# THE COVID-19 VIRTUAL WARD

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1. Lister Hospital, East and North Hertfordrshire Trust
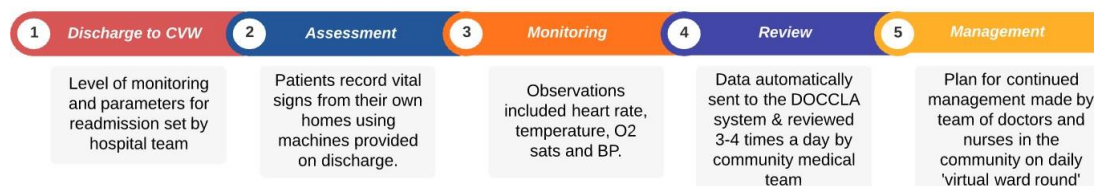2. Hertfordshire Community NHS Trust

PATIENT SAFETY CONGRESS

NHS East and North Hertfordshire NHS Trust

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## Overview

To help reduce the pressure on hospitals created by the COVID-19 pandemic, remote monitoring systems were established across the country[1][2]. Many of these, such as 'Oximetry @Home' were focused on pre-hospital patients to avoid unnecessary admissions. The COVID-19 Virtual Ward (CVW) model outlined in this study was designed as a 'step down' model, used to facilitate supported early discharge from hospital for patients who were clinically improving but still requiring ongoing care such as oxygen or medication. This provides a novel approach for reducing the length of hospital admission and enables the safe management of more complex patients in the community as well as increasing hospital capacity at times of high demand.
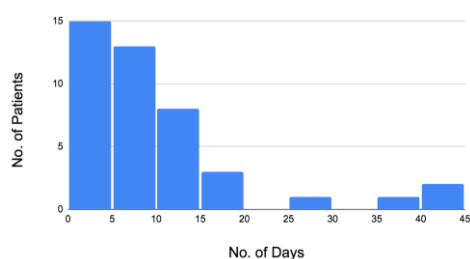
**COVID19 Virtual Ward Model**

| 1 Discharge to CVW | 2 Assessment | 3 Monitoring | 4 Review | 5 Management |
|---|---|---|---|---|
| Level of monitoring and parameters for readmission set by hospital team | Patients record vital signs from their own homes using machines provided on discharge. | Observations included heart rate, temperature, O2 sats and BP. | Data automatically sent to the DOCCLA system & reviewed 3-4 times a day by community medical team | Plan for continued management made by team of doctors and nurses in the community on daily 'virtual ward round' |

## Objective and methods

1. Assess the effectiveness of the Virtual Ward in alleviating hospital pressure
2. Assess the safety of the early discharge model

- Retrospective review of all referrals to the CVW from a single district general hospital from January 27th 2021 to March 2nd 2021.
- Data collected on treatment required at discharge from hospital: including supplemental oxygen, antibiotics and steroids
- Length of stay on virtual ward, length of hospital admission and days requiring oxygen once discharged also recorded.

## Results

- 43 referrals accepted
- 31 discharged from hospital with supplemental oxygen
- 9.3% (n=4) required readmission
  - All readmissions occurred within 5 days of monitoring on CVW
  - No readmission longer than 6 days
  - 0 mortality or requirement for increased ventilatory support eg NIV or Intubation
- Patients discharged with supplemental O2 used it for an average of 11.6 days on the CVW
  - Cumulative total of 336 ward days
- Estimated 8.4 ± 2.25 (95% CI) days saved per patient based on ongoing oxygen requirement
- Average 13.7 days spent on CVW



*Length of hospital stay prior to discharge to CVW*



Legend: 0L, 0.5L, 1L, 2L, 3L, 4L
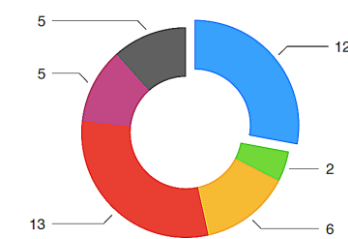
*Oxygen requirements on discharge to CVW*
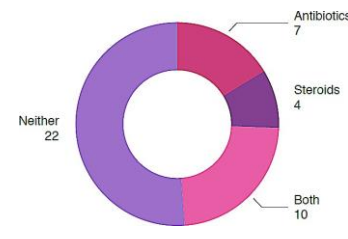


*Medication on discharge to CVW*

## Conclusion

- Our data indicates a reduction in the length of hospital stay by an estimated 8.4 ± 2.25 days
- This was achieved safely and was compliant with current recommendations for ambulatory and emergency pathways, which suggest an optimal conversion rate of 10% for escalation to readmission[4]
- The ability to re-stablise all readmitted patients without the need for increased ventilatory support or ITU admission further supports the safety of this model
- Further protocols on discharge from the Virtual Ward may facilitate a faster flow of patients increasing capacity whilst maintaining patient safety

## Next step/ Future development

- An opportunity to create a streamlined protocol that can be implemented rapidly for future pandemics without compromising high level care and patient safety.
- A system that can be implemented for other diseases such as heart failure[5], COPD, asthma and joint replacement surgery
- A model for closer collaboration between primary and secondary care with potential to include the wider integrated care system to achieve positive outcomes and improve patient safety.

## Contact

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## References

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