


POSITION PAPER

Planning and clinical role of acute medical home care services for COVID-19: consensus position statement by the Hospital-in-the-Home Society Australasia

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Key words

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Hospital-in-the-home (HITH) provision of acute medical care at home is increasingly advocated as safe, effective, psychologically beneficial and reducing financial burden on hospitals and patients.^{1–3} During a pandemic where hospitals are at capacity and patients need to be isolated, the role of ambulatory services has never been more relevant.⁴

The role of acute home care services

The role of HITH is to provide hospital-level patient-centred care that can safely and effectively be delivered at home to keep patients out of hospital,⁵ for example, outpatient parenteral antibiotic therapy, chemotherapy and physiotherapy. The COVID-19 pandemic does not change this, but the role of HITH may be impacted through: (i) increased referrals of patients without COVID-19 to maximise hospital inpatient capacity; and (ii) new referrals of patients suspected or confirmed to

Abstract

During a pandemic when hospitals are stretched and patients need isolation, the role of hospital-in-the-home (HITH) providing acute medical care at home has never been more relevant. We aimed to define and address the challenges to acute home care services posed by the COVID-19 pandemic. Planning for service operation involves staffing, equipment availability and cleaning, upskilling in telehealth and communication. Planning for clinical care involves maximising cohorts of patients without COVID-19 and new clinical pathways for patients with COVID-19. The risk of SARS-CoV-2 transmission, specific COVID-19 clinical pathways and the well-being of patients and staff should be addressed in advance.

have COVID-19 with clinical features on the less severe end of the spectrum but requiring some element of hospital-level care.

Challenges posed by the COVID-19 pandemic

There are several challenges unique to HITH posed by the COVID-19 pandemic. First, there are duelling priorities of proactively trying to increase patient referrals while managing patient load to allow for that.^{6,7} Second, new referrals for COVID-19 add to this increased workload and create the risk of transmission of SARS-CoV-2 to staff and other patients.⁸ Third, staff may become unwell, need quarantine or to provide care for their own families, reducing the available workforce with a specific skill set. Finally, there are unique challenges with managing personal protective equipment (PPE) and cleaning items taken into the home and cars.

This is a consensus statement by the HITH Society Australasia on the planning and clinical role of HITH during the COVID-19 pandemic. The HITH Society

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Australasia represents doctors, nurses, allied health and other healthcare workers who provide HITH care in Australia and New Zealand, Asia and the Pacific.⁹ As the peak HITH body in the region for 20 years, it is well placed to consider planning for the impact on HITH services. The content should be used in conjunction with health department and infection control guidelines.

Overall goals of HITH during COVID-19 pandemic

- 1 To provide safe, effective patient-centred care at home for all HITH patients, while managing increased demand for HITH services.
- 2 To plan for new clinical pathways to care for COVID-19 patients.
- 3 To minimise the impact of staff shortages.
- 4 To minimise the risk of SARS-CoV-2 exposure to staff and patients.

Issues to consider in planning for HITH preparedness

It is recommended that all home care services consider what is achievable within current capacity, and the responses to increased demand for HITH services with potentially decreased staff. A checklist of issues to consider can support this process (Fig. 1).

Managing staffing

Workforce planning: resources required for projected increases in patient numbers, and impact of leave.

Workforce flexibility: changing shift times, teleconferencing from home, especially for those with increased risk from COVID-19.

Managing HITH equipment use and availability

HITH equipment use: minimising the risk as a source of infection through determining what needs to be in the home, cleaning requirements and lifespan of PPE stored in hot cars.

Equipment stock availability and cars: ensuring sufficient stock or supply chain of usual and additional (PPE, flocked swabs) equipment for the duration of the pandemic.

Telehealth equipment: ensuring good connection; access to videoconferencing is not universal in patients' homes, and may need to be replaced by telephone calls.

Managing patient workload

Measures to decrease current HITH workload will maximise the number of patients that can be transferred home to free up hospital beds.

Managing interventions: minimising simple referrals, frequency of interventions and duration on HITH;¹⁰ education and support of patients remotely in their own care; deferral of elective referrals.

Managing need for in-home visits: replacement of some in-home visits with telehealth;¹¹ use of home observation kits (thermometer, oximeter) with remote monitoring; decreased driving distance, and if too far, engaging local services or rehousing patients locally.

Minimising risk of exposure to and transmission of SARS-CoV-2

Staff should follow current health department guidelines for screening, testing and PPE.

Risk factor screening script use: at referral and prior to every visit.

Education and training staff for PPE use: guidance on donning, doffing and waste disposal, because every visit is in an unfamiliar environment.

Limiting exposure during visits: family members should be limited in number, physically distanced and if unwell, not in the room with visiting staff.

Decreasing risk for staff at increased risk (co-morbidities, increased age): telehealth and non-clinical duties.

Communications

Communication is critical in ensuring that staff and patients feel informed and supported.

HITH staff: to provide updates and support, emphasise the importance of hand hygiene and other measures and provide moral support.

Hospital staff: to remind referrers of the role and capacity of HITH in ongoing institutional pandemic planning.

General practitioners, community physicians and other healthcare workers: to ensure care is co-ordinated with other healthcare workers providing supportive care to patients at home.

Patients: to ensure they feel safe receiving home care; development of information for all patients receiving care via HITH during the pandemic and additional information for patients with COVID-19.¹² This may include child-orientated language or pictures.

Checklist for optimising HITH service during COVID-19 pandemic	
<p>Planning for service operation</p> <p>Managing staffing</p> <p><i>Workforce planning</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Impact of ↓ staff <input type="checkbox"/> Identify other staff <input type="checkbox"/> Impact of leave <input type="checkbox"/> Communicating ↓ staff <input type="checkbox"/> Identify resource need <p><i>Workforce flexibility</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Prioritise clinical <input type="checkbox"/> Flexible location <input type="checkbox"/> Flexible timing <input type="checkbox"/> Work at home <input type="checkbox"/> Video meetings 	<p>Planning for clinical care</p> <p>Safe effective HITH care to meet ↑ demand</p> <p><i>Maximise usual patients</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Active daily seeking <input type="checkbox"/> Wide communication <input type="checkbox"/> Update education <input type="checkbox"/> Advertising signage <input type="checkbox"/> Patient info leaflet <p><i>Modify slightly to ↑</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Similar patients <input type="checkbox"/> ↑ acuity/severity <input type="checkbox"/> Earlier transfer <input type="checkbox"/> ↓ Rx frequency <input type="checkbox"/> ↓ Rx duration
<p>Managing HITH equipment use and stock</p> <p><i>Equipment availability</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Telehealth accessibility <input type="checkbox"/> Usual HITH stock <input type="checkbox"/> PPE/hand gel/swabs <input type="checkbox"/> Prioritise IT on-road <input type="checkbox"/> Kit in vs out of home <p><i>Equipment use</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Cars stocked <input type="checkbox"/> PPE training <input type="checkbox"/> PPE home plan <input type="checkbox"/> Clean kit/cars <input type="checkbox"/> Waste disposal 	<p>Patients with suspected/proven COVID-19</p> <p><i>Refine regularly as clinical experience evolves</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Determine age-appropriate clinical criteria: respiratory signs/hydration/2° pneumonia <input type="checkbox"/> Decide tolerance limit of fever, O₂ sats <input type="checkbox"/> Lower threshold for vulnerable patients <input type="checkbox"/> Written patient info for red flag features <input type="checkbox"/> Clear communication of isolation measures <input type="checkbox"/> Pictorial reminder for staff don & doff PPE <input type="checkbox"/> Patient observation kits to limit staff contact <input type="checkbox"/> Decide which team reviewing, relaying result <input type="checkbox"/> Discharge criteria; monitor till at least day 5
<p>Managing patient workload</p> <p><i>Manage interventions</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Plan ↓ simple referrals <input type="checkbox"/> Plan ↓ freq/duration <input type="checkbox"/> Support self-care <input type="checkbox"/> Defer electives <input type="checkbox"/> Patient expectations <p><i>In-person visits</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Use telehealth <input type="checkbox"/> Observation kits <input type="checkbox"/> ↓ drive distance <input type="checkbox"/> Relocate patient <input type="checkbox"/> Local services 	<p>Mode of care for suspected/proven COVID-19</p> <p><i>Telehealth</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> No intervention <input type="checkbox"/> Clinical assessment <input type="checkbox"/> Psychological state <input type="checkbox"/> Clinical advice <input type="checkbox"/> Some allied health <input type="checkbox"/> Semi-urgent review <input type="checkbox"/> Consider responsive mobile unit for review <p><i>In-person</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Intervention <input type="checkbox"/> No video access <input type="checkbox"/> Further COVID Ix <input type="checkbox"/> Physical exam <input type="checkbox"/> Telehealth concern <input type="checkbox"/> Patient concern
<p>Minimising risk of transmission of SARS-CoV-2</p> <p><i>Make plans for risk to staff and patients</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Risk screening patient: prior to every visit <input type="checkbox"/> Risk screening family: prior to every visit <input type="checkbox"/> PPE training: how & where to don & doff <input type="checkbox"/> Plan to adapt to PPE/testing criteria changes <input type="checkbox"/> Plan for family: 1.5m, no unwell, limit nos. <input type="checkbox"/> ↓ risk for at risk staff: telehealth, non-clinical 	<p>Transfer of deteriorating patient to hospital</p> <ul style="list-style-type: none"> <input type="checkbox"/> Use standard escalation of care criteria <input type="checkbox"/> Specify criteria for patients with COVID-19: O₂ sats, respiratory rate, work of breathing <input type="checkbox"/> Clear process both in and after hours <input type="checkbox"/> Patient info with steps and contact details <input type="checkbox"/> Admission team can joint telehealth review <input type="checkbox"/> At hospital, where & who to review patient <input type="checkbox"/> Which team to admit patient under
<p>Communications</p> <p><i>More critical than ever in times of stress</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> HITH staff: daily email info/support updates <input type="checkbox"/> Hospital staff: regular reminder role of HITH <input type="checkbox"/> GPs/community staff: shared care patients <input type="checkbox"/> Patients without COVID: changes in HITH <input type="checkbox"/> Patients with COVID: explanation of HITH <input type="checkbox"/> Supporting each other: kindness, empathy 	

Figure 1 Checklist for optimising hospital-in-the-home (HITH) service during COVID-19 pandemic.

Supporting each other

We support our own HITH team and our colleagues by treating everyone with respect and kindness,

inclusion, regular communication, understanding of natural anxiety, reassurance and advocacy for infection protection for them in their role as front-line carers.

Clinical role of HITH for COVID-19

The clinical role of HITH will depend on the pathways that already exist and what capacity the HITH service has to expand or modify services and to develop new pathways.

Provision of safe effective HITH care to meet increased hospital demand

During a pandemic, the first priority is to optimise current care. However, there may be opportunities to think about the role of HITH for more patient groups.

Maximise referral of usual HITH patients: transferring all cohorts that the institutional HITH usually takes; using communication, education and advertising signage about HITH.

Modify usual care to include additional HITH patients: extension of limits of current patient groups: acuity/severity, referral timing and intervention frequency, without decreasing level of care.

Opportunities to develop new HITH pathways: development for new patient cohorts and new interventions. HITH societies are well positioned to establish sharing of information across hospitals.

Referral of new patients to HITH with COVID-19

The role of HITH for patients with suspected or confirmed COVID-19 is untested and likely to evolve. Current case definition criteria should be used: patients with mild disease can go home without HITH, patients with severe disease need hospital admission, and the role of HITH lies in between. HITH may also be a source of reassurance for people who are safe to go home but feel frightened by their diagnosis.

Referral processes: who will review, relay results and give isolation advice, in and out of hours.

Clinical criteria appropriate for HITH suggested for COVID-19: these should be based on usual institutional HITH criteria:

- Requirement for ongoing assessment and/or management for moderate illness, for example, respiratory effort but not needing oxygen, decreased fluid intake, moderate secondary bacterial pneumonia requiring IV antibiotics.
- COVID-specific modifications may be considered, for example, tolerance of fevers and/or mild hypoxia in otherwise suitable patients.
- Monitoring those at higher risk of deterioration: those with respiratory/cardiac/oncological co-morbidities, neonates and elderly should be considered individually.

Duration of HITH admission: symptoms should be clearly improving before discharge; deterioration may occur beyond day 5 of the illness.

Additional interventions that may increase use of HITH: depending on HITH capability: equipment kits for patient self-observation, nasogastric/intravenous hydration, oxygen using concentrators and remote monitoring.

Mode of HITH care for patients with COVID-19

Mode of care depends on patient medical needs and risk of transmission of COVID-19 infection.

Telehealth for assessment/review: if no clinical intervention required; also semi-urgent review of new symptoms or potential need to escalate care.

In-person assessment: if intervention, for example, intravenous antibiotics required, or clinical examination for deterioration alerted by telehealth or patient/family phone call.

Responsive mobile unit: consideration for ability to respond to need for an in-person visit after a telehealth review.

Transfer from HITH back to hospital of deteriorating patients with COVID-19

Use of standard procedure for escalation of care for deteriorating patients: contact numbers and signs to watch out for on information provided to the patient.

Consideration of specific criteria in COVID-19 patients: worsening respiratory status, for example, oxygen saturations <92%; poor urinary output or other clinical concerns.

Transfer back to hospital: clear process for both in hours and after hours, including where and by which team patient will be reviewed.

Conclusion

As the pandemic progresses, HITH activities will need to be updated, to align with recommendations from health departments and infection control, and in response to experience of COVID-19 infection. This is the current consensus position of a large group of healthcare workers experienced in HITH care, with the aim of facilitating preparedness for institutions to provide acute home care in the early stages of the COVID-19 pandemic.

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