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Guidance note

Acute respiratory infection virtual ward

22 December 2021

Definition and background

Patients presenting with suspected acute respiratory tract infections (ARIs), including COVID-19, form a significant proportion of urgent care, general practice attendances and hospital admissions.

ARI virtual wards build on the learning from COVID-19 virtual wards. They support personalised care for adults with confirmed or suspected ARIs, including COVID-19, who are stable or improving but require acute care, and facilitate elective recovery. They do this by providing an alternative pathway to hospital admission and/or a safe early discharge pathway for patients who require ongoing monitoring, enabled by digital technology, in the place a person calls home, including care homes. The model is underpinned by clinical monitoring, patient education and empowerment, and access to timely specialist advice and guidance as required.

For further information on virtual wards, including the background, definitions and additional resources, please see the supporting information document on virtual wards.

Recommendation

Systems are asked to make plans to expand virtual ward capacity, as fast and safely as practicable, taking account of local circumstances, workforce availability and existing services, and building on existing virtual wards and digital platforms where these are established.

Systems should consider establishing an ARI virtual ward, where they have not already done so, to support earlier safe and supported discharge from hospital and/or to provide a safe and supported alternative to hospital admission. This will support patients with confirmed or suspected respiratory tract infections including COVID-19.

Implementation should be led by the integrated care system (ICS) and delivered by appropriate secondary care providers, community health services and primary care working collaboratively. Virtual ward models should align with local same day emergency care (SDEC) and urgent community response (UCR) services.

This guidance note sets out a minimum requirement for ARI virtual wards and should supplement existing arrangements where these are already established and functioning well, including alternative pathways to admission, integrated pathways and/or condition-specific pathways.

See supporting information on virtual wards for more information.

Overview

An overview of the ARI virtual ward is set out in the table below.

	Acute respiratory infection virtual wards
WHAT	Personalised technology-enabled remote monitoring and supported self-management/escalation.
WHERE	In the patient's own home or usual place of residence, supervised by a dedicated clinical team with rapid access to specialist advice and guidance.
WHO	Adults (aged 16 or over) with confirmed or suspected ARIs who are stable or improving but require ongoing monitoring that can be safely provided in their home or usual place of residence.
WHEN	Admission alternative, early discharge or integrated model as agreed locally.
WHY	Improved patient experience and outcomes. Shared decision-making for patients. Improved patient flow by reducing admissions and length of stay. Reduced nosocomial transmission of infections including COVID-19.
HOW	Monitored service with early deterioration recognition and appropriate clinical input. Patient and carer empowerment to self-monitor and escalate.

Inclusion and exclusion criteria

The ARI virtual ward should be available as an option for registered professionals to refer adults (aged 16 or over) who have a primary diagnosis of suspected/confirmed respiratory infection (including COVID-19) and, are stable or have an improving clinical trajectory but require ongoing monitoring. This service is intended for patients who require acute level care and would otherwise be in hospital; it is not intended for chronic disease management. The ARI virtual ward supports both an admission alternative to hospital and early supported discharge from hospital.

Services may need to develop their own admission and discharge criteria for acute level care in line with their population needs, available workforce and competencies.

Subject to a clinical judgement, the following criteria may support identification of patients suitable for admission to an ARI virtual ward.

Inclusion criteria

Patients with the following clinical features **may** be suitable:

- suspected or confirmed respiratory infection including COVID-19
- oxygen saturations of 95–100%, NEWS2 <3, clinically stable and/or improving
- no significant respiratory co-morbidities.

Patients with the following clinical features **may** also be considered, where clinically appropriate:

- saturations of 93–94% and/or NEWS2 3 or 4 with improving clinical trajectories (in patients being discharged from hospital-based acute care)
- saturations of 88–94% (or baseline) if known chronic hypoxia, eg chronic obstructive pulmonary disease (COPD)
- frail patients should not be excluded but dedicated frailty services, eg frailty virtual wards, may be more appropriate where these exist locally
- pregnant women with saturations >94% should not be excluded and early maternity involvement should be sought for specific advice around management of suspected ARI including COVID-19 in pregnancy.

Exclusion criteria

Patients with the following clinical criteria should be excluded:

- unstable or worsening clinical trajectory, eg saturations <93% unless confirmed baseline and/or NEWS2 ≥5
- severe or life-threatening presentations of pneumonia, asthma or COPD
- suspected sepsis
- chest pain that is concerning for a serious cause requiring immediate hospital transfer, eg acute coronary syndrome
- pregnant women with saturations of ≤94%.

Clinical judgement remains paramount for all assessments, particularly for patients at higher risk of serious illness, with a learning disability or living with serious mental illness.

Staffing and oversight

The default assumption is that the ARI virtual ward model is primarily implemented at system level and that delivery is led by one or more acute trusts and/or community health services with appropriate and timely specialist input.

The ARI virtual ward should be led by a named consultant practitioner (including a nurse or allied health professional (AHP) consultant) or suitably trained GP, with access to timely specialist advice and guidance. Virtual ward models may draw on multidisciplinary staff from multiple settings, including appropriately trained registered professionals and staff who may not normally be patient facing.

Virtual ward staff should have access to rapid specialist advice (eg telephone/digital/video) and guidance (eg acute medicine, emergency medicine, respiratory, cardiology or other specialist clinicians) in and out of hours.

To provide a safe and robust virtual ward staffing is required for a minimum of 12 hours a day (8am–8pm), seven days a week, with locally arranged provision for out-of-hours cover, enabling flexibility of service provision as determined by local need.

Clear pathways for referral and escalation should be developed collaboratively with SDEC, emergency department (ED), primary care, community health services, NHS 111/999 and UCR.

Local infection speciality teams should be engaged in the development of ARI virtual ward models to ensure oversight of infection prevention and control, antimicrobial stewardship and the diagnostic pathway for infection-specific tests such as blood cultures and point of care diagnostic tests (POCTs).

Legal responsibility, including for ensuring appropriate clinical governance, remains with the relevant provider. Each system should have a named executive-level person responsible for the establishment of the service in their area. Clinical, governance and administrative responsibilities across the pathway should be provided by any appropriately trained and competent person.

Further support

For further guidance on implementation of virtual wards please see the supporting guidance note.

To access digital tools, resources and ongoing updates, visit the virtual ward NHSFuturespage. If there are any issues accessing the site or for further queries, please email england.virtualward@nhs.net

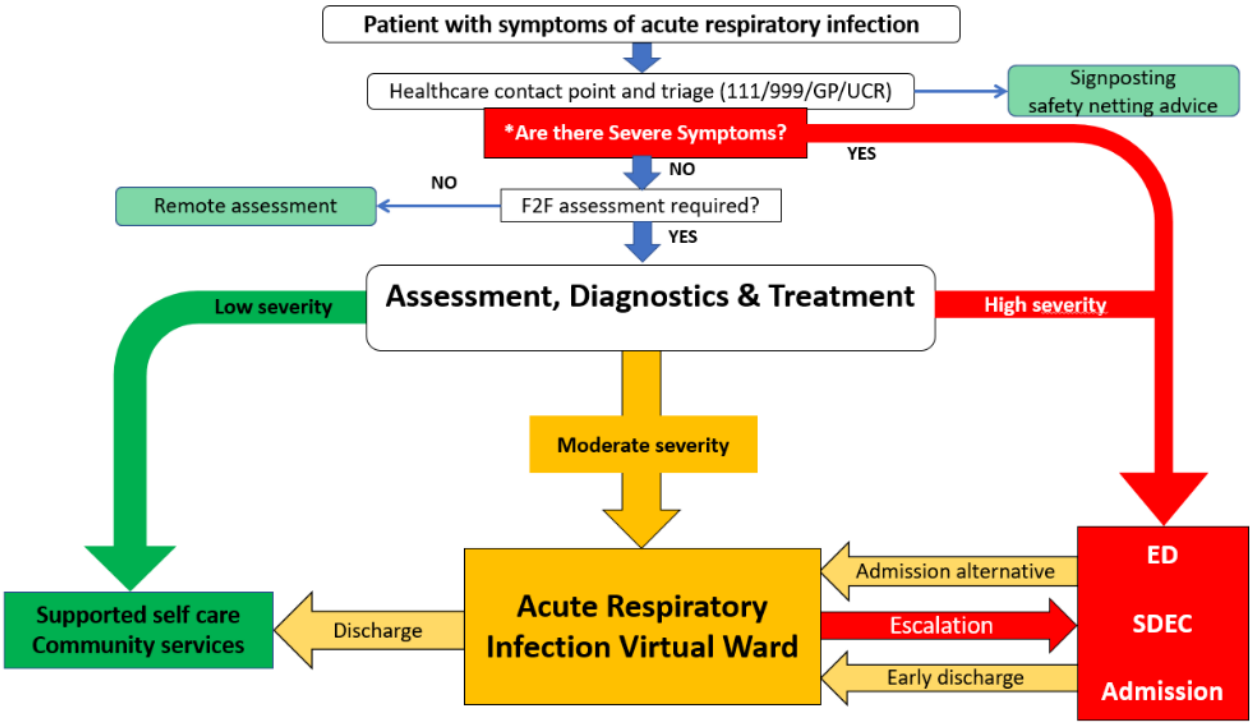
Digital platforms should meet relevant standards including the Digital Technology Assessment Criteria (DTAC) DCB0129 and DCB0160 assessment.

Virtual wards can support the NHS ambition of reaching net zero carbon emissions.

Appendix: Patient pathway

Figure 1 illustrates how the ARI virtual ward fits with the wider health system.

Figure 1:. Acute respiratory infection virtual ward patient pathway



*Medical emergencies including suspected sepsis in a patient meeting any high risk criteria (NICE guideline: Sepsis: recognition, diagnosis and early management) require immediate transfer to hospital for emergency care.

The patient journey can be split into the following stages:

Stage 1: Clinical assessment

- Clinical assessment to assess suitability for admission to a virtual ward should be carried out in person by a clinician. It should include a review of the patient's symptoms, function, clinical observations, appropriate diagnostics, clinical severity scoring (eg CURB-65), overall clinical trajectory and a shared

decision-making discussion about any support requirements for the patient or their carers.

- Diagnostic tests may, subject to clinical judgement, include the following: chest X-ray, blood tests (full blood count, urea and electrolytes, CRP, procalcitonin, D-dimer, arterial blood gases), ECG, peak flow and POCTs for respiratory viral infections, including COVID-19, RSV and influenza. Pregnancy should be excluded in any woman of reproductive age presenting with breathing difficulties.
- Clinical assessment ± diagnostics should be used with the inclusion criteria listed in the guidance note to identify patients who may be suitable for the ARI virtual ward. Clinical judgement remains paramount in all assessments.
- Patients who require immediate assessment ± treatment in hospital should be transferred to ED without delay, eg suspected sepsis, cardiac sounding chest pain or pneumothorax, any features of severe or life-threatening acute asthma or severe exacerbations of COPD, pregnant women with oxygen saturations of ≤ 94%.
- There should be early obstetric involvement for any pregnant woman who presents with breathing difficulties, including those with symptoms of respiratory infection.
- Assessment should take into account personalised care principles, including 'what matters' to people and their individual strengths and needs.

Stage 2: Referral

- The main referral routes into the ARI virtual ward are likely to be primary care, ED, SDEC, early discharge from hospital admission and community health services (including UCR). There should be a clear referral pathway during the ARI virtual ward's operating hours.
- National guidance on hospital discharge should be followed when patients are being referred to the ARI virtual ward from hospital settings, including relevant infection control precautions for COVID-19 patients.

Stage 3: Admission

- Patients being admitted to an ARI virtual ward will agree a patient-held personalised escalation and discharge plan, including monitoring arrangements.

- In the event of deterioration, the patient-held escalation plan should assist remote assessment by NHS 111/999/ARI virtual ward teams and help reduce inappropriate readmissions.
- The patient should additionally be provided with, as a minimum:
  - a patient information leaflet– see example patient information leaflet below
  - loan of any remote monitoring devices/equipment (which meet relevant ISO and CE approvals), supported by relevant instructions on use
  - a telephone number to call for advice or support between 8am and 8pm, seven days a week
  - instructions on who to contact outside these hours.
  - relevant safety netting and escalation advice for specific patient groups, eg pregnant women.
- The patient's GP should be notified of their patient's admission to the ARI virtual ward.

Stage 4: Monitoring

- Patient self-monitors using the device(s) provided in line with the agreed monitoring plan, with carer health and care support where appropriate.
- The mode and frequency of virtual ward staff proactively contacting patients, such as by telephone, should be tailored to the patient's needs and subject to clinical judgement.

Stage 5: Self-escalation

- The patient should self-escalate according to the severity of their deterioration. Clear information around escalation should be provided at admission and in supporting patient information (see example patient information leaflet below). Escalation may include calling the ARI virtual ward telephone number provided, calling 999 or attending their nearest ED.
- Pregnant women should be advised to contact their virtual ward team if their oxygen saturations are dropping. The virtual ward team should then contact the Obstetric team to alert them of the deterioration and liaise with them to escalate appropriately. Those with oxygen saturations of <94% or less require clinical review and should be advised to attend their nearest ED immediately or to call 999.

Stage 6: Recovery and discharge

- The expected length of an admission is up to 14 days, subject to clinical judgement.
- Patients who remain on the ARI virtual ward for more than 7 days should receive a further clinical assessment and action taken as appropriate.
- The discharge criteria from an acute level virtual ward are expected to be in line with the Hospital discharge and community support: policy and operating model.
- On discharge, the patient's GP should be informed, and their health record updated.

Stage 7: Follow up

- Follow-up should be arranged, eg pharmacy-led new medications review for patients started on inhalers and follow-up chest X-ray for patients with community acquired and COVID-19 pneumonia, and the patient and their GP informed.
- The patient should be given clear safety netting advice and instructions on how to seek help if they feel unwell on discharge – see example patient information leaflet below.
- Any loaned equipment should be returned to the ARI virtual ward for decontamination and reuse, as agreed in the admission conversation.

Example acute respiratory infection (ARI) virtual ward patient information leaflet

Below is a suggested **template** to support sites to develop their own patient information leaflet and safety netting advice for ARI virtual wards. An editable Word version of this document can be found on FutureNHS.

1. Virtual ward contact details

Virtual ward contact number and working hours: *[insert]*

If you feel unwell outside of these hours, please call 111/999

2. Description of a virtual ward and explanation of what it involved

What is a virtual ward?

You have been diagnosed with a chest infection which may be due to COVID-19 or another virus or bacteria. Your NHS team feels that your condition is stable and that you can safely recover at home, providing you have the right support and monitoring. The NHS can offer this support and monitoring at home; this is called a virtual ward.

The virtual ward means that you can stay in the comfort of your own home and healthcare staff will remotely monitor your condition until you get better. Monitoring your condition means that if you become unwell this will be picked up early and you can access treatment in hospital quickly if you need it.

Your healthcare team will talk to you about relevant monitoring devices and will be able to loan you the device(s) from the virtual ward, eg a pulse oximeter to measure your blood oxygen level. You can send readings from the device back to the virtual ward staff. If your readings worsen, the team may contact you and they will give you support and advice on what to do next.

Your team will go through with you how to use the device(s) you have been loaned *[insert],* how to let them know your readings and how they are going to contact you.

You will be given instructions on what to do if you feel unwell and will have a contact number for the virtual ward 8am to 8pm, 7 days a week.

You will need to monitor your symptoms until they improve and the virtual ward team is happy you are well enough to stop doing this. Paracetamol and regular fluids can help with mild symptoms and most people will feel better within 2 weeks.

If you have any questions about this document, please speak to your nurse or doctor.

3. Safety Netting and Escalation advice

What should I do if I feel unwell?

If your symptoms worsen quickly, please use the information below to assess yourself.

Go to A&E immediately or call 999 if:

- you're so breathless that you're unable to say short sentences when resting
- your breathing has suddenly got worse
- you cough up blood
- you feel cold and sweaty with pale or blotchy skin
- you develop a rash that looks like small bruises or bleeding under the skin and does not fade when you roll a glass over it
- you collapse or faint
- you feel agitated, confused or very drowsy
- you've stopped peeing or are peeing much less than usual
- *[insert patient specific monitoring parameters, eg saturations < 92%].*

Find your nearest A+E

Ring your virtual ward team or NHS 111 as soon as possible if:

- you're feeling gradually more unwell or more breathless
- you have difficulty breathing when you stand up or move around
- you feel very weak, achy or tired
- you're shaking or shivering

- you've lost your appetite
- you sense that something is wrong
- you're unable to care for yourself – for example, tasks like washing and dressing or making food are too difficult
- *[insert patient specific monitoring parameters, eg saturations < 94%].*

Go to 111.nhs.uk, call NHS 111 or call the virtual ward [insert VW contact number and opening hours]

Signs and readings that show you may be improving:

- gradual improvement
- fully mobile, able to manage stairs (if this is normal for you), not confused
- normal eating and drinking
- *[insert patient specific monitoring parameters, eg saturations >95%, pulse 50–90 beats per minute].*

4. Technology/digital product specific advice

How to use the device you have been given [*insert advice for relevant device supplied]*

eg What is it? What do I do with my readings? How to take my readings? How often do I need to take the readings? Setting reminders to take readings. What do the readings mean? How can I tell if I am getting better or if I should be worried?

5. Advice about isolating if COVID-19 positive

What if I have COVID-19?
If you have been diagnosed with COVID-19 you should follow national guidance on staying well at home and isolating. You should also read:

- How to look after yourself at home if you have COVID-19.
- Advice about staying at home (self-isolation) if you have suspected or confirmed COVID-19.

6. Advice on self-care while on a virtual ward

If you have a high temperature it can help to:

- get lots of rest

- drink plenty of fluids (water is best) to avoid dehydration – drink enough so your pee is light yellow and clear
- take paracetamol if you feel uncomfortable.

Additional advice is available here: How to look after yourself at home if you have a chest infection.

If you live alone, ask a friend, family member or neighbour to check up on you. Additionally, NHS Volunteer Responders can help with things like collecting shopping and medicines. Call 0808 196 3646 (8am to 8pm everyday) to arrange help from a volunteer.

[insert further local services for support]

7. Advice for women who may be pregnant

Pregnancy advice

If you're pregnant or have recently given birth, contact your midwife, GP or maternity team *[insert local contact here]* if you have any concerns or questions.

8. Advice on ward working hours

- if you feel unwell contact 111 or 999
- if you feel well contact the virtual ward team when they are open.

9. Further information

For further advice please contact: PALS / *[insert].*

To receive this information in large print or Braille or in a different language, please contact: *[insert].*