Enabling patient communication for hospitalised patients during and beyond the COVID-19 pandemic

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INTRODUCTION
As COVID-19 spread across the globe, hospitals restricted visitors to protect patients and healthcare providers. The absence of in-person visitors, who play a central role in patient well-being and clinical decision making by clarifying medical histories and bridging linguistic and cultural divides, left patients vulnerable to social isolation, delirium and fragmented clinical care. With ongoing COVID-19 infections, health systems continue to grapple with how to support patients and loved ones during visitor restrictions.

Many technology-driven innovations emerged during COVID-19 to conserve personal protective equipment, protect healthcare workers and prevent nosocomial transmission, but, to our knowledge, this was the first programme designed by medical trainees with the specific goal of connecting patients with their loved ones. Here, we describe the design and early impact of an inpatient videoconference telehealth initiative, and we provide a model for health systems interested in designing similar telehealth programmes to connect patients and loved ones. The objective of this initiative was to reconnect patients with their loved ones during COVID-19-related visitor restrictions across diverse hospital settings to improve patient experience and care delivery.

METHODS
Setting
Resident physicians and medical students provide clinical care at three affiliated health systems, including a large tertiary referral centre, a county hospital, and a veterans administration hospital (VA). Sites were chosen because of their central affiliation with the tertiary academic medical centre in which trainees work. Each health system is independently organised with separated electronic health record (EHR) systems, governance, and funding mechanisms. Implementation across different sites helped test the feasibility of a video-conferencing telehealth initiative across disparate settings.

TEAM DESIGN
The leadership team consisted of resident physicians in the Internal Medicine Residency Programme. Given the diversity in organisational structures, patient populations and resources at each hospital, residents divided into site-based teams. Medical students, who were largely...
removed from clinical responsibilities during initial stages of the pandemic, joined these teams (table 1). Each site developed its own meetings, roles and operations. Weekly cross-site meetings were held to share best practices and solutions to obstacles.9 10

**Fundraising and technology**

Guided by literature from the non-profit setting, the team drew on strong levels of motivations for donation during COVID-19 to design the fundraising process, which included research, solicitation and stewardship.11 The team created a map of our donor networks which included research, solicitation and stewardship during COVID-19 to design the fundraising process, which included research, solicitation and stewardship during COVID-19 to design the fundraising process, which included research, solicitation and stewardship during COVID-19 to design the fundraising process, which included research, solicitation and stewardship during COVID-19 to design the fundraising process, which included research, solicitation and stewardship during COVID-19 to design the fundraising process, which included research, solicitation and stewardship during COVID-19 to design the fundraising process, which included research, solicitation and stewardship during COVID-19 to design the fundraising process, 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Early-stage innovation report

Early barriers and solutions

The need to overcome early barriers led to frequent communication among team leads at each site, sharing learnings and resources. Examples of initial barriers included unmet needs for video calls, low awareness and utilisation of tablets for video calls, lack of knowledge around using new technology platforms such as Zoom, and inefficiencies in setting up calls with families. Ultimately, sites converged on a centralised consult service, which met key considerations including the need to have personnel with deep knowledge of workflows, alleviate frontline staff of additional responsibilities and maximise use of a limited number of tablets. Analysis of this initiative’s implementation highlighted key drivers of organisational buy-in, including openness to change during COVID-19 and alignment of initiative goals with the organisation’s mission to deliver patient-centred care.

Additional benefits beyond initial expectations

The use of tablets extended beyond their original purpose. At the tertiary hospital, tablets were used by patients to attend Alcoholics Anonymous meetings, and...
at the VA, tablets were used to help patients pay bills and access educational materials. While the aim was to reconnect patients and their local loved ones unable to visit, we found that family members from around the globe joined video calls. Even beyond the era of visitor restrictions, patients will continue to benefit from interventions that support active engagement of social support systems. Health systems should build or leverage existing inpatient telemedicine infrastructure to engage loved ones using IVN to field consults across the hospital and coordinate with distanced loved ones.

**Value of trainees**

The project also highlights how academic institutions could better capitalise on the diverse skillsets of its workforce, including trainees, to inform clinical care delivery improvement. Resident physicians and medical students frequently bring deep experience in diverse fields adjacent to medicine including operational experience, project management, advocacy, quality improvement and entrepreneurship. Working together, trainees combined their expertise with front-line clinical experiences and tacit understanding of the hospital systems to create this initiative.

**Limitations**

The initiative’s large scale and compressed implementation timeline was labour-intensive and used an untapped workforce made temporarily available by circumstances surrounding the COVID-19 pandemic. This limitation was mitigated by the development of self-checkout workflows and design of designated roles to assist in connecting patients and loved ones. Health systems frequently have volunteers and employees in need of temporary work accommodations who could be trained to serve in the IVN role.

**CONCLUSIONS**

Our rapid design and implementation employed the expertise and availability of medical trainees to improve communication among patients, loved ones and clinical teams through telehealth. This case study can serve as a model for health systems looking to create a sustainable inpatient telehealth programme to connect patients and their loved ones across different

### Table 2 Use cases for video visits between patients and loved ones

<table>
<thead>
<tr>
<th>Use cases</th>
<th>Tertiary hospital</th>
<th>County hospital</th>
<th>VA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common use cases</td>
<td>For hospitalised patients to connect directly with families</td>
<td>156</td>
<td>255</td>
</tr>
<tr>
<td></td>
<td>For medical updates and decision-making</td>
<td>For end-of-life care</td>
<td>For caregiver teaching</td>
</tr>
<tr>
<td>Unique use cases</td>
<td>For connecting patients to alternative avenues of support</td>
<td>For enabling international calls for patients’ families</td>
<td>For engaging patients in affiliated nursing facility (ie, community living centre)</td>
</tr>
<tr>
<td></td>
<td>For example, patient with cirrhosis attended virtual alcoholics anonymous meetings while awaiting liver transplant</td>
<td>For example, family members from three countries prayed together with a patient over video call when she transitioned to comfort care</td>
<td>For example, using tablets for combination of educational games, books and videos for patients</td>
</tr>
<tr>
<td>Provider impact quotes</td>
<td>‘Nurses are distressed with the visitor restrictions causing moral injury for patients and themselves… these video capabilities have helped ease the burden’—ICU unit director</td>
<td>‘We had video calls last night (with a family) before the patient passed… I’ve been doing this for 40 years and what’s going on with the visitor restrictions keeps me up at night.’—ICU nurse</td>
<td>‘An elderly admitted patient would barely engage with hospital staff. I set up a video call with his daughter, and he became more animated and talkative than I had ever seen him.’—Resident physician</td>
</tr>
</tbody>
</table>

*Does not include number of video visits completed for patients with provider-driven and nursing-driven workflow.

ICU, intensive care unit; VA, veterans administration.
hospital settings. Further research is needed to elucidate the impact of inpatient telehealth on patient satisfaction and health outcomes.

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**REFERENCES**


