

HOW CAN WE IMPROVE THE DECISION TO TRANSFER PATIENTS FROM REGIONAL OR RURAL HOSPITALS?

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EXECUTIVE SUMMARY

Inter-Hospital Transfers (IHT) are an important part of the healthcare system to ensure that patients are able to access appropriate care which may not be available at the hospital they originally attend. Delays in IHT can negatively impact patient care and patient outcomes. Issues with IHT, in particular delays, affect more regional and rural hospitals than metropolitan hospitals.

The aim of this project is to develop and test behavioural strategies to improve the decision to transfer patients to another hospital, with a particular focus on IHT from regional and rural hospitals.

We conducted a rapid review of the literature identifying two reviews and 14 primary studies. Collectively, these studies found:

- Decisions to transfer patients are influenced by clinical factors, an increased chance of survival, quality of care and need for a specific test or procedure.
- There is some symmetry in decision factors between clinicians and patients.
- Patients are willing to travel for required care.
- There is evidence that education, reminders and protocols can improve IHT through selecting the correct patients and ensuring all relevant information is collected and communicated.
- Communication during IHT is not always optimal.
- Protocols may serve as visual aids or prompts as to what information needs to be passed between providers.
- Simple practical steps to ensure good communication across a network of hospitals include; single 'direct dial' telephone numbers, regular face-to-face meetings and in the case of running trials across the trauma system, the use of social media to create a group identity for research.¹
- Telemedicine can also assist in providing support to decide whether patients require IHT and to support care prior to transfer. However, telemedicine does not reduce or remove the need for IHT.

We consulted with a panel of 15 Victorian community members to better understand their perspectives on IHT. Their main concerns about IHT centred around delays (due to bed availability, transport availability, indecisiveness, dismissal of patient and family concerns or delays in diagnosis). They also had concerns about miscommunication between hospitals and lack of consideration of the implications of IHT for patients and families (including comfort and financial considerations). Panel members believed that patients and their families should be informed throughout the entire IHT process and should feel comfortable to speak up if they have concerns. They suggested a number of interventions to improve IHT processes, including dedicated transfer teams, improved information transfer systems and education.

Interviews conducted with Ambulance Victoria staff, healthcare professionals, consultants, and researchers reiterated the issues contributing to IHT delays. Lack of skills, seniority and equipment were cited as contributing to delays in transfer decision making, however telemedicine, capability frameworks and protocols were reported to assist with timely decision making. Pushback from metropolitan hospitals and transport providers about the necessity of transfer was highlighted as another major factor contributing to IHT delays. Adequate support to manage patients while awaiting transfer, bed availability and transport availability were cited as major factors impacting on safe and timely transfer.

AIMS

The aim of this project is to develop and test a behavioural strategy to improve decisions to transfer patients from regional and rural hospitals, with a focus on transfers to metropolitan hospitals. The methods used to address this aim are:

- Application of BehaviourWorks Australia's established three-phase method of applying behaviour change through **exploration** of the problem, **deep dive** to understand behavioural drivers and context and **application** of findings to a trial of a behaviour change strategy;
- A structured approach to evidence review and stakeholder dialogue, the Forum method^{2,3}

Table 1 outlines this approach. This briefing document contains findings from the exploration phase. The Briefing Document is directed towards groups with expertise in or experience in Inter-Hospital Transfers. These include clinicians, health service organisations, consumers and consumer representatives, researchers, the Victorian Department of Health and Human Services (DHHS) and the Victorian Managed Insurance Authority (VMIA). Details of the research methods employed in producing this briefing document can be found in Appendix 1.

Table 1. Project overview

EXPLORATION
<p>Rapid review of evidence into barriers and facilitators of Inter-Hospital Transfers and the effectiveness of strategies to improve decisions to transfer patients that are feasible and sustainable in the hospital setting.</p> <p>Examination of current practice and key issues in Inter-Hospital Transfers through:</p> <ul style="list-style-type: none"> • A day-long citizen panel in which members of the Victorian community discuss key challenges; and • One-on-one interviews with clinicians, researchers and other experts in the field.
DEEP DIVE
<p>Convene a representative stakeholder group to:</p> <ul style="list-style-type: none"> • Gain a shared understanding of key issues in Inter-Hospital Transfers; • Identify and prioritise behavioural interventions that are feasible, can be trialled within 6 months and are scaleable across various Victorian health settings and services; • Determine broad characteristics of a high-priority trial for further development. <p>A day-long structured stakeholder dialogue will be held on February 1, 2018. The dialogue aims to connect the information from this briefing document with the people who can make change happen and deliberate upon this shared challenge. Collective problem solving through multi-stakeholder dialogue has been used around the world to address healthcare policy and practice challenges. Participants consistently demonstrate high satisfaction and high intention to act upon evidence discussed in dialogues. Specific questions for deliberation at this stakeholder dialogue are presented at the end of this briefing document.</p>
APPLICATION
<p>The BehaviourWorks research team, in collaboration with VMIA, DHHS and participating health services, will develop, implement and evaluate a pilot trial of a high-priority intervention in a Victorian hospital setting. The pilot trial is anticipated to be conducted in 2019.</p>

INTRODUCTION

INTER-HOSPITAL TRANSFERS

Inter-hospital transfers (IHTs) of patients in need of more specialised care to a receiving (often larger) hospital can result in better health outcomes for patients.⁴

A safe, effective IHT is:

1. timely and suited to the patient's needs;
2. completed with a competent transfer team; and
3. where the facilities, quality of communication and documentation are excellent.⁵

There are multiple types of IHT, from urgent ambulance transfers through to non-urgent stretcher transfers and private transfers. Most IHT occur by road, however, some cases require air transport.

Stretcher services are provided to low, medium and high-acuity patients who require treatment, monitoring, observation or supervision during transport. These services involve the provision of non-emergency patient transport (NEPT) transport via road.⁶ Approximately 230,000 patients are transported annually through contracted non-emergency patient transport providers as well as in-house clinic car and stretcher services.⁶

In line with the NEPT Regulations, all stretcher transport must:

1. Be clinically necessary;
2. The patient must require active clinical monitoring or supervision during transport; and
3. Have been authorised by the appropriate medical professional.

Any IHT by ambulance must be authorised by health professionals (e.g. medical practitioner, registered nurse or a paramedic working in the Ambulance Victoria (AV) communications centre) who can make an informed decision about whether there is a genuine clinical need for a patient to be transported by ambulance instead of any other way.⁶

Coordinating IHT

Adult Retrieval Victoria (ARV) is a department of AV responsible for coordinating doctors, paramedics, ambulances, planes, helicopters and equipment to transfer critically ill patients between hospitals. The department's 30 clinical coordinators and retrieval specialists handle approximately 4,200 cases a year, working with almost 150 hospitals across the state.

Before IHT can occur, the patient chart, any imaging and investigation results need to be compiled.

Many IHT happen from regional or rural hospitals to metropolitan hospitals. The five top referring hospitals through ARV were all regional hospitals; regional referrals accounted for approximately 75% of cases.⁷ Regional referrals also have a longer case duration on average. This is due to a number of factors including available transport and longer transport distances.

The Alfred, St. Vincent's and The Royal Melbourne Hospitals are the most common receiving sites. Geelong Hospital operates as a strong regional and geographical catchment. While non-tertiary metro hospitals and regional hospitals receive 23% of ARV case distribution.⁷ This distribution is generally consistent year on year.

The most common reasons for IHT include urgent care such as trauma and cardiac. After urgent care, neurological/neurosurgery, respiratory, gastro and sepsis accounted for a significant portion of cases. There are some areas which may be at high risk of needing IHT, including maternity, immediate stroke care, trauma and surgical transfers (VMIA claims data).

Males are significantly more commonly in need of retrieval or critical care transfer services, with patients over 60 years forming 48% of the ARV caseload.⁷ Those patients who are transferred tend to have poorer overall health and more morbidities, and greater illness severity.⁴

Reasons for IHT

A major reason for transfer is to provide a higher level of care, such as access to critical care support, and it is expected that rural and some regional hospitals will have a greater need to transfer patients.⁸ The growing lack of specialty coverage available in rural areas and the concentration of specialty services in metropolitan hospitals have made IHT a critical component of patient management.⁹

For example, in one study, 61% of IHTs were to larger hospitals with greater speciality.⁴ ARV found that the main reason for IHT was 'specialised clinician service not available' which accounted for 3601 cases, compared with the next reason 'prehospital notification' which accounted for 302.⁷

Some transfers are for straightforward access to particular resources, such as imaging.¹⁰ In a study of one rural Emergency Department (ED) in the United States, 28% of all the ED's inter-facility transfers were required solely for CT imaging.¹¹ However, in many cases, greater speciality care or surgery is required.

Issues with IHT

In Australia, issues with IHT were identified in 6.6% of cases in 2016-2017, an increase from 4.6% in the period 2012-2016.¹² Delays were recorded in 9.4% of transfer cases, while inadequate clinical information and documentation was provided to the receiving hospital in 9.2% of transfer cases.

Delays in appropriate transfer can negatively impact patient care and outcomes. For example, time delays can significantly affect surgical outcomes.⁸ It is recommended that due to their limited physiological reserves, time delays should be minimised for elderly or frail patients who need to be transferred between hospitals.

Transfer problems were more frequently seen in rural regions (18.5%) compared with metropolitan areas (8.7%). Wider scopes of practice, reduced critical care support and logistical problems associated with large distances from major hospitals contribute to potential differences in outcomes for rural surgical patients.¹³ A median time of 9.3 hours was noted from decision making to transfer out of the hospital, with delay commonly caused by lack of bed availability in the receiving hospital. Patient transfer is often delayed or deferred because the receiving hospital is not taking new patients. This has serious consequences for patients whose condition declines or who die while waiting for transfer.¹⁴

IHT and Trauma

Trauma patients were significantly less likely to experience delays when compared with non-trauma patients (5.3 hours and 10.6 hours respectively).¹³ While this demonstrates effectiveness of established trauma pathways, non-trauma surgical emergencies such as limb ischaemia requiring vascular intervention had transfer times of up to 26 hours, placing greater burden on rural surgical teams who must manage these patients without necessary equipment, subspecialty expertise or critical care support. Thus, more resources towards bed availability at receiving hospitals is required to provide optimal care for patients.

Receiving Hospitals

Care during transfer and arrival at the receiving hospital is also paramount to patient care. In New South Wales, one study found that almost half of the transfer patients were admitted with a different principal diagnosis to the one they received at the referring hospital.⁴ This finding emphasises the importance of collecting and communicating patient information and transferring that to the receiving hospital.

WHAT DOES THE EVIDENCE SAY?

RAPID REVIEW FINDINGS

A rapid literature review was undertaken to identify, evaluate and synthesise published literature investigating interventions that address barriers to timeliness of patient transfer from regional or rural hospitals.

Rapid reviews are an emerging method of efficiently synthesising research evidence in health policy and other settings where a broad overview of research evidence is required in a short timeframe.

Caution needs to be applied interpreting rapid review findings, as more comprehensive review approaches may elucidate further information and insights, which would influence review interpretation and conclusions.¹⁵ Therefore, systematic reviews remain the definitive method of literature review, and we recommend systematic reviews be undertaken whenever possible. Further details of the review and other methods employed in producing this briefing document can be found in Appendix 1.

The literature search yielded a total of 4002 citations after the removal of duplicates. Following screening, one moderate quality (9/16) systematic review and one narrative review were eligible for inclusion in the rapid review, in addition 14 primary studies were included to supplement the evidence review.

Collectively, the included evidence covers decision factors in transfers, communication and telemedicine. A synthesis of this evidence is presented below.

Decision Factors

Clinician decisions

The first step in IHT involves the decision being made at the referring hospital to transfer the patient. If there are delays in this decision, this may have adverse effects on the patient. The decision to transfer a patient to another hospital for care is dependent on a number of factors including the capabilities of the referring hospital, capacity at the receiving hospital, and financial factors.⁹

Surgeons at community or regional hospitals often refer patients for transfer after recognising limitations in the capacity to manage the patient locally.¹⁴ In contrast, surgeons at the receiving hospitals do not decide whether to accept patients; they uniformly accept all transfers upon request.

In general, accepting clinicians, referring clinicians and patients/family all agreed that increased chance of survival, quality of care and need for a specific test or procedure were important reasons for transfer.¹⁶ This is supported by other studies which cite the most frequent reason leading to decision to transfer is the lack of resources at the referring hospital and specific guidelines provided by transfer networks.¹⁷ These may include condition-specific or trauma guidelines. When asked to prioritise factors that contribute to their decision to transfer a patient, clinicians weighted availability of medical expertise as being by far the most important reason for transfer.¹⁷

Availability of medical expertise was considered the most important reason to transfer patients.

Clinical factors also play a strong role in transfer decisions. A UK retrospective cohort study found that the decision to transfer to a neurosurgical unit was influenced by clinical factors such as larger haematomas, younger age of patient, and female sex of patient.¹⁸ These factors were related to clinical implications and hence resulted in a lower threshold for early transfer and investigation. In the

neurosurgical context, advancing age greatly reduced the likelihood of transfer; however, it should be noted that for other conditions increased age increases the likelihood of transfer (e.g. stroke).

Accepting clinicians, referring clinicians, and patients/family were less likely to rate patient or family requesting the transfer as important reasons for transfer^{16,17}. Both accepting clinicians and referring clinicians were less likely than patients/family to endorse having experienced clinicians at the receiving hospital as a major reason to transfer, and they were also less likely to rate that the patient feeling that their health was not improving as important to the transfer process.¹⁶

A study of US providers identified emergency physicians (80%) as the most frequent decision-maker on whether to transfer, and the vast majority (98%) cited emergency physicians as responsible for selecting the mode of transport (e.g. ground ambulance, air, private vehicle).¹⁷

One area in which decision rules have been tested is for selection of appropriate transfer personnel. In one example, Australian investigators showed that a 15-minute education session and reminder posters could train clinicians, nurses, and paramedics to categorize patients by illness severity and select an appropriate level of escort during transfer, even 3 months after the training session.¹⁹

Furthermore, investigations into which patients to transfer found that a non-transfer protocol provided adequate guidance on which patients with mild traumatic brain injuries could stay safely at a rural facility. Over the course of 6 years, no patient who satisfied the non-transfer protocol required a neurosurgical intervention, suffered neurologic deterioration, or required a delayed transfer.²⁰ This may be true for other types of patients as well²¹, over a third of patients transferred to another Emergency Department for traumatic injury are discharged from the second ED without admission, observation, or procedures. Telemedicine consultation with sub-specialists might reduce some of these transfers.²¹

Education, reminders and protocols can help identify which patients should be transferred.

Patient decisions

The experiences of patients who undergo IHT generally fall into three categories; 'scary and stressful', 'recovery and relief' or as a 'slide into insignificance'²². It was a relief for patients when staff informed, explained, gave advice and were supportive and when staff introduced the new ward and followed up what had happened in the former hospital. Patients transferred between hospitals, such as from a rural hospital to a metropolitan hospital, were used to feeling at home at the local hospital. The large receiving hospital did not make them feel at ease; they felt insignificant and unnoticed.²²

Patient decision factors in a US study predominantly related to two factors; proximity to home and the expertise of the other hospital.¹⁷ Patients who had been transferred for new diagnoses or for a complex injury or illness seemed more willing to request IHT than those patients transferred for conditions they considered to be more 'ordinary'. Many patients felt that although proximity to home was the most important factor to them, they would compromise on that point to be treated with the expertise of the receiving hospital.¹⁷ Most patients expressed their preference to transfer regardless of telemedicine availability.

Clinicians, however, tend to think that the transfer factors that are most important to patients are non-medical factors such as proximity to home, a personal relationship with the clinician and financial factors.¹⁷

The lack of agreement between clinician and patient responses may stem from communication failures. Poor patient-clinician communication may result in transfers that are solely based on perceived differences in quality, but yet actually stem from patient concerns surrounding their

prognosis or questions about their care currently not being addressed.¹⁶ A qualitative study reported that patients undergoing transfers commonly cited poor clinician communication as a major reason to request a transfer. They also found that the referring clinician and patient often disagreed about who initiated the transfer process. Together, these studies reinforce that patient preferences may be misunderstood or minimized in the process of IHT.¹⁶

Improving the quality of communication between patients and clinicians may result in increased patient satisfaction and potentially a reduction in the number of transfers driven by patient dissatisfaction or concerns.¹⁶

Communication

Communication before, during and after IHT is at times sub-optimal.²³ In a study of communication quality for patients who had undergone an IHT, compared with communication guidelines, there was substantial variability across different communication items. Factors such as intended level of care,

During IHT, intended level of care, imaging and pertinent vital sign information is poorly communicated.

pertinent imaging, pertinent vital signs and outstanding imaging results were poorly communicated. However, the reason for transfer, presentation and hospital course were usually communicated clearly on the majority of calls.²⁴

A systematic review of protocols on communication found that when a protocol is implemented, more information will be passed between providers; they can increase patient contact time, and also increase satisfaction with hospital culture and pre-planning.²⁵ Protocols may serve as visual aids or prompts

as to what information needs to be passed between providers.

Simple practical steps to ensure good communication across a network of hospitals include; single 'direct dial' telephone numbers, regular face-to-face meetings and in the case of running trials across the trauma system, the use of social media to create a group identity for research.¹

Other strategies, such as regional information exchanges (which facilitate electronic sharing information across a geographical region), can also improve patient information transfer in comparison with sending patient documents in non-electronic form. Regional municipal health centres have benefited from the use of health information exchanges, when it was possible to see patient data in specialised care organisations.²⁶ Healthcare professionals and administrative staff found that health information exchanges improved inter-organisational co-operation, enabling access to patient information about what had been carried out and planned in the other organisation regarding patient care.²⁶

Telemedicine

Telemedicine may help navigate or negate the need for IHT. Emergency department-based telemedicine consultation is most often requested for the most severely injured rural trauma patients, especially with those with penetrating trauma, burns, and abnormal presenting vital signs.²⁷ However, in a study of US regional trauma patients, telemedicine consultation was not independently associated with increased probability of transfer.²⁷ Furthermore, in a regional healthcare system, implementation of a tele-ICU (intensive care unit) program was actually associated with an increase in IHT transfers from less resourced ICUs to the receiving hospital, a trend that was not readily explained by increased severity of illness.²⁸ These studies suggest that telemedicine may be used to aid the decision to transfer patients, but does not seem to reduce the need for IHT.

WHAT CAN WE LEARN FROM THE EXPERIENCES OF EXPERTS?

Interviews were conducted with two Ambulance Victoria staff, two Directors of Medical Services, a consultant, a researcher, a Chief Medical Officer, a Quality and Risk Manager, a Patient Flow Coordinator, a Unit Manager, a Director of Clinical Operations and a Director of Nursing. The themes from these interviews are summarized below.

PATIENTS LIKELY TO BE TRANSFERRED FROM RURAL/REGIONAL HOSPITALS TO METROPOLITAN HOSPITALS

Patients require IHT when the initial hospital does not have the capability to manage the patient. Patient cohorts often reported to require transfer include surgical, cardiac, paediatric, mental health, orthopaedic, neurosurgery, gynaecological and trauma patients. Patients requiring certain tests or imaging, e.g. MRI, may also need to be transferred if the initial hospital does not have the appropriate equipment.

FACTORS INFLUENCING TRANSFER DECISION MAKING

Making the initial decision to transfer

Rural and regional health services may have difficulty determining whether a patient needs to be transferred as they may lack the skills, seniority or equipment to make accurate diagnostic decisions. These hospitals often need specialist opinion to determine the acuity of a patient.

“Some hospitals don’t have GPs available so they’ll use nurse practitioners, so then you’ve got another sort of influence as to exactly who is manning that, what support they’ve got locally, whether there is systems in place for them to maybe call a larger hospital and get some input”.

Sometimes the decision to transfer may be made too quickly, without considering how the patient may be managed without transfer.

“...there’s some cases that we’ve transferred out that we definitely could have managed here”.

To help with this decision process, telemedicine could provide access to advice from other hospitals or from transport services. However, not all metropolitan hospitals are set up for telemedicine, and some regions do not have the ability to videoconference. Furthermore, Paediatric Infant Perinatal Emergency Retrieval (PIPER) does not use videoconferencing at all.

“We’re trialling the use of videoconferencing so the GPs that may actually live in the next town for instance can see the patient in an urgent care centre and then make the decision about whether to come in and whether the patient needs to be transferred”.

Hospital protocols detailing when patients should be transferred may also assist with decision-making. Providing rural and regional hospitals with additional equipment (e.g. portable ultrasound machines) may also assist in transfer decision making, as they will have more clinical information to make diagnoses.

“A few bits and pieces of equipment would probably cover off a lot of initial things that would provide more information like portable ultrasound machines, a little bit of training with that, I think the doctors would be able to get a bit more information”.

While there are clear capability frameworks for maternity and transfer guidelines for trauma, these are yet to be established for other patient cohorts. Many participants suggested that it would be useful for the Transport providers may need to have access to the capabilities of various hospitals when they are speaking with them.

“There has to be a clear way of especially the retrieval teams knowing what the capability framework is in each hospital”.

It is also important to note that the capability of a hospital to manage patients is not static, rather it varies depending on the skill mix on the day. This means that a patient may not be high acuity, however that does not negate the fact that the rural or regional hospital cannot manage them based on their staffing.

“For us it’s not necessarily just about the acuity of the patient, it’s about our available resources here. So sometimes our skill mix is not, how we would want it or someone on the oncoming shift might not be able to, might not be at a level that can deal with that”.

Receiving feedback about previous transfer decisions could also help regional and rural hospital staff to improve future transfers.

“For our own learning and quality improvement, it would be nice to be able to get some feedback to know whether, you know, one the transfer was appropriate and two, was there anything else we could have done to actually prepare the patient better”.

Determining the appropriate destination

Once the decision to transfer has been made, patients may not be transferred to the most appropriate destination for definitive management. This may be due to a higher likelihood of transfers within existing networks that staff have developed.

“And they’ll often come here with their own networks and sort of collegiality set up. So they’ll refer to certain areas which may not necessarily be best for the patient”.

Pushback

Rural and regional hospital staff reported experiencing pushback from metropolitan hospitals and from transport providers when requesting transfers. This was often due to a lack of knowledge around a particular hospital’s capabilities by registrars at the receiving hospitals.

“To do that triage you need a certain amount of knowledge. Not only about the clinical condition, but you need knowledge about the capability of the hospital that you’re picking up from, the lay of the land there”.

At times, the pushback may be due to a lack of confidence in the receiving registrar to know if and when they should accept transferred patients.

“It may be that at the other end the registrar is not confident in accepting patients. So sometimes we do say to them, could you at least speak to the consultant and see what they think”.

Consultants generally have a better understanding of hospital capabilities. Whilst consultants at receiving hospitals were helpful with assisting the organization of transfers, they could be difficult to contact.

“They have to be very forceful to speak to the consultant, and then generally if they have the conversation with the consultant, the consultant will take the patient”.

Rural and regional hospital staff received less pushback from staff at hospitals with which they had established informal transfer pathways. These pathways could be formalised to ensure smooth transfers between rural and regional and metropolitan hospitals.

“The other [idea] is that each rural hospital has an arrangement with a metro hospital and the metro hospital always takes your patients”.

Patient and family needs

Patient and family needs are often taken into account when making IHT decisions. Where possible, the convenience of IHT for families should be considered. Ideally, families want patients to be transferred to geographically close metropolitan hospitals, however this does not always align with bed availability. While patients may disagree with the need for transfer or the chosen destination, they often do not have a choice within the public system. Family members also need to be consulted if a patient is nearing the end of life and transfer is being discussed as they may not want to be away from home if the patient dies. It is also important to keep the family informed about transfer delays so they don't arrive at the receiving hospital hours before the patient.

“They don't want the patient transferred or they don't want the patient to go to the hospital that we've nominated. But, in the public sector, you don't have much of a choice usually”.

“The last thing you want is for someone to be in Melbourne to pass away within a number of hours and then the family have to come back”.

FACTORS INFLUENCING SAFE AND TIMELY TRANSFER

Support to manage patients while awaiting transfer

Rural and regional hospital staff often require interim clinical support and advice to manage patients who are awaiting transfer. While Adult Retrieval Victoria (ARV) provide this support while urgent patients are awaiting transfer, having established relationships with consultants in other health services can assist rural and regional to seek advice for the management of non-urgent patients. These conversations can also be facilitated by telemedicine.

“ARV is a really good resource for the interim management of the patient that needs transfer”.

“If we can get an intensivist to review the patient we'll do it on a videoconference so that they can see the patient and monitor the ventilators and that kind of stuff as well prior to transfer”.

If there is a significant wait time for IHT, patient management may be difficult in a facility which is not adequately equipped to manage their health condition.

“Assessment was made and a twelve hour window was thought of, I don't think there was any thought given to what twelve hours can do to a patient like this in a facility which is not geared to take care of them”.

Furthermore, the referring hospital needs to be made aware of any delays as this will impact on the management of the patient.

“They usually can give us a timeframe... or they give us an update and go ‘Look we’ve been deserted but we’ll be there by such and such time’. And that’s ok because you can plan and go forward and accommodate for that sort of thing so you know have staff stay an extra hour after the shift”.

Bed availability

Finding an available bed at a receiving hospital contributes to IHT delays. Rural and regional hospitals are required to contact individual hospitals to locate a bed for non-urgent patients, which can take a significant amount of time. Furthermore, beds may become unavailable during transfer.

“They do have difficulty finding beds sometimes in Melbourne hospitals. The issue of the bed being taken, so yes we have a bed but you must move the patient now and if you don’t move the patient now well the bed’s gone”.

While ARV and the private sector have centralised bed management systems, this does not exist in the public system for non-urgent patients. It was suggested that having access to a centralised system showing all available beds with the ability to guarantee transfer to the next available bed would assist in improving the safety and timeliness of IHT.

“The poor rural sites are probably having to contact individual units and then being told based solely on beds try xyz. So a centralized, real-time access to beds would probably be very useful.

Transport availability

In addition to bed availability, waiting for a mode of transfer to become available also increases delays. While it was suggested that private transfer companies should be the first option for hospitals booking non-urgent transfers, hospitals often book non-urgent vehicles to transport patients home, thus reducing the vehicles available for IHT. Hospitals were also reported to make requests for transfer to occur when transport service staff are not rostered, which had a flow on effect, delaying subsequent transfers. One participant suggested that transports could start in Melbourne and bring people back to regional and rural locations and then be ready to take more patients back to Melbourne.

“If you’ve got hospitals booking non-emergency ambulances to take people home, that’s taking up your non-emergency resource that could otherwise be taking the sicker patient from a hospital to a hospital”.

“Doctors obviously do their rounds at hospitals at particular times of day and that’s when they decide at 4 that they need to move a patient. Obviously we don’t have huge numbers of non-emergency transport availability after 4 in the afternoon. All of a sudden it can have a flow-on effect that you’re pushing people to the next day”

As some rural and regional hospitals are many hours away from metropolitan hospitals, stepped transport can help to ensure that rural and regional areas aren’t without an ambulance for long periods of time.

“If the referral hospital is three hours away, it is reasonably difficult to do that for the simple reasons that the township where the transfer is originating from becomes devoid of one ambulance crew for an extended period of time”.

“So people can be transferred from Spot A to Spot B where they get transferred to a local crew from there who takes it from B to C”.

Appropriate communication

Hospital staff at regional and rural hospitals need to ensure that they are providing relevant information to receiving hospitals and transport providers in order to accurately determine the acuity level of the patient. Furthermore, those on the receiving end of the conversation should be asking appropriate questions (i.e. have relevant tests been conducted?) to ascertain further information and listening in a non-judgemental manner.

“ESTA (Emergency Services Telecommunications Authority) have a script that they follow and we’ve given them guidelines as to what is considered an emergency or non-emergency event. It will be based on the information provided by the hospital as to which guideline they’ll go down”.

“The strategy I used to use was I’d rehearse the conversation with whoever I’m calling and then work out, now what sort of questions is he likely to ask me and have I covered my bases? Have I done the appropriate tests? Or asked appropriate questions? Before I make the phone call... and the person on the other end needs to be a good listener”.

Checklists can act as a prompt to ensure that all relevant information is passed on in time-critical situations. Furthermore, the use of ISBAR and standardised transfer forms have reportedly improved handover.

“Obviously the patient demographics and the referring hospital, receiving hospital, presenting complaints, background history, investigations and management to date, things to follow up on. It’s an ISBAR type form”.

WHAT DO CITIZENS VALUE?

During a citizen panel convened on the 20th of November 2018, 15 socio-demographically diverse Victorian community members were provided with a plain language version of this briefing document. One-third of the participants represented the general population, one-third had been transferred from a regional hospital to a metropolitan hospital and one-third had a family member who had been transferred from a regional hospital to a metropolitan hospital. During the deliberation about the problem, citizens were asked to share what they view as the key challenges in IHT from regional/rural settings. Citizens were asked to reflect on their own experiences and those of family and friends to consider the underlying challenges and inform the types of interventions which may be appropriate. The key themes of the discussion from the perspective of participants are summarised below.

Theme	Details
Main concerns about inter-hospital transfer	<p>Delays in transfer</p> <ul style="list-style-type: none"> • Specialty services and senior staff are often lacking in regional and rural areas. Junior doctors don't always know when to transfer patients and may not have adequate supervision, especially in rural areas. • Delays in transfer often result from: <ul style="list-style-type: none"> ○ Delayed recognition for the need to transfer i.e. due to delays in diagnosis or misdiagnosis ○ Uncertainty and indecisiveness surrounding the need for transfer ○ Staff dismissal of patient concerns ○ Poor communication between hospitals ○ Availability of transport ○ Bed availability at receiving hospitals ○ Prioritisation of urgent patients ○ Amount of paperwork that needs to be completed prior to transfer ○ Detours during transfer • Delayed transfer can have implications for meals and medication management. • Shift changeover can lead to miscommunication between staff. <p>Communication and Management between hospitals</p> <ul style="list-style-type: none"> • Miscommunication or mistrust between two hospitals can lead to repeat testing. • Receiving hospitals don't always know that patients are coming and subsequently don't prepare for their arrival. <p>Patient and Family considerations</p>

	<ul style="list-style-type: none"> • Patients and families are often not provided any comfort or counselling while IHT is being considered. • IHT can have significant financial implications on patients and their families. • Patient comfort is not prioritised during transfer. • Patients may need to find their own way home following discharge.
Patient and family role in inter-hospital transfer decisions	<ul style="list-style-type: none"> • Patients and their families should be able to speak up when they are concerned and know that they will be listened to. However, participants acknowledged that it is difficult for most people to be assertive. • Patients and their families should be informed about the patient transfer process, particularly about the inevitability of delays and expected timelines for transfer. • Patients and families should be consulted during the transfer decision making process and staff should ask about and acknowledge their concerns. • If possible, patients and their families should be given adequate time to process and discuss transfer options.
Suggested interventions to improve inter-hospital transfer	<p>Transfer Management</p> <ul style="list-style-type: none"> • A transfer team comprised of non-medical staff (i.e. social workers) could act as a case management or liaison service and relay information between hospitals. This would free up medical staff time and could be assembled like a crisis team. The volunteer workforce could also be drawn upon. • Patient comfort should be considered when planning transfers. • Keep patients and their families informed about when they will be reviewed, when decisions about transfer will be made and the reason for any delays. This information could be displayed on a whiteboard at the bedside so that it is clear and accessible. <p>Information Management</p> <ul style="list-style-type: none"> • Systems could be implemented to track the transfer of information between hospitals and ensure that the referring and receiving hospitals are on the same page. • Information should be transferred electronically and hard copies should accompany the patient during transfer. • Feedback could be obtained from previously transferred patients via telephone to continually improve the quality of inter-hospital transfers.

	<ul style="list-style-type: none"> Referring hospital staff should contact experts at receiving hospitals to ensure that they receive correct information in a timely manner. A checklist could be completed prior to transfer to ensure that relevant information is transferred between hospitals including test results, details of relevant family members and their involvement (i.e. whether they will be meeting the patient at the receiving hospital), and any relevant concerns (i.e. medical, emotional and financial needs of patients or their families). This could be completed as part of a standardised handover between staff and hospitals. <p>Between Hospital Communication</p> <ul style="list-style-type: none"> Bed availability at the receiving hospital should be assessed prior to transfer. Hospitals should be aware of resources at other hospitals i.e. available equipment, number of patients, bed availability, and frequency of transfers. Hospitals should be regularly updated on nearby hospital news which may have implications for inter-hospital transfers i.e. renovations or equipment that is out of order. Hospitals should have a fleet of cars for timely transport. <p>Education</p> <ul style="list-style-type: none"> Junior doctors should be educated on the need for transfer and ensure they are adequately supervised to assist with decision making. A protocol should outline when people are likely to need transfer and act as a triage system.
Implementation considerations	<ul style="list-style-type: none"> Funding may act as a barrier to obtaining additional resources to improve inter-hospital transfer. The frequency of inter-hospital transfer at a particular hospital may also influence their likelihood of implementing interventions to improve processes.

QUESTIONS FOR DELIBERATION

1. What are the biggest challenges in the decision to transfer and transferring patients to another hospital, in particular to a metropolitan hospital?
2. Is there a specific condition, environment, transfer process or other potential focus for behaviour change?
3. What identified behaviour change interventions are:
 - a. Feasible
 - b. Testable in the short term i.e. 6 months
 - c. Scalable across Victoria
 - d. Measureable (i.e. sufficient volume in timeframe for key outcomes)
 - e. Sustainable?
4. Which is the highest priority for a pilot study and why?
5. What are appropriate success measures for a pilot study?

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APPENDIX 1: PROJECT METHODS

THE FORUM APPROACH

This project is based on the Forum approach, an established method of promoting evidence-informed practice change, which involves four key activities:

1. Defining a major challenge through consultation with key stakeholders to understand the issues and complexities;
2. Gathering from published literature and further consultation the information necessary to properly consider the challenge, and presenting this in a briefing document (i.e. this document);
3. Convening a structured stakeholder dialogue to connect the information from the briefing document with the people representing key stakeholder groups who can make change happen; and
4. Reporting outcomes through a dialogue summary and related academic publications and briefing the organisations and individuals who can affect change about their role in developed strategies.

The Forum approach of evidence review and structured stakeholder dialogue was established by John Lavis in Canada in 2009. Subsequently Dr Peter Bragge and Professor Russell Gruen were funded by the Victoria Transport Accident Commission from 2012 - 2015 to lead the first Australian-based Forum program, which focused on addressing high-priority challenges in brain and spinal cord injury care, research and policy. Outputs of the NTRI Forum program have been published online and in peer-reviewed literature. Satisfaction in the NTRI Forum process was high based up on participant surveys, with a mean score of 6.4 / 7 (where 1 is 'Failed' and 7 is 'Achieved') for ranking of how well the briefing document achieved its purpose (N =114, response rate 45%) and 6.0 / 7 for the stakeholder dialogue (N=192, RR 76%).

RAPID REVIEW METHODS

Search strategy

A comprehensive search of the following databases was undertaken: PsycINFO via Ovid, Medline via Ovid, Web of Science and Cochrane Library via Wiley. The PsycINFO search strategy is reproduced below:

Table 3. PsycINFO search strategy

Search string	
1	Inter-hospital OR small hospital OR regional hospital OR rural hospital OR small health service OR (between adj2 hospital)
2	Care discontinuities OR handoff* of care OR information transfer OR patient transfer OR hospital transfer OR continuity of care OR continuity of patient care OR transportation of patients
3	barrier* OR hurdle* OR obstruct* OR hinder* OR challenge* OR facilitat* OR promot* OR support* OR encourag* OR incentive* OR contribut* OR enabl* OR factor* OR intervention* OR trial* OR program* OR "quality improvement" OR communication

Screening and selection

Two reviewers screened the citations against the inclusion and exclusion criteria listed in Table 4. Data extracted from the included articles was used to inform a commentary on the implications of IHT from regional and rural hospitals. Data extraction tables are available on request.

Table 4. Inclusion and exclusion criteria

	Include	Exclude
Study Type	<ul style="list-style-type: none">• Systematic or narrative reviews (of quantitative or qualitative studies) and primary studies	
Population	<ul style="list-style-type: none">• Health professionals, patients and families	
Study Design	<ul style="list-style-type: none">• Qualitative, observational or interventional	
Study Setting	<ul style="list-style-type: none">• Hospital settings	<ul style="list-style-type: none">• Community healthcare settings or non-healthcare settings
Intervention	<ul style="list-style-type: none">• Improving inter-hospital patient transfer	<ul style="list-style-type: none">• Intra-hospital escalation of care
Outcome	<ul style="list-style-type: none">• Patient care or patient safety	
Publication Status	<ul style="list-style-type: none">• English language• Peer-reviewed journal publications or reports• Published from 2013-2018	

CITIZEN PANEL METHODS

Facilitation framework

Understanding Inter-Hospital Transfers

- What perspective do you bring to today? What challenges or other experiences have you encountered with hospital transfers?
- What are your main concerns about hospital transfers?

How could we improve how patients are transferred between hospitals?

- Based on your experience, what do you think could be done to improve when and how patients are transferred to other hospitals?
- What role should patients and families play?
- How can we improve how staff handle the decision and process?

What factors make it hard to solve issues with Inter-Hospital Transfers?

- What are the main challenges to successful inter-hospital transfer?

Participants

Socio-demographically diverse Victorian community members were recruited through ACI research services.

Procedure

The citizen panel was convened on the 20th of November 2018 and participants gave informed consent. Citizens were provided with a plain language version of this briefing document. During the

deliberation of the problem, citizens were asked to share their opinions and underlying values on the deliberation questions. Citizens were asked to reflect on their own experiences and those of family and friends to consider the underlying challenges and inform the types of interventions which may be appropriate.

CONSULTATION INTERVIEW METHODS

Interview framework

The interviews were semi-structured, allowing the interviewer to explore emerging themes as well as salient issues²⁹. The interview framework was as follows:

1. Can you provide a brief introduction and outline your role in the patient transfer context (inter-hospital), including how long you have been in this role?
2. From your perspective and experience, what are the key issues that need to be addressed in order to optimize the decision process to transfer patients from regional/rural hospitals to metropolitan hospitals?
3. Which patients are most likely (or least) to be escalated across health services?
4. What are the barriers to transferring from a regional/rural hospital to a metropolitan hospital?
 - a. Why might patients not be transferred in a timely manner?
 - b. What factors go into the decision to transfer a patient?
5. What strategies are you aware of that have been employed in the past to improve the timeliness and safety of transferring patients from regional/rural hospitals to metropolitan hospitals?
 - a. (if answered 5) How successful have these strategies been?
 - b. (if answered 5a) What factors do you think have contributed to the success or failure of previous strategies?
6. Do you have any other comments on patient transfer between regional/rural hospitals and metropolitan hospitals?

Participants

Participants were purposively selected based upon their experience and/or expertise in the area of inter-hospital patient transfer³⁰.

Procedure

Participants were contacted by BehaviourWorks Australia and invited to take part. Research aims and procedures were outlined in an Explanatory Statement given to all participants prior to the interview. All interviews were conducted via telephone. Interviews lasted between 16 and 46 minutes. Interviews were conducted by AL between November and December November 2018. Interviews were digitally audio-recorded, transcribed verbatim, anonymised and stored securely.

Analysis

Interview transcripts were coded and analysed thematically³¹ using a computer-assisted qualitative data analysis software program (NVivo 11, QSR International Pty Ltd 2014, Doncaster). Interview transcripts were coded according to emergent themes relevant to the topic. Direct quotations from interview transcripts were used to illustrate key themes. The participant categories (i.e. role and responsibilities) have been de-identified.

[illegible]

[illegible]

