after and partial cohort clinical study in 4 Acute wards and 1 PICU ward: o **22% reduction in self-harm** in Acute bedrooms (66% reduction in bathroom ligatures in Female Acute) o **15-26% reduction in assaults** in Acute & PICU bedrooms respectively *Links:* *Webinar (QNPICU Webinar #7 – 17 July 2020) methodology & results; publication in progress* *Webinar presentation notes*
Reduce rapid tranquillisation events	o Reduced incidences of rapid tranquillisation	PICU	One-year (intervention period) before & after clinical study in male PICU ward: o **40% reduction in rapid tranquillisation** related to assaults o Staff found they could manage patient safety using less restrictive practices *Links:* *Webinar (QNPICU Webinar #7 – 17 July 2020) methodology & results; publication in progress* *Webinar presentation notes*
Improve physical health monitoring	o Improve adherence to physical health monitoring o Earlier detection of physical health deterioration	All wards and seclusion rooms	Staff can now measure the **medically accurate pulse & breathing rate** of resting patients without entering a room. 8 NHS trusts are using the system in seclusion and/or S136 suites. *Links:* *Patient story: identifying early signs of physical health deterioration to a medical emergency* *Patient story: monitoring physical health comorbidities remotely*
Improve patient experience at night, including sleep and privacy/dignity	o Digitally assisted nursing observations that are as safe as traditional methods o Improved sense of sleep at night o Improved sense of privacy at night	All	Service evaluation in Vaughan Thomas ward: o **Digitally assisted nursing observations are as safe as** conventional in-person observations (>17,000 observations over 755 patient nights) o Patients surveyed reported improved sense of sleep (100% agree), safety (100%) and privacy/dignity (86%)

13377

	o Improved sense of safety at night		o 78% of staff surveyed agreed patient privacy & dignity had improved o 94% agreed that the same level of safety was maintained vs. conventional in-person observations Very preliminary medical data suggests that use does not lead to worse sleep, more use of medication or longer length of stay. *Links:* *[Publication (Barrera et al.)](#) – BMJ Evidence-Based Mental Health* *[Report](#)*
Improve staff experience	o Improved confidence in managing patient risk o Improved sense of safety o Improved peace of mind	All	Staff experience has been evaluated through surveys, interviews and focus groups. Some of these results are public, including results from Coventry & Warwickshire Partnership NHS Trust: o 91% (n=23) and 92% (n= 18) reported the technology improves patient safety o 91% (n=23) reported the technology allows them to make better care/clinical decisions o 92% (n= 18) reported that the technology helps them to provide better care o 82% (n=18) would prefer to have the technology to support them through the night. *Other links:* *[Early insights report](#)*

Further benefits

More effective care planning: clinicians are able to obtain more information on a patient's activity, behaviour and vital signs trends which is being used to support and assess the impact of care interventions over time.

For example: read [I/S] story where objective data was invaluable in understanding behaviour and planning care, [I/S] story where proactive care and earlier intervention enabled positive behaviour change, and [I/S] story where change in care decisions helped to break the cycle of behaviour.

Objective, auditable data for incident reviews: under strict governance, the trust may choose to obtain/retain objective data (vital signs data, activity reports, video data) for serious incidents to build individual and organisational learnings.

Safer and more effective care can deliver productivity and financial benefits for the trust. For example, Coventry and Warwickshire released 8,260 clinical hours per year in their 24-bed dementia facility, equivalent to over £150k per year. This was predominantly by reducing 1-2-1 observations by 71% (at the same time as reducing falls & injuries on the ward). As a result, they are changing staffing models to unlock cashable savings.

In addition, it is hugely costly for organisations to undertake serious incident review – not only financially but from a staff morale and productivity perspective. Having objective & auditable data to document and learn from serious incidents can save valuable time & money in these extenuating circumstances.

13378