Case Study

Rapid deployment of a COVID-19 Virtual Ward (Oximetry at home) to improve patient experience, flow and the interface to Same Day Emergency Care.

Salford Royal NHS Foundation Trust

December 2020

Same Day Emergency Care (SDEC) Hospitals Programme

Same-day emergency care (SDEC) aims to minimise and remove delays in the emergency patient pathway, allowing services to care for urgent/emergency patients within the same day of arrival as an alternative to hospital admission.

The national programme team for Same Day Emergency Care have produced several case studies to highlight best practice across England.
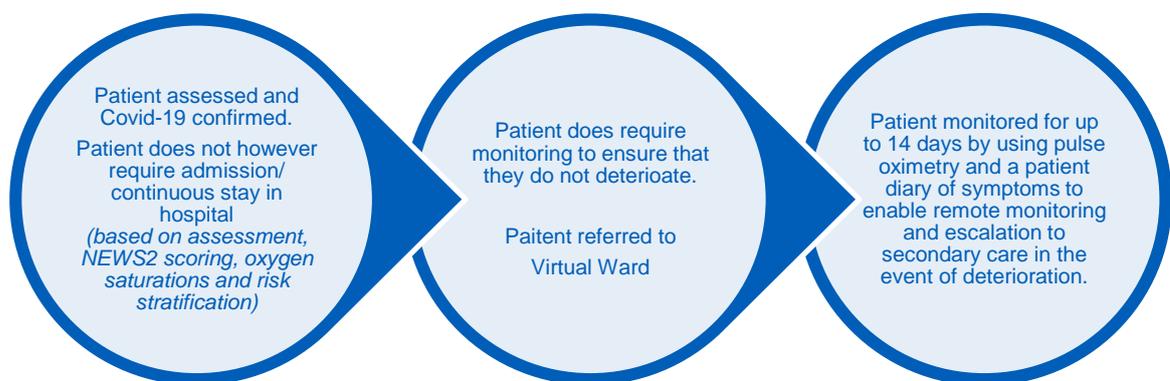
Establishing a virtual ward that supports both Primary & Secondary Care.

- Salford Royal NHS Foundation Trust, who are part of the Northern Care Alliance, in November 2020 developed and launched a virtual ward that sits across both Primary and Secondary Care. During the start of the second wave of COVID-19, Salford Royal NHS Foundation Trust was one of many within the north of the country, who saw a sharp rise in the number of confirmed COVID-19 cases.

- The team had heard about the virtual ward model (also known as Oximetry at home) and quickly realised that this model could be replicated not only at the Royal Salford but across the Northern Care Alliance. The model can support an improved patient experience, reduce the burden on bed management and support patient flow.

- The default model being introduced across the country is predominantly implemented in general practice in hot hubs and working with community teams. Financial support has been released to support the implementation within Primary Care and with it to support general practice capacity.

- Salford Royal NHS Foundation Trust realised that it was vital that the model not only met the need for Primary Care, but supported secondary care as well to enable:

    - Community COVID-19 virtual ward pathways – these are patients referred from community GP and those patients discharged from the Emergency Department without being admitted. These patients if deemed high risks are added to the community virtual ward pathway.
    - Hospital COVID-19 virtual ward pathways are for those discharged from hospital either from SDEC or from the ward.

- In developing the model, the team followed three key stages of the patient journey. These are shown in figure 1 below.

Figure 1.

Patient assessed and Covid-19 confirmed.

Patient does not however require admission/ continuous stay in hospital *(based on assessment, NEWS2 scoring, oxygen saturations and risk stratification)*

Patient does require monitoring to ensure that they do not deterioate.

Paitent referred to Virtual Ward

Patient monitored for up to 14 days by using pulse oximetry and a patient diary of symptoms to enable remote monitoring and escalation to secondary care in the event of deterioration.

The full pathway in which Royal Salford NHS Foundation Trust produced, can be found in Appendix 1.

- Patients are provided with a pulse oximeter and monitoring diary and are encouraged to monitor their levels three times per day and are called by the Virtual Ward team to gather and review results periodically and to see how generally the patient is.
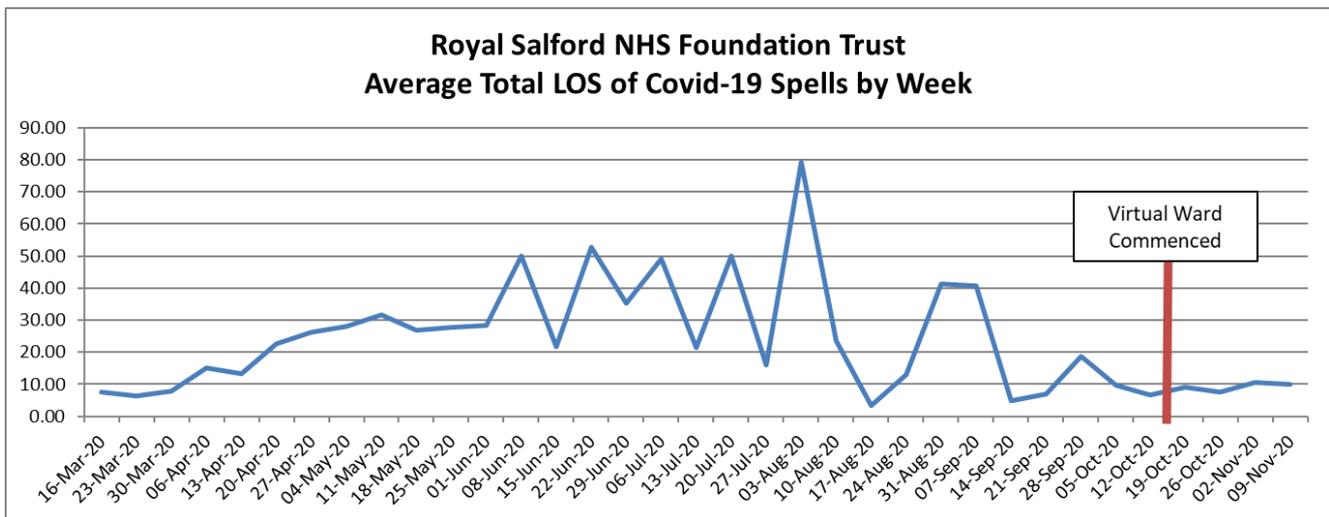
- Should a patient deteriorate on the virtual ward pathway, patients are advised of a clear escalation route which includes:
  1. Calling the Virtual ward team (24 hour a day) if:
     a. a drop in their oxygen levels of 2-3% less than usual, or it is 93% or 94%.
     b. feeling more unwell or more breathless
     c. having difficulty in managing activities of daily living.
     d. New symptoms that may be related to COVID (diarrhoea, vomiting ongoing fever, dehydration, new onset of confusion)
     e. a sense that something is wrong (general weakness, extreme tiredness, loss of appetite, reduced urine output, unable to care for yourself – simple tasks like washing and dressing or making food).

  2. Patients are advised to attend the Emergency Department or to call 999 if:
     a. oxygen level is 92% or below
     b. heart rate is 130 or above
     c. unable to complete short sentences at rest due to breathlessness
     d. chest pain
     e. breathing suddenly worsens

- Having a clear criterion for those patients who are suitable for the COVID-19 virtual ward, a structure in remote monitoring and the escalation plan documented, provides greater confidence to clinicians in referring patients to the pathway.

The interface with Same Day Emergency Care

- Early escalation of any patients deteriorating is key, and should any de-saturation be detected and/or symptoms worsen, Same Day Emergency Care is ideally placed to support these patients, bypassing a subsequent re-attendance within ED.

- Should a patient deteriorate whilst on the Virtual Ward and the clinical team need to see the patient in a face to face setting the patient is asked to attend SDEC.

- SDEC, having access to rapid diagnostics can re-assess, treat, alter the treatment and either return the patient back to their place of residence to continue their remote monitoring or admit if the patient continues to deteriorate.

The numbers to date

- To support in establishing confidence in the service, the team initially started small with the number of patients in week 1 being referred. Week 1 saw 5 patients referred.

- As the confidence grew, so did referral numbers with week 2 seeing a further 12 patients and week 3 a further 15 patients.

- Average inpatient length of stay for COVID-19 patients has sustained at an average of 10 days since the introduction of the virtual ward. This is compared to an average of 17 days in the 8 weeks prior to the service commencing.

Royal Salford NHS Foundation Trust
Average Total LOS of Covid-19 Spells by Week

Virtual Ward Commenced

What about the benefits?

- **Reduction in subsequent A&E attendances** through monitoring patients at home and should the patient deteriorate, they are seen within a Same Day Emergency Care (SDEC) setting.

- **Admission avoidance** through patients being safely discharged back with enhanced monitoring into the community with clear escalation routes, avoiding admission and freeing up hospital bed space.

- **Patient experience improved removing barriers and ensuring timely access to health** allowing patients to be seen quickly, assessed, diagnosed, treatment plan commenced, discharged and reunited with family.

- **Patients empowered** to manage and monitor their own health, coupled with the ability to receive safe, timely advice relevant to their data submissions.

- Recognition of deterioration early with **prompt escalation** to improve outcome

- Co-terminus delivery of the virtual ward in Primary & Secondary care allows integrated working supports both **admission avoidance and early supported discharge.**

Do you want to find out more information?

This case study was produced with Dr Bushra Alam, Acute Physician at Salford Royal NHS Foundation Trust.

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Do you have a Same Day Emergency Care service that you want the national team to know more about?

Get in touch at: nhsi.sdec@nhs.net

Appendix 1 - PROCESS FOR ACUTE MONITORING (first 14 days) for COVID-19 /SUPSECTED COVID-19

Process for acute monitoring (first 14 days) with COVID-19/suspected COVID-19 in GM

Hospital discharge

ED/NWAS

GP/111

Face to face or virtual assessment by clinician you present to (or via referral)
With pulse oximetry +/- rest of observations

COVID-19? Or COVID like illness?

No →

Non COVID-19/Other Pathologies
Triage to determine if remote or F2F consultation is required, **ensuring that unwell non-COVID-19 conditions are not ignored**

Yes

Categorisation of severity

Watch for 'silent hypoxia'
Asymptomatic presentations with low O$_2$ sats (often with normal RR, HR and other obs)

SEVERE
O$_2$ ≤92%* or any of RR ≥25, HR ≥131, new confusion = NEWS2 ≥5, *If O$_2$ sats are >4% less than usual

MODERATE
O$_2$ 93%-94%* or any of RR 21-24, HR 91-130, = NEWS2 3-4, *If O$_2$ sats are 3-4% less than usual

MILD
O$_2$ ≥95%* or any of RR ≤20, HR ≤90 = NEWS2 0-2 *If O$_2$ sats are 1-2% less than usual

CONSIDER URGENT ADMISSION

Considering hospital adm/assessment***? — Yes

High risk Category**? — No →

Mild COVID-19 symptoms –
Safety netting Patient instructed to self manage – paracetamol, fluids, NHS 111 website

No

Yes

HOSPITAL
(refer to local hospital pathways)

MONITOR

CONSIDER MONITORING

COVID-19 symptoms ranked by severity predictiveness

| BREATHLESSNESS |
| MYALGIA |
| CHILL |
| SEVERE FATIGUE |
| SPUTUM |
| DIZZINESS |
| COUGH |
| NAUSEA/VOMITING |
| DIARHOEA |
| HEADACHE |
| SORE THROAT |
| NASAL CONGESTION |

High risk category**
>=50yrs *AND/OR* co-morbidity – recommended monitoring BAME *AND/OR*, Gender (Male), Low socioeconomic status - use clinical judgement

COVID-19 remote monitoring / virtual ward (or equivalent)
- Patient issued with COVID-19 diary (including admission/CPR status) and oximeter
- Patients either upload observation and well being score on an app, or contacted by phone at agreed intervals (deterioration is escalated to hot hub or secondary care)
- Follow up call day 14 to check up/evaluate and reminder to return oximeter/diary

Escalate as appropriate

6 week follow up

Discharge or refer to Post Acute COVID-19 Clinic

Locality decision as to:
- *Local adoption for population coverage*
- *Who assesses, provides equipment, and monitors*
- *Where referrals come from and how virtual wards or equivalent are resourced*

Admission to Acute COVID-19 Virtual Ward

At a minimum, the following should be considered for admission to an acute COVID-19 virtual ward:

*A COVID-19 related hospital discharge from admission (if within 14 days of symptom onset)

*Those with MODERATE severity

Clinical judgement should be used in those MILD with higher risk of deterioration (aged >=50 years AND/OR co-morbidity; BAME, Gender (Male), Low socio-economic status).

Considering admission***
Do exertion test (40 step walk or 1 minute sit to stand tests) and consider admission if concerned of if ≥3% reduction