

July 2023

Investigating the impact of implementing Oxevision at Central and North West London NHS behavioral health provider

Background

Central and North West London NHS behavioral health provider (CNWL) partnered with Oxehealth to improve the safety and quality of their inpatient care.

CNWL integrated Oxevision into routine clinical practice on 10 units (5 geriatric, 4 high intensity, 1 low secure unit) between November 2020 and March 2021. Oxevision is a contact-free, vision-based patient monitoring system that delivers vital sign and activity insights to clinical teams.

Methods

A mixed methods study was conducted to evaluate the impact of implementing Oxevision on the safety, quality and efficiency of care at CNWL.

A before-and-after quantitative analysis of incident data (from routine incident reports) and financial data was completed.¹ Outcomes investigated were: falls (geriatric units only); self-harm (high intensity and low secure units only); assaults (all units); use of restraints (high intensity and low secure units only); and monthly agency spend related to enhanced observations (all units). 7-12 months of baseline (pre go-live) data and 7-12 months of post go-live data were collected (length of evaluation periods varied by unit) and percentage change was calculated for each outcome. To allow for a fair comparison between the two periods, data were weighted to 100% occupancy and annualized.

Staff, patient and relative feedback was collected via questionnaires (staff: $N = 151$; patients: $N = 89$; relatives: $N = 15$) 5-6 months after Oxevision went live. Interviews and focus groups with staff were also carried out. Outcomes examined included: staff and patient safety; quality of physical health monitoring and care in general; and patient disturbance and privacy. Respondents were asked both open- and closed-ended questions. For the latter, staff were required to state whether they believed each outcome had improved with the introduction of Oxevision on a scale of 1 to 6 (1: strongly disagree; 6: strongly agree), and patients answered on a scale of 1 to 5 (1: much worse; 3: no difference; 5: much better).

¹ One of the geriatric units was identified as an extreme outlier with regard to incident and financial data and was therefore excluded from these analyses. Another geriatric unit was identified as an extreme outlier with regard to financial data only and was therefore excluded from this analysis. Potential confounding factors were evaluated via interviews with Unit Managers; however these are not described in this brief report.

Findings

Incident data

- Across the 4 geriatric units, there was a 43% decrease in bedroom falls at night and a 36% decrease in unit falls at night (falls taking place anywhere on the unit, including the bedroom)
- Self-harm incident rates were too low to conduct a meaningful analysis²
- There was a 29% reduction in assaults across the 4 high intensity units and a 57% reduction across the 4 geriatric units. On the low secure unit, assaults increased by 15% but the sample size was relatively low (pre go-live $N = 18$; post go-live $N = 21$)
- Use of restraints decreased by 26% for the high intensity units. The number of restraints occurring on the low secure unit was too low to conduct a meaningful analysis³

Financial data

- Agency spend related to enhanced observations decreased by 14% from the pre to the post go-live period across the 8 units included in the analysis, demonstrating a positive return on investment (ROI)

Staff, patient and relative feedback

- Feedback suggested that unit safety for both patients and staff improved after Oxevision was implemented - 99% of staff, 67% of patients and 79% of relatives reported that patient safety had improved⁴ and 89% of staff felt better able to manage their own safety

"The system really helps when monitoring an aggressive patient and preparing to go into their room... We're at least not going in blindly and putting ourselves at risk."

Staff member, geriatric unit

"It was about three o'clock when I woke up and rushed to the bathroom...hitting my shoulder and head against the wall...a staff member came straight to my room to check on me. The system had alerted him that I had gotten out of bed and he came to check on me in case I needed any assistance...It felt very reassuring to know that they came to check on me so quickly".

Patient, geriatric unit

- 90% of staff felt that Oxevision helped them to identify physical health deterioration in patients and 92% said that the system made it easier to adhere to policy for taking physical health observations post-PRN

"When we've given our patients PRN medication they usually stay in their rooms and have a cool off period. During this time we need to monitor their physical health, but...it's very hard to approach them. The system has been very useful in situations like this where we need to make sure we're checking on vital signs even if the patient doesn't want to see us."

Unit Manager, high intensity unit

² Across all units: pre go-live $N = 5$; post go-live $N = 6$.

³ Pre go-live $N = 4$; post go-live $N = 5$.

⁴ 94% of patients and 100% of relatives thought that patient safety had improved or at least been maintained.

⁵ 92% of patients and 100% of relatives perceived the quality of care to be better or at least the same as before.

- Almost all staff (93%) felt able to provide patients with higher quality care due to Oxevision being implemented - a view also expressed by 61% of patients and 77% of relatives⁵
- 89% of staff reported that the system supported them to manage patient risk. This led to less restrictive practices being used

"The system has been helpful in supporting care plans. We have some patients who can be quite restless at night and our observations don't help this. In multi-disciplinary team meetings we have been able to agree on using Oxevision remote observations at night in order to help them get better sleep."

Unit Manager, geriatric unit

"I like that the system can help prevent restrictive interventions or restraints from happening. It's great for us because we don't want to do any of that, and ideally it's always a last resort. In that sense it's a very good system and it's helpful as an extra tool."

Nurse, high intensity unit

- 80% of staff said that Oxevision created more time to engage with patients, while 94% of patients and 71% of relatives felt that staff had the same amount or more time to engage

"Less time writing reports, more time with patients. Less time walking around and we've got a better rapport with [patients]. Doing more activities as well. We're able to open the garden or open the gym for them."

Staff member, high intensity unit

"Staff interact with us a bit more, we only see them less at night. I think they've always been very busy, but you can see that they have more time for us with Oxevision. We still get a good amount of interaction with them."

Patient, high intensity unit

- Most patients (67%) reported being able to sleep better at night due to staff disturbing them less. 89% of staff and 62% of relatives also felt that Oxevision helped to reduce sleep disturbance

"I've been in the behavioral health system for a total of 7 years, since I was 18. Before, the staff would come in all the time during the night, turn on the lights, and would wake you up. It was very stressful, especially when on medication. Now, they don't disturb sleep as much and I think the system is great for that."

Patient, high intensity unit

- 76% of patients and 93% of relatives said that patient privacy was either improved or maintained with the introduction of Oxevision.

"I don't feel like it's impacting your privacy in a bad way."

Patient, high intensity unit

Discussion

The results of this mixed methods study indicate that implementing Oxevision at CNWL supported clinical teams to deliver various improvements in safety and care quality and efficiency on units that had the system in place.

Reductions were observed in falls, assaults and restraints. Agency spend relating to enhanced observations also decreased, demonstrating a positive ROI. Staff, patient and relative feedback was positive for the majority of respondents across all study outcomes. While most patients reported that privacy improved or was maintained with the introduction of Oxevision, a small proportion felt their privacy was negatively impacted, highlighting the importance of good education around the system.

During the course of this study, CNWL had several projects running to reduce assaults and falls which could have contributed to the reductions observed in these incidents. Nevertheless, overall the findings suggest that, by adopting Oxevision into existing clinical practice on behavioral health inpatient units, staff can improve the safety, quality and efficiency of the care delivered, and the experiences of patients and staff.

ABOUT CNWL

Central and North West London NHS Foundation Trust (CNWL) is a provider of psychiatric, sexual health, physical health, addictions, eating disorder and learning disability services. It is one of the largest NHS trusts in the UK, caring for people with a wide range of physical and psychiatric needs.