Integrated supported weaning off oxygen at home for acute illness.

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1. Croydon Health Services NHS Trust

2. South-West London Virtual Hub

For the people of the London Borough of Croydon

Introduction

There are increasing pieces of evidence of the benefits of Virtual Wards (VW). The National Health Service defines a virtual ward as a safe and efficient alternative to NHS bedded care. VW supports patients who would otherwise be in the hospital receiving acute care and treatments.

The Croydon Respiratory Team (CRT) provides integrated respiratory services for patients with chronic respiratory conditions, from home to acute on chronic management of care in the hospital and the community.

The combination of VW and CRT equipped them to provide services in managing the weaning of oxygen from home. Learning from the lessons learned during the COVID-19 pandemic, remote monitoring services used in VW provided a significant understanding to facilitate safe weaning off oxygen in acute illnesses at home under the care of a virtual ward and community-based respiratory specialist.[1]

However, there remains to be an increasing burden of hospital resources which continues to be a challenge in providing healthcare services.

Objective:

To provide a supported weaning off oxygen service for patients with acute illness, within the comfort of their homes

Method:

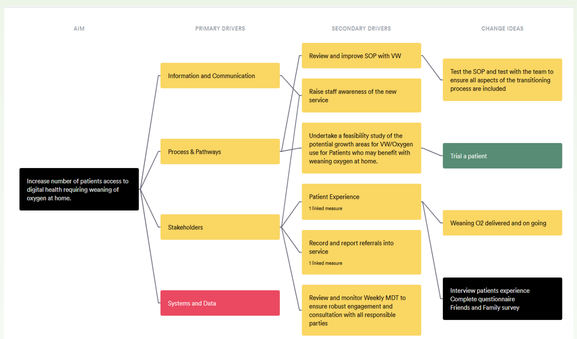
The CRT-VW weaning oxygen pathway was developed by MDT and approved by the MAG Trust Committee. Then registered at the Trust Life QI system.

Eligible patients were approached and consented, allowing sufficient time to ask questions. They were discharged home with weaning off, home oxygen, and supported remotely by Virtual Ward and Croydon Respiratory Team.

Inclusion Criteria	Exclusion Criteria
Patients aged 18 or over	Patients aged below 18 years
Persistent hypoxemia requiring oxygen, to maintain Sp02 at an acceptable level as per prescription, administration, and monitoring of oxygen in adults.	Unable to cope at home
Suitable and safe for oxygen at home	Cyanosis, confusion,
Registered with a General Practitioner and lives in Croydon	Type 2 respiratory failure
Medically stable	Fails oxygen risk assessment e.g., smoker/falls

Gantt Chart and Strategies for Change

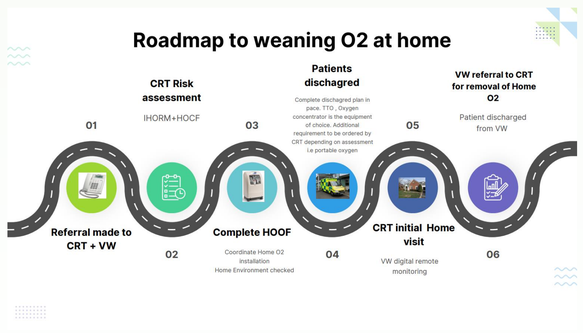
Driver Diagram

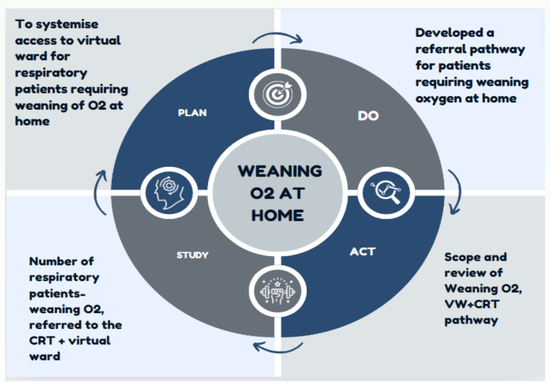


Plan Do Study Act

Plan-Do-Study-Act [5]	Intervention	Change concept Theory	Measurement
PDSA1	Provision of Integrated weaning off oxygen in home setting	Design a System to prevent errors	Weekly audit
PDSA 2	Provision of Friends and Feedback forms	Manage variation	Thematic Analysis

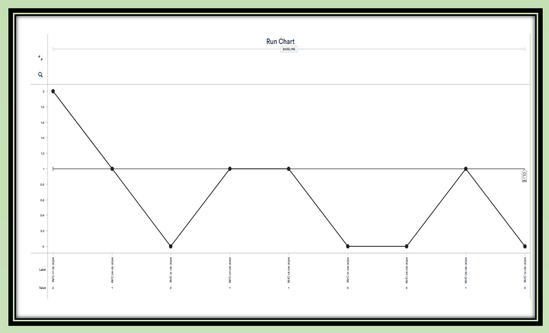
Develop Referral Pathway



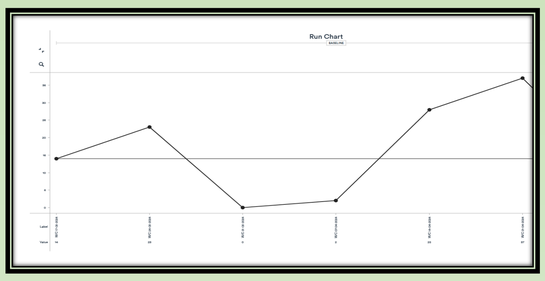


Results

Number of Patients referred March-May 2024



Number of Reduced Length of Stay as an In-Patient (in days)



Impact

There were seven patients referred in less than 3 months of service delivery. The main clinical indications were 2 Community-Acquired Pneumonia, 2 Interstitial Lung Diseases, 1 Exacerbation of COPD/Lung Cancer, 1 Infective Exacerbation of Asthma, and one bronchopneumonia.

The novel combined CRT+VW weaning off oxygen service demonstrated a significant reduction of hospital length of in-patient stay with a median of 14 days reduced in-patient and a highest of 37 days reduced in-patient from, the only 7 patients referred in the initial phase of the service.

There were no recorded complaints, or adverse events during this initial phase.

Conclusion:

The single most striking observation to emerge from the data was the significant reduction in in-patient hospital stays, which reduced the use of hospital resources. More importantly, it is apparent that CRT+VW weaning off, of oxygen-integrated acute and community services is safe.

These results suggest that it is feasible to deliver the early supported (CRT+VW) weaning off, of oxygen discharged at home.

Although this focuses on the obvious respiratory clinical indications for all patients referred, it is feasible that a roll-out to non-respiratory patients may potentially benefit from supported early discharge weaning off, oxygen at home.

Future Work

Further analysis on the correlation to hospital-acquired pneumonia avoidance and the CRT-VW weaning off, of oxygen. Analysis of earlier daily activities for a faster recovery and better quality of life is recommended. Patients' and families' experiences are also key areas to evaluate.

Ensuring appropriate systems and services for the CRT-VW weaning off oxygen at home service is an option to support early hospital discharge and better patient care in the comfort of their home.

References

1.Swift J, O'Kelly N, Barker C, Woodward A, Ghosh S. A Digital Respiratory Ward in Leicester, Leicestershire, and Rutland, England, for Patients With COVID-19: Economic Evaluation of the Impact on Acute Capacity and Wider National Health Service Resource Use. JMIR Form Res. 2024 Feb 13;8: e47441. Doi: 10.2196/47441. PMID: 38349716; PMCID: PMC10866202.

.Acknowledgments

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