Collaboration between a tertiary pain centre and community teams during the pandemic

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ABSTRACT

People with chronic pain faced potential treatment disruption during the COVID-19 pandemic in Singapore, as the focus of healthcare shifted. A model of rapid integration of a pain centre with community healthcare teams was implemented to care for vulnerable older patients with chronic pain and multiple comorbidities. Telemedicine and home visits by community nurses were used, with risk-mitigation measures, ensuring comprehensive assessment and treatment compliance. Medications from pain physicians were delivered at home through a hospital pharmacy. A secure national electronic health records system used by all teams ensured seamless access and documentation. Potential emergency department visits, admissions and delayed discharges were thus avoided. Integration of community teams with chronic pain management services can be recommended to ensure pandemic preparedness.

KEY WORDS

◆ Pain management ◆ Community settings ◆ High-risk medication
◆ Opioids ◆ Care integration

The COVID-19 pandemic has caused unprecedented stress on healthcare systems worldwide. At least 27 million people have been infected globally, with at least 881 000 fatalities at the time of writing. As of 7 September 2020, Singapore recorded 57 022 cases with 27 fatalities.

In an environment of scarce healthcare resources and overburdened infrastructure, there is a need to prioritise the provision of medical care, conserve resources, reduce spread within the community, protect health workers and ramp up pandemic preparedness. With the focus shifted to treating those with COVID-19 and those needing emergency care, there is a potential risk of neglecting those with chronic conditions, including pain. Many sectors of healthcare have had to re-organise and respond to the challenges of COVID-19, and pain management centres, too, need to have an effective response.

The holistic and wide-scale response of any pain management service to a pandemic would involve a multi-faceted approach, including continuity of patient care, resource optimisation, reviewing potential immunosuppressive treatments and collaborations for patient management. The authors report a collaboration between a pain management service and community healthcare teams, which greatly benefitted the former in the management of vulnerable older people with chronic pain.

Control and containment measures and impact on patients with chronic pain

In Singapore, enhanced safe-distancing measures were implemented during the circuit breaker period from 7 April 2020 to 1 June 2020 (Ministry of Health (MOH), 2020) in an effort to reduce the spread of COVID-19. Many other affected countries, including the UK, had similarly enforced a lock-down or partial lock-down to battle the pandemic. For chronic illnesses, the challenges during any pandemic is ensuring continuity of care amid reduced non-urgent specialist and primary care visits. Healthcare resource diversion with potential interruption of routine healthcare follow-ups and medication supply can negatively affect function and quality of life, hence increasing morbidity and even mortality (Spiegel et al, 2002; Centre for Evidence-Based Medicine (CEBM), 2020).

Overview of Singapore's community healthcare teams

The composition of community teams varies worldwide and may comprise an integrated team of nurses and doctors

with support staff (pharmacists, physiotherapists and social workers), nurses only or non-clinical staff trained for community healthcare needs in rural locations. The teams are versatile, in that they can either perform face-to-face home visits or work from strategically located community centres and cover a wide range of specialties while providing good-quality care. There has been evidence to show patient preference for such care (Dixon et al, 2015; Lehnert et al, 2018). Community teams have effectively supported efforts to manage epidemics and pandemics, including the H1N1 and Ebola epidemics (Wynn and Moore, 2012; Siekmans et al, 2017).

Singapore's Ministry of Health (MOH) funds various community healthcare teams for home-based or centre-based care in the community for intermediate and long-term health needs. The programmes are key to population health management and enable person-centred care beyond hospital walls. Community healthcare aims to bridge the gap between care in the hospital and community and complement the services provided by the primary care sector. Home medical and nursing care, home palliative care and home personal care are part of the community or home-based healthcare programmes. Centre-based programmes address day-care and rehabilitation needs.

In the UK, those with long-term complex health needs qualify for free social care arranged and funded solely by the NHS (NHS Continuing Healthcare, 2018). In Singapore, healthcare is not free but subsidised by various government schemes, such as Medisave, Medishield and Medifund (MOH, 2019). The Agency of Integrated Care under the Singapore Ministry of Health (MOH) provides financial grants and schemes for patients who require assistance on daily activities, mobility, caregiving and medical fees. When applying for government-funded intermediate and long-term care services, such as home- or centre-based care, patients undergo means testing. This is based on their household per capita income, residence type and annual value of the place of residence, to determine the amount of subsidies (up to 80%) the patient is eligible for (Intermediate and Long-Term Care Services Subsidies, 2020). The main community nursing team involved in the pilot project reported here is administered by the regional health system of three healthcare clusters in Singapore. The service is provided at no cost to patients. The future funding of this service after the pilot scheme will be determined after assessment of utility and outcomes.

Community nurses are included in the community nurse posts at the senior activity and family service centres, religious organisations, residents' community centres and medical clinics in the neighbourhood, as part of the community nursing programme. They receive referrals from healthcare institutions, primary care and community service providers, as well as requests from residents. Nursing consults are provided at the community nurse posts for patients who are ambulant or able to mobilise on assisted aids or at patients' homes for those who are frail with difficulties in mobilising due to pain or weakness. They play a critical role in the integration of health and social care services in the population, making referrals to other community and rehabilitation services as required.

Similar to community care teams in the NHS in the UK, community nurses in Singapore work collaboratively within multidisciplinary teams (MDTs) to plan, deliver and evaluate nursing care within community settings. Each team works closely with GPs and other specialty physicians to provide community care with a MDT approach, providing long- and short-term nursing interventions, rehabilitation and support for the management of long-term conditions. The community nursing teams keep hospital admissions and readmissions to a minimum, encouraging, supporting and facilitating self-management and goal setting where possible.

In 2019, the community nursing programme had 4038 patients enrolled, with 7998 visits being conducted. The nurse-to-patient ratio is 1:150.

Rationale for collaboration with community teams during the pandemic

The mean age of the patients at the pain centre was 58 years and about 50% had three or more comorbidities, placing them at a higher risk of morbidity and mortality from COVID-19. Approximately 30% had required at least one visit to emergency departments or one hospital admission the preceding year for uncontrolled pain. The clinic's aim was to ensure that its patients avoided hospital admissions and emergency department visits for pain during the COVID-19 pandemic, as it would increase risk of exposure to COVID-19 and place a strain on resources.

Collaboration is at the foundation of pandemic preparedness planning, and it needs to be integrated across jurisdictions and healthcare sectors. In the 'Framework for disaster planning' by a Mayo Clinic team for special populations, including the chronically ill, the integration of community-based organisations in the planning process for disasters was emphasised (Dempsey et al, 2019). During a public health emergency, primary care providers and community healthcare teams can help reduce emergency department visits and potential admissions through surveillance, provision of continued healthcare and coordination with hospital healthcare sectors (Wynn and Moore, 2012). Furthermore, they can prevent delayed discharges of patients (Scott, 2010; Pellett, 2016).

Pain centres need to function within the framework of integrated people-centred health services (IPCHS), adopted by member states at the World Health Assembly in 2016 (World Health Organization, 2016). There is a need to shift away from a pain service designed around diseases and health institutions towards a service and health system designed for people. During the COVID-19 pandemic, the need to contextualise the pain service to the requirements of patients with varied needs, with a prevailing health emergency, called for coordination of care in a safe and acceptable manner. Anecdotally, communication and collaboration among MDTs has thus far catered best to the needs of chronic pain patients. The community healthcare teams integrated with

the tertiary pain centre, hospital pharmacists and social service provided a timely and effective response to meet the needs of older and vulnerable people.

As pain is multidimensional and subjective, it requires a holistic approach of care, including both pharmacological and non-pharmacological interventions (Mendes, 2020). This requires a close partnership between pain specialists and community nurses to collaboratively adopt a systematic and comprehensive approach to assessment, treatment compliance and outcome monitoring. In addition, the community teams also provide education and support to patients and carers.

Opioids and controlled drug management

With a marked shift in the focus of healthcare during the pandemic, potential disruption of the supply of government-regulated opioids for cancer and chronic pain would cause withdrawal symptoms and increased pain. Containment measures resulted in minimised face-to-face consultations at the pain centre (MOH, 2020). Telemedicine was not set up in the pain centre in the initial phase of the pandemic. Furthermore, telemedicine has its legal and safety limitations in monitoring opioid consumption. It was necessary to continue to supply patients already on long-term opioids while ensuring the minimum dose, safe monitoring and appropriate adherence, cognisant of the abuse, tolerance and dependence potential. As safe delivery was essential, opioids were self-collected from the hospital pharmacy and not home delivered (National Institute for Health and Care Excellence (NICE), 2016; American Society of Regional Anesthesia and Pain Medicine, 2020).

Cancer patients and a small group of mobility-impaired adults at the pain centre were already on opioids to maintain daily function and required home-based assessment, as they were not comfortable with video consultation and they wished to avoid hospital visits. Referral to community nursing and palliative home-care teams ensured necessary close monitoring of opioid stock and potential misuse, compliance, efficacy and adverse effects. This helped to maintain the safe and effective prescribing of strong opioids in adults with advanced and progressive disease NICE, 2017). Pain physicians at the tertiary pain centre could continue prescribing opioids based on the community team's assessment, while reducing clinic visits.

Of note is that during the COVID-19 pandemic in Singapore, the supply of the single brand of liquid morphine being used was disrupted, and a new formulation was procured by the hospital pharmacy, which had an increased concentration of morphine (2 mg/ml instead of 1 mg/ml. Pharmacists educated patients on this, and community nurses were tasked with ensuring that patients under their care understood and complied with the necessary reduction in the volume of drug they consumed to maintain the same non-escalating dose.

For non-cancer pain, initiation of new opioids during COVID-19 was avoided as far as possible, as opioids are recognised to cause immunosuppression, which may increase risk of infection and morbidity from COVID-19 (Sacerdote, 2008). Furthermore, there is increased risk of respiratory depression in patients on opioids who contract COVID-19, and febrile patients show increased absorption from fentanyl patches (Puntillo et al, 2020). With the known risks of opioids, the COVID-19 pandemic presents an opportunity to improve opioid-prescribing practices.

Workflow for referral to community healthcare teams

Figure 1 shows the workflow of the collaboration between the pain clinic and community nursing teams described here.

Telephone interviews with patients at the tertiary pain centre established whether their pain was manageable with current medications, whether they had social support and if they were happy to defer doctors' appointment with home supply of medications. Patients with poorly controlled pain could be seen at the pain clinic with appropriate infection control and screening measures. Those with impaired mobility, poor social support and multiple comorbidities, especially older adults, were considered for referral to community teams if they consented to this. Those who were on stay-home-notice for possible COVID-19 contact could be contacted by community nurses by telephone, and a home visit, with appropriate precautions, was scheduled only if necessary.

While the UK has a national drug treatment monitoring system (NDTMS) to collect data on the treatment patients receive (Royal College of Anaesthetists, 2018), a data secure national electronic health records (NEHR) system is in place in Singapore, with community teams documenting assessments and interventions on the same portal as institutional teams, and this aided in the clear and seamless management of patients. For community teams without access to the NEHR, communication with pain physicians was through secured emails or messaging systems or telephone calls.

Workflow amendments and challenges for community teams

During the circuit breaker period (Government of Singapore, 2020), community services such as home personal care and centre-based care services were scaled down. They could cater only to those frail clients who had intensive care needs or inadequate family support. There were legitimate concerns that lack of these community services could result in delayed discharge from hospital (Scott, 2010; Pellett, 2016), increased emergency department visits and potential admissions (Wynn and Moore, 2012; Tay et al, 2016), additional stress on hospital staff and resources (Rojas-García et al, 2018) and increased healthcare costs (Tay et al, 2016). Further, the lack of social interaction and physical activity could have a negative impact on mental and physical health.

Hence, the services of community nurses and other community nursing teams were continued with risk mitigation strategies. Community nursing teams continued to play a critical role but with novel adaptations of the

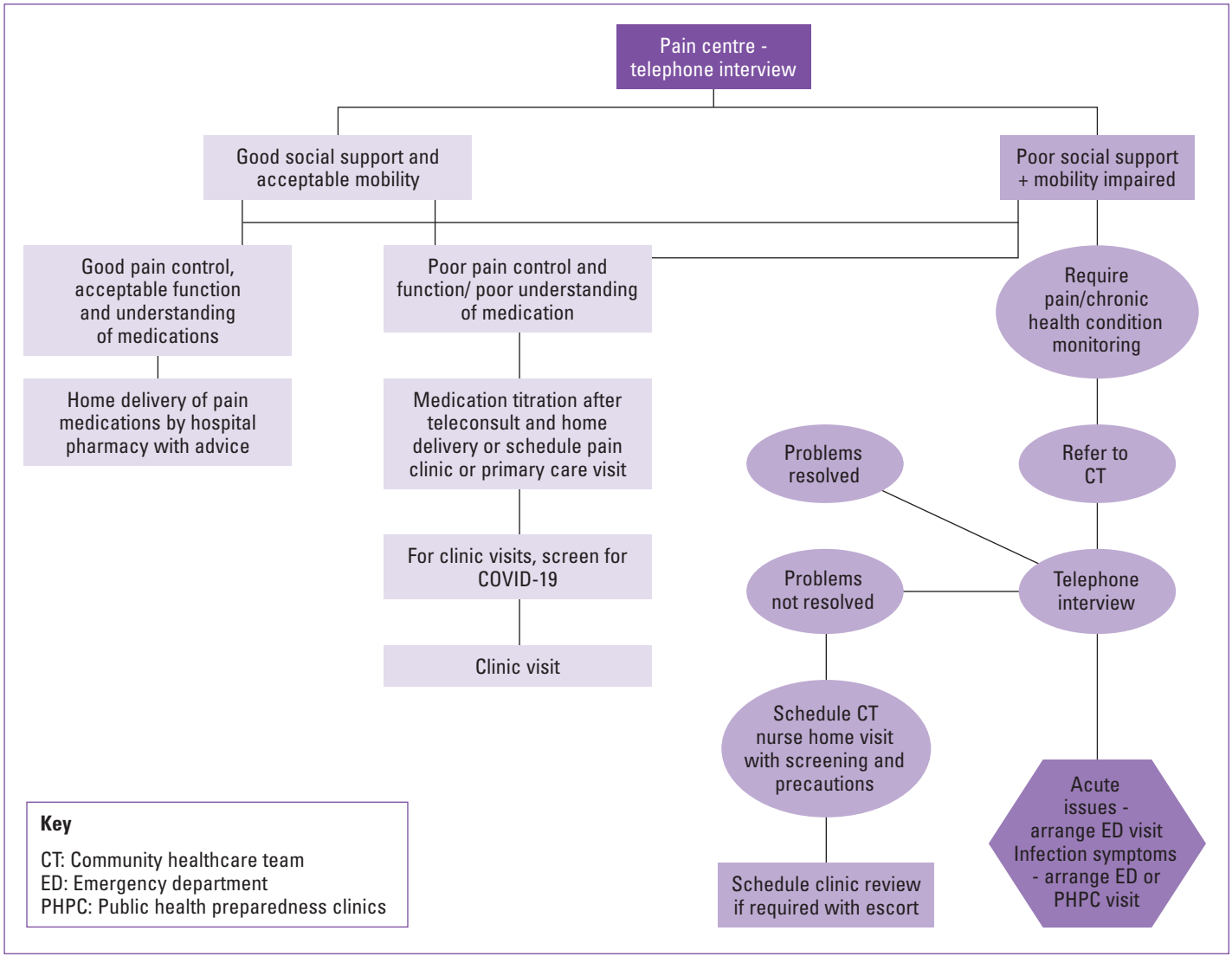

Figure 1. Workflow for referral to and management by community healthcare teams

traditional face-to-face consults where possible, to telephone and video consultations. Community nursing post services ceased, but support through home visits was permitted for essential services with strict adherence to precautionary measures, including:

1. Triage of patients via teleconsultations and electronic medical records to determine need for visits: the interview included screening for COVID-19 in patients and family members and assessment of health, medication supply and social support. Integrated electronic healthcare records could also indicate the need for visits. If patients were uncontactable and known to have poor social support, a visit was carried out to ensure life, wellbeing and absence of accidents. Patients with symptoms of fever, respiratory tract infections and close contact with COVID-19-positive patients were referred to the nearby public health preparedness clinic (PHPC) or emergency department with appropriate coordination
2. Face-to-face visits were limited to 30 minutes, with the bulk of the essential assessment performed through telephone interviews and electronic health records review
3. A risk-based approach for personal protective equipment (PPE) use was adopted. Community nurses wear full PPE (N95 mask, gown, gloves and eye protection) when interacting with those identified as high risk
4. Virtual meetings were arranged with teams and community service providers to discuss patient care, which replaced in-person meetings.

Discussion

The collaboration between a tertiary pain centre and community teams described here facilitated continuity of care for vulnerable older adults without the need for clinic visits during the COVID-19 pandemic.

Lessons learnt by community teams

During home visits, community nurses noticed insufficient supply of chronic disease and pain medications as appointments had been postponed by clinics or patients. Furthermore, a small group of older people living alone with home quarantine orders had no provision for medication top-up. Community nurses remained accessible

to ensure these groups had a primary care provider and a constant supply of medication through the medication delivery service from hospital or primary care polyclinics.

Despite much interest in the recent years in the use of telemedicine for chronic disease management, it had thus far received a lukewarm response from both primary and tertiary care clinics (Chada, 2017) due to the inability to perform physical examinations and limited information exchange. The COVID-19 pandemic catalysed the widespread use of telemedicine and virtual consultations in hospital clinics, general practice (primary care) and community nursing practice in the UK as well as other countries (Black, 2020). In Singapore, teleconsultation has now been recognised as a feasible solution, allowing assessment and social interaction and shortening the waiting times to consultations while fulfilling the requirements of social distancing. Older people and the less 'tech savvy' among the pain clinic's patients were not open to the concept of video-consults initially, preferring telephone interviews and face-to-face consultations. Community nurses need to be well-versed with the relevant questions that must be posed to patients and caregivers for an accurate assessment during teleconsultations. Factors that nurses felt impeded accurate assessment included impaired cognition and hearing of patients, lack of self-monitoring devices and their inability to physically assess the patients' overall home environment and non-verbal cues.

Pandemic recovery phase and planning for a new normal

Going forward, infection control measures need to be aligned with national policies, with stringent screening and triage of patients in place prior to clinic visits and procedures. Staff need to self-monitor for infections.

For some time after the COVID-19 pandemic, it will be necessary to reduce clinic visits for stable patients whose medicines are being delivered. This was done efficiently during COVID-19 with collaboration with pharmacies, and when necessary, with community healthcare teams helping with medication reconciliation and screening.

Chronic or long-term illnesses are potentially at risk of neglect during national emergencies and pandemics (Fernandez et al, 2002; Spiegel et al, 2002; Mudur, 2005; CEBM, 2020). Lessons learnt in Singapore during the COVID-19 pandemic may be applied to set in place a robust plan of care for patients with chronic pain during emergencies. The MOH has already communicated to all teams the need to implement protocols to meet the needs of older patients and the vulnerable during periods of crisis.

During normal times, a comprehensive pain management plan should involve identification of vulnerable populations with disability (from pain or disease), multiple comorbidities and poor social support. Collaboration between community healthcare teams and primary healthcare is needed, with a view to ensure continuity of seamless care in the community for the vulnerable. Quality improvement and clinical research studies should be conducted, measuring patient-centred and quality-of-life outcomes to optimise pandemic-ready workflows and enhance community collaboration. Geographically defined team-based collaborations are essential in bridging the gaps between hospital pain management services and primary healthcare through community nursing teams and social care service providers. Government support and funding is in place in Singapore for provision of these services during future pandemics.

A plan is in place for the tertiary pain centre to conduct virtual pain clinics in the community, with hospital pain teams seeing and initiating treatment for chronic pain patients with multiple comorbidities and mobility impairment in their own homes. Subsequent monitoring and continuity of care may be ensured with integration of care with community healthcare teams. Community nurses can also play a critical role in referring chronic pain patients to relevant community services, such as day-care centres and community-based physiotherapy for the holistic management of patients.

The lack of telemedicine integrated into the pain management service was a critical deficiency during the pandemic, and the experiences were similar in other countries as well (Omboni, 2020). Direct face-to-face consultations facilitate accurate assessment and diagnosis but pose risks of exposure during a pandemic. During an influenza pandemic in Britain, telephone and internet access to patients helped reduce hospital visits and gave patients a helpful point of contact (Rutter et al, 2014). During COVID-19 in Wuhan and Shenzhen in China, telemedicine support played a critical role in outpatient pain management (Song et al, 2020). UK data showed an unprecedented change in both patient and physician preference to use teleconsultation over face-to-face interviews over a short time, and this has helped GPs offer a faster service with increased patient satisfaction (Black, 2020). Patients are reassured of having regular and timely follow-ups while being spared the inconvenience of travelling to the clinic for a routine checkup. Similarly, physicians, they are able to monitor disease progression and propose timely interventions (Chada, 2017). The NHS has been advocating the use of telemedicine especially during the pandemic to reduce the risk of acquiring infections in healthcare premises, while shortening the waiting times for patients to be seen (NHS, 2020). In addition, there are significant time and cost-savings made to both the individual patient and the economy (Chada, 2017). Telemedicine is the way forward in carefully selected patients (Greenhalgh et al, 2018), with promise of significant utility during emergencies and pandemics.

As some patients have verbalised their inability to manage video-consultation platforms, community teams should explore the activation and mobilisation of community volunteers who could assist these patients to be digitally connected with their health and social care providers by improve accessibility to mobile devices and information technology literacy. The volunteers could equip patients with mobile devices and train them in using online platforms to communicate. Future video-consultation

KEY POINTS

- As the COVID-19 pandemic shows no signs of abating, it needs to be ensure that those with chronic and cancer pain are not neglected
- A model of rapid integration of a pain centre with community healthcare teams was used in Singapore to care for vulnerable older patients with chronic pain and multiple comorbidities
- Community nurses played an integral role in the management of patients with chronic pain, including those on high-risk medications, such as opioids
- Telemedicine is a viable alternative to face-to-face consults during the pandemic, although some older patients who do not accept it readily will require home visits.

CPD REFLECTIVE QUESTIONS

- What skill do community teams need to manage patients on opioids?
- What other long-term conditions could benefit from such a collaboration between a tertiary specialist clinic and community teams?
- Given the opioid crisis in some countries, what precautions should community teams take when collaborating in managing patients on opioids?
- What are the advantages and disadvantages of community healthcare teams using telemedicine for consultations?

kiosks in the community and shared video consultation (multiple service providers with patients) could be future value adds. Physicians, community nurses and patients should be trained in video consultation (NHS England, 2020). This would allow integrated care with institutional pain centre physicians at scheduled times.

Despite the convenience of telemedicine during this pandemic, it must also be noted that not all patients will be eligible for virtual consultations (Greenhalgh et al, 2018). Virtual consultations provide an adjunct to traditional face-to-face consultations, the mainstay of clinical practice (Chada, 2017). Using virtual consultations for preventive health and chronic stable conditions while continuing to use face-to-face consultations for acute and complex cases could be the new normal for community nursing teams and specialist clinics (NHS England, 2020).

Conclusion

This article described a collaboration between a tertiary pain management service and community healthcare teams during the COVID-19 pandemic, to ensure continuity of care for patients. This venture enabled the provision of care for vulnerable older people with chronic pain and multiple comorbidities who were at risk of deterioration from healthcare disruption. In an environment of scarce resources, such collaborations could help mitigate unnecessary emergency department visits and admissions and prevent delay in discharge. Community nurses can play an integral role in collaborative management of chronic pain patients who require monitoring of symptoms and chronic conditions, especially if they are on high-risk medications, such as opioids. The community nurses in the present study adopted a virtual platform for public education on preventive health and medication counselling, which minimised the infection risks, while enabling them to help more patients. Their presence in the community bridged the service gaps beyond the hospital and allowed greater accessibility to healthcare for vulnerable people during the pandemic.

Integration of community healthcare teams into the holistic, long-term management plans for vulnerable patients with chronic pain should be the new normal for all pain management services. Data and experience on the use of telemedicine by various medical services, including community healthcare teams, during the COVID-19 pandemic should be evaluated for consideration for wider implementation, as it promises to be a useful tool. **BJCN**

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