The following information resources have been selected by the National Health Library and Knowledge Service Evidence Virtual Team in response to your question. The resources are listed in our estimated order of relevance to practicing healthcare professionals confronted with this scenario in an Irish context. In respect of the evolving global situation and rapidly changing evidence base, it is advised to use hyperlinked sources in this document to ensure that the information you are disseminating to the public or applying in clinical practice is the most current, valid and accurate.

YOUR QUESTION

How can telehealth best support HSCP's response to the COVID-19 patient?

IN A NUTSHELL

This pandemic has triggered an unprecedented demand for digital health technology solutions and has revealed successful solutions such as screening and tracking; prioritizing the use and allocation of resources; designing targeted responses[1]; and exploring alternatives to face-to-face triage and visits[3].

Advantages of telehealth include the ability to: rapidly deploy large numbers of providers; facilitate triage so that front-line providers are not overwhelmed with new presentations; supply clinical services when local clinics or hospitals are damaged or unable to meet demand; and decrease the risk of communicable diseases which are transmitted by person-to-person contact[4]. There are also limitations to the use of telehealth. Some consultations require physical examinations that may be difficult to perform remotely and diagnostics which cannot be done remotely[4]. Those systems that already have structures in place for the use of telehealth are in the best position to utilise its capabilities[7]. Although concerns exist around privacy, safety and technical issues, studies have shown that both patients and staff are satisfied with the outcomes of using such technology, but more research is needed.

IRISH AND INTERNATIONAL GUIDANCE

What does the World Health Organization say?

World Health Organization (2020). Digital Heath and Innovation[1]
WHO has received overwhelming pro-bono support from technology companies to fight the COVID-19 pandemic. On 2 April, 30 of the world's leading digital technology experts gathered in a virtual roundtable to help advance the WHO-led collaborative response to COVID-19. This pandemic has triggered an unprecedented demand for digital health technology solutions and has revealed successful solutions such as screening and tracking; prioritizing the use and allocation of resources; and designing targeted responses.

World Health Organization [updated 9 April 2020]. WHO Health Alert brings COVID-19 facts to billions via WhatsApp[2]
WHO has launched a dedicated messaging services in Arabic, English, French, Hindi, Italian, Spanish and Portuguese with partners WhatsApp and Facebook to keep people safe from coronavirus. This messaging service provides the latest news and information on coronavirus including details on symptoms and how people can protect themselves and others. It also provides the latest situation reports and numbers in real-time. Users can simply type "hi", "hola", "नमस्ते", "oi", "salut", "ciao" or "مرحبا" to activate the conversation, prompting a menu of options that can help answer their questions about COVID-19.

What do the Centers for Disease Control and Prevention (United States) say?

Centres for Disease Control and Prevention (United States). Interim Guidance for Healthcare Facilities: Preparing for Community Transmission of COVID-19 in the United States[3]
Explores alternatives to face-to-face triage and visits. The following options can reduce unnecessary healthcare visits and prevent transmission of respiratory viruses in your facility:

- Instruct patients to use available advice lines, patient portals, on-line self-assessment tools, or call and speak to office or clinic staff if they become ill with symptoms such as fever, cough or shortness of breath.

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- Identify staff to conduct telephonic and telehealth interactions with patients. Develop protocols so that staff can triage and assess patients quickly.
- Determine algorithms to identify which patients can be managed by telephone and advised to stay home, and which patients will need to be sent for emergency care or come to your facility.
- Instruct patients that if they have respiratory symptoms they should call before they leave home, so staff can be prepared to care for them when they arrive.
- When possible, manage mildly ill COVID-19 patients at home.
- Assess the patient's ability to engage in home monitoring, the ability for safe isolation at home, and the risk of transmission in the patient's home environment.
- Caregivers and sick persons should have clear instructions regarding home care and when and how to access the healthcare system for face-to-face care or urgent/emergency conditions.
- If possible, identify staff who can monitor those patients at home with daily "check-ins" using telephone calls, text, patient portals or other means.
- Engage local public health, home health services, and community organizations to assist with support services [such as delivery of food, medication and other goods] for those treated at home.

Shifting practices to triaging and assessing ill patients including those affected by COVID-19 and patients with other conditions remotely using nurse advice lines, provider visits by telephone, text monitoring systems, video-conferencing or other telehealth and telemedicine methods can reduce exposure of ill persons with staff and minimize surge on facilities. Many clinics and medical offices already use these methods to triage and manage patients after hours and as part of usual practices. Recent reports suggest that approximately 80% of COVID-19 patients (of all ages) have experienced mild illness. Managing persons at home who are ill with mild disease can reduce the strain on healthcare systems; however, these patients will need careful triage and monitoring.

INTERNATIONAL LITERATURE

What does the international literature say?

Smith et al. (2020). Telehealth for global emergencies: Implications for coronavirus disease 2019 (COVID-19)[4]

Telehealth has a number of key strengths that can enhance an emergency response when environmental or biological hazards present. During infectious disease outbreaks, telehealth can enable remote triaging of care and provide rapidly accessible information through technology such as chatbots, as seen in Singapore during COVID-19. Telehealth can also assist with disease diagnosis via video consultations with health professionals. Various applications exist for providing ongoing care as demonstrated by a hospital in the USA where physicians are currently using telehealth to care for COVID-19 patients remotely. Additionally, telehealth can enable people to navigate the health system and access routine care during an infectious disease outbreak.

Conclusion: While we may not be able to accurately predict the timing of natural disasters and infectious pandemics, we can be sure that they will present again in the future. The COVID-19 experience is not a first, and nor will it be the last. Telehealth does have a critical role in emergency responses. Advantages of telehealth include the ability to: rapidly deploy large numbers of providers; facilitate triage so that front-line providers are not overwhelmed with new presentations; supply clinical services when local clinics or hospitals are damaged or unable to meet demand; and decrease the risk of communicable diseases which are transmitted by person-to-person contact.

There are also limitations to the use of telehealth. Some consultations require physical examinations that may be difficult to perform remotely [eg auscultation] and diagnostics [eg imaging, cultures] which cannot be done remotely. It is important that clinician training highlights the limitations of telehealth and informs of alternative methods of information gathering that can be used in these situations. These situations also highlight the importance of providing care via telehealth to non-infected people during an infectious pandemic. This can reduce contamination when it is necessary to see an infected patient in-person. It is important that the development of a telehealth strategy to deal with global and national emergency responses is

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built on the premise that telehealth becomes a mainstream component of our health system. The question is: How can this be realised?

- Ensure that all health professionals receive appropriate education and training;
- Introduce telehealth accreditation for health professionals;
- Provide funding which adequately covers the cost of providing telehealth;
- Redesign clinical models of care;
- Support all stakeholders with an effective communication and change management strategy;
- Establish systems to manage telehealth services on a routine basis.

Rockwell et al. (2020). Incorporating Telemedicine as Part of COVID-19 Outbreak Response Systems[5]

A major focus of response efforts by governments and healthcare organizations globally is to prevent and contain the spread of COVID-19, but the current public urgency and uncontained spread necessitate systems to additionally prevent healthcare system overcrowding and depletion of medical supplies and resources. Telemedicine systems are ideal for mitigating overcrowding of hospitals and clinics by triaging low-acuity patients while also preventing additional unnecessary human exposures and promoting delivery of high-quality care. Because state, federal, and international laws and regulations have expanded in recent years, months, and weeks to accommodate greater adoption of telemedicine systems, especially during this public health crisis, healthcare providers are now better situated to consider implementing such systems. Although certain legal, regulatory, and reimbursement challenges remain, the COVID-19 outbreak may be the right impetus for lawmakers and regulatory agencies to promulgate further measures that facilitate more widespread adoption of telemedicine.

Reeves et al. (2020). Rapid Response to COVID-19: Health Informatics Support for Outbreak Management in an Academic Health System[6]

Objective: To describe the implementation of technological support important for optimizing clinical management of the COVID-19 pandemic. Materials and Methods: Our health system has confirmed prior and current cases of COVID-19. An Incident Command Center was established early in the

crisis and helped identify electronic health record (EHR) based tools to support clinical care.

Results: We outline the design and implementation of EHR based rapid screening processes, laboratory testing, clinical decision support, reporting tools, and patient-facing technology related to COVID-19.

Discussion: The EHR is a useful tool to enable rapid deployment of standardized processes. UC San Diego Health built multiple COVID-19-specific tools to support outbreak management, including scripted triaging, electronic check-in, standard ordering and documentation, secure messaging, real-time data analytics, and telemedicine capabilities. Challenges included the need to frequently adjust build to meet rapidly evolving requirements, communication and adoption, and coordinating the needs of multiple stakeholders while maintaining high-quality, pre-pandemic medical care.

Conclusion: The EHR is an essential tool in supporting the clinical needs of a health system managing the COVID-19 pandemic.

[Ohannessian et al. (2020). Global Telemedicine Implementation and Integration Within Health Systems to Fight the COVID-19 Pandemic: A Call to Action](#)[7]

On March 11, 2020, the World Health Organization declared the coronavirus disease 2019 (COVID-19) outbreak as a pandemic, with over 720,000 cases reported in more than 203 countries as of 31 March. The response strategy included early diagnosis, patient isolation, symptomatic monitoring of contacts as well as suspected and confirmed cases, and public health quarantine. In this context, telemedicine, particularly video consultations, has been promoted and scaled up to reduce the risk of transmission, especially in the United Kingdom and the United States of America. Based on a literature review, the first conceptual framework for telemedicine implementation during outbreaks was published in 2015. An updated framework for telemedicine in the COVID-19 pandemic has been defined. This framework could be applied at a large scale to improve the national public health response. Most countries, however, lack a regulatory framework to authorize, integrate, and reimburse telemedicine services, including in emergency and outbreak situations. In this context, Italy does not include telemedicine in the essential levels of care granted to all citizens within the National Health Service, while France authorized, reimbursed, and actively promoted the use of telemedicine. Several challenges remain for the global use and integration of telemedicine into the public health response to COVID-

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19 and future outbreaks. All stakeholders are encouraged to address the challenges and collaborate to promote the safe and evidence-based use of telemedicine during the current pandemic and future outbreaks. For countries without integrated telemedicine in their national health care system, the COVID-19 pandemic is a call to adopt the necessary regulatory frameworks for supporting wide adoption of telemedicine.

Tarassenko et al. (2020). Should smartphone apps be used as oximeters?[8]

An evidence review carried out for the Centre for Evidence-based Medicine concludes that there is no evidence that any smartphone technology is accurate for the measurement of blood oxygen saturation.

Bashshur et al. (2020). Telemedicine and the COVID-19 Pandemic, Lessons for the Future[9]

The current dilemma facing health care systems worldwide is how to sustain the capacity to provide service not only for those afflicted with COVID-19 but also for trauma patients and those suffering from other acute and chronic diseases while protecting the physicians, nurses and other allied health personnel. It is no surprise that health systems within the United States and globally are now resorting to telemedicine to provide care while keeping patients in their homes. The massive conversion to telemedicine demonstrates its utility as an effective tool for social distancing in clinical or other settings.

Calton et al. (2020). Telemedicine in the Time of Coronavirus[10]

Telemedicine has emerged as a critical technology to bring medical care to patients while attempting to reduce the transmission of COVID-19 among patients, families and clinicians. It is also increasingly necessary to preserve scarce resources such as personal protective equipment. In this article, we share just-in-time tips to support palliative care clinicians and program leaders in providing the best care possible by telemedicine. These quick, practical tips cover telemedicine set-up, patient considerations, and clinician considerations. Next steps include ensuring equitable access to affordable telemedicine technology for vulnerable populations through creative solutions and financing, and dedicated attention to telemedicine evaluation and quality improvement.

Chauhan et al. (2020). Novel coronavirus (COVID-19): Leveraging telemedicine to optimize care while minimizing exposures and viral transmission[11]

The following Joint Position Statement represents a collective contribution of emergency and acute care experts from the World Academic Council of Emergency Medicine and the American College of Academic International Medicine Task Force on Telemedicine for the COVID-19 Pandemic. With the rapid evolution and miniaturization of portable electronic devices, most households own at least one digital device that is capable of rudimentary TMS patient-provider interactions. Moreover, most regions of the world have some form of connectivity, even if intermittent, thus enabling the use of patient- or community-owned devices over the existing infrastructure.

Grange et al. (2020). Responding to COVID-19: The UW Medicine Information Technology Services Experience[12]

The rapid rollout of capabilities by UW Medicine Information Technology Services (ITS) to support the clinical response to the COVID-19 pandemic is described. Recommendations for health systems to urgently consider as they plan their own response to this and potentially other future pandemics are given.

Greenhalgh et al. (2020a). Covid-19: a remote assessment in primary care[13]

Practical advice on how to carry out remote assessment of a COVID-19 patient.
Most patients with COVID-19 can be managed remotely with advice on symptomatic management and self-isolation. Although such consultations can be done by telephone in many cases, video provides additional visual cues and therapeutic presence. Breathlessness is a concerning symptom, though there is currently no validated tool for assessing it remotely. Safety-netting advice is crucial because some patients deteriorate in week 2, most commonly with pneumonia.

Greenhalgh et al. (2020b). Video Consultations for covid-19[14]

The rapid spread of COVID-19 and the fact that healthcare facilities could be sources of contagion has focused attention on new models of care that avoid face-to-face contact between clinician and patient. There has been particular interest in video consultations, which are already being rolled out in many countries as part of national digital health strategies. How

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appropriate are video consultations for dealing with the coronavirus crisis and what are the challenges of scaling up this model at speed?

Leite et al. (2020). New development: 'Healing at a distance'—telemedicine and COVID-19[15]

In extreme circumstances such as pandemics, the presence of patients in hospital emergency departments becomes untenable. Healthcare professionals and organizations worldwide are leaning on technology as a crucial ally to deal with the COVID-19 outbreak. This article focuses on the positive impact of telemedicine for helping service provision, from enabling virtual triage to mitigating the negative psychological effects of social isolation. The authors discuss the challenges and opportunities to telemedicine practices. Examples are provided of e-healthcare technologies implemented during the COVID-19 pandemic, for example in terms of healthcare capacity and providing support to people affected by quarantine.

Ignatowicz et al. (2019). Internet videoconferencing for patient-clinician consultations in long-term conditions: a review of reviews and applications in line with guidelines and recommendations[16]
The authors conducted a review of the existing reviews of literature relating to the use of internet videoconferencing for consultations between healthcare professionals and patients with long-term conditions in their own home. The review was followed with an assessment of NICE guidelines for patient care in the context of common long-term illnesses to examine where videoconferencing could be implemented in line with these recommendations.

OTHER

American Medical Association (2020). AMA quick guide to telemedicine in practice[17]
The AMA has designed a guide to support physicians and practices in the implementation of telemedicine amid the COVID-19 pandemic.

The following PICO(T) was used as a basis for the evidence summary:

Population — person / location / condition/patient characteristic	COVID-19 PATIENTS
Intervention — length / location / type	TELEHEALTH
Comparison — another intervention / no intervention / location of the intervention	
Outcome	COVID-19 RESPONSE

The following search strategy was used:

1 exp Coronavirinae/
2 COVID-19.ab,ti.
3 coronavirus.ab,ti.
4 "corona virus".ab,ti.
5 (Wuhan adj3 virus).ab,ti.
6 ("2019-nCoV" or "2019 ncov").ab,ti.
7 "severe acute respiratory syndrome coronavirus 2".ab,ti.
8 ("2019" and (new or novel) and coronavirus).ab,ti.
9 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8
10 limit 9 to updaterange="oemezd[20190101-]"
MESH terms: telemedicine; remote consultation
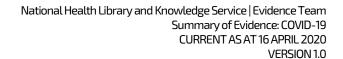Keywords: telehealth, telelcommunication, telemedicine, telephone, video

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BMJ Best Practice

Cochrane Clinical Answers

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