

Winston Churchill Memorial Trust Travelling Fellowship



Holistic Rehabilitation from Intensive Care: Lessons from America

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Background and Purpose of Fellowship

The purpose of my Winston Churchill Memorial Trust Fellowship was to explore rehabilitation from the Intensive Care Unit (ICU). North American Researchers have made major steps in developing holistic care pathways for patients leaving the critical care setting; therefore, the USA was picked as my destination for the four week Fellowship. The main aims of the fellowship were:

- To explore methods of early mobilisation in the ICU;
- Analyse the role of the social worker in ICU, and examine how this impacts on ICU recovery;
- Critically evaluate the use of sedation scoring in ICU and how this impacts on ICU stay;
- Explore the use of alcohol scoring systems in critical care;
- Examine the support given to those patients admitted to critical care with a background of alcohol dependency;
- Explore quality improvement programmes utilised in the USA and how these programmes impact on ICU recovery.

Texas Medical Centre

Texas Medical Centre is the largest Medical Centre in the world, with the highest density of clinical facilities for patient care. Located in Houston, the centre contains 49 medical related institutions, including 13 hospitals, two speciality institutions, two Medical Schools and four Nursing Schools.

Memorial Hermann

My first stop in Texas Medical Centre was the 7am weekly meeting held in Memorial Hermann (MH) Emergency and Trauma Department. MH, the first hospital to open in the Texas Medical Centre, is a level one Medical Centre which indicates that it has a fully comprehensive trauma service.

This meeting gave me a good grounding in the type of patients seen in MH. Each week the trauma patients who have been admitted to MH are reviewed. I was really impressed with how this meeting was managed. There was no reflective tool as such utilised; however, the meeting was based around constructive, critical, clinical reflection. The case was discussed, what was good and bad about the patient care was then discussed, then finally, how they team could have improved the treatment for the patient, or what could have been done differently in future. What was particularly impressive about the meeting was that when people were speaking about what was good/bad and what could have been done differently, it was in a non-threatening and constructive manner, and no one felt defensive or 'ashamed' of what had happened. I think that this was the case as the most senior doctors and nurses present also stated what they could have done differently if the same case came about.

At the end of the meeting, a page for a trauma in the Emergency Room (ER) came through so we attended this admission. All specialities were present (neurosurgical, general etc.). The patient care was seamless. An ER physician asked people to review the patient one at a time and verbally give a handover. While this was being done a chest x ray was being carried out and the patient prepared for CT. Within 3-5 minutes the patient was en route to CT. The communication was flawless and this prevented any delays in patient care.

I then shadowed one of the nurses in the ER for a short period as we took the patient from the trauma up to the Neurosurgical ICU. What was particularly interesting about this transfer was the use of restraints to ensure that the patient remained safe (stop the patient from pulling out ET tube etc.). This is something which isn't used in UK ICU's. If patients require restraint to ensure their safety we will use pharmaceutical restraints (as a last resort). At first I was quite shocked. However, the more I thought about the use of sedation in ICU and the problems related with the use of certain sedative drugs, the more I was convinced that neither option was superior.

I then returned to the ER. At this point we had the time to discuss the impact of alcohol dependency on hospital admissions in Houston and how this is managed within MH. All patients who have an alcohol related admission into the ER are referred to social work and then, if appropriate and if the patient consents, are referred on to other service such as Alcoholics Anonymous. The assessment used is the CAGE assessment for alcohol dependency. It is a straight forward questionnaire, made up of four simple questions.

My last stop of the day was the burns unit in MH. I was particularly interested in visiting this ICU as we manage burns patients in the unit I work. Unlike the burns unit in Glasgow, where all un-intubated patients remain on the burns ward and all intubated patient are admitted to ICU, all burns patients (intubated and non- intubated) are cared for in the same unit. We discussed a variety of topics concerning the care of the burns patient. I was really interested to hear that many of the same issues were occurring within this burns unit as well (excessive fluid resuscitation etc.). However, this unit was using a modified version of a widely known burns resuscitation formula (The Parkland Formula) and had seen improvements in patient outcome with it. This is something that I will look to review when I return to my own ICU.

On my second day in Houston, I attended the case conference which occurs every morning within the ICU. The main aim of this conference is to bring the Multi-Disciplinary Team (MDT) together to develop plans to get each patient discharged home quickly and safely. This meeting not only aims to ensure that health care resources are being delivered efficiently; they are also designed to ensure that the patient is receiving a quality discharge package. This meeting –led by ‘Miss Martha’- was incredibly well run and clearly very useful. Each morning it was attended by a social worker, dietician, physiotherapist, charge Nurse, case manager, home help team and pharmacist.

In MH there is a specific social worker assigned to the ICU (Burns and Surgical). Cindy had so many pivotal roles within the unit. These included:

- Aiding patients in completing appropriate benefits forms (although a different healthcare system, this would be invaluable in the critical care setting in the UK);
- Starting the discharge process on day one in the ICU for the patient, including looking at housing, occupational health, physical therapy, home helps etc. I was so impressed that this process started almost immediately. Not only does this provide seamless care in the patient journey, it clearly has an impact on length of stay in ICU and the hospital, which in turn impacts on the cost effectiveness of the service.
- If the patient scored positive in their CAGE assessment (either in the ICU or ER) or had been positive for drugs or alcohol on admission, Cindy was given a referral for the patient. Cindy would then speak to the patient (post extubation) and discuss their need with regards to rehabilitation. We spoke about how this was really a ‘window of opportunity’ for patients to be receptive to rehabilitation for addictions.
- Cindy’s role clearly overlapped with the Chaplin as well. Many patients just longed for someone to listen to their problems and needs and offer them a ‘shoulder to cry on’. Cindy also stated that often relatives would ask about help for their addictions and access to services after they seen their loved ones in ICU.

The social worker could make such a huge difference to patient and family care in ICU in the UK in so many different ways. Although the social worker will function in a slightly different way within UK units due to differences in healthcare and welfare systems, there role has the potential to make improvements in the quality of patient care. Additionally, they have the potential to improve the experiences of family members.

On my final day in Houston, I attended the outpatient trauma clinic in MH. Patients were here primarily for physiological follow up after being admitted into critical and intermediate care

following surgical interventions. However, what made this clinic particularly interesting and indeed colourful was that they were led by an 84 year old cowboy Surgeon (he was particularly proud of being a cowboy)! His name was Dr 'Red' Duke. Dr Duke was instrumental in introducing MH's 'Life Flight' programme and the bringing the first Level one Trauma Service to Texas. Dr Duke talked me through the injuries and the many social problems that are seen daily in Texas and the use of the Life Flight programme. Life Flight is a critical care medical transport system, which cover a 150 mile radius of the Texas Medical Service.

I then got to visit the Life Flight Helicopter pad based at MH. This program is similar to the Emergency Medical Retrieval Service (EMRS) run in Scotland. EMRS, like the Life Flight team go to rural areas that are not service by appropriate medical care and fly them to critical care settings.



The Life Flight Program which runs out of Memorial Hermann

The Institute for Rehabilitation and Research

During my time in Houston I had the opportunity to visit The Institute for Rehabilitation and Research (TIRR) attached to MH. This particular unit takes many patients post trauma and Critical Care. They care for a variety of patients including brain injury, stroke, multiple trauma, amputation as well as chronic disease conditions such as Multiple sclerosis and Rheumatoid Arthritis. Further, they care for both ventilated and unventilated patients. I was overwhelmed by the service provided both by the hospital staff and indeed the outpatient clinics here. They had a variety of different activities available including music therapy, Pet therapy (dogs visit daily!), gardening, swimming etc. Further patients are able to access social workers, addiction workers, dieticians, chaplaincy service and psychotherapists on a daily basis to aid in their recovery. One thing I have to add is TIRR have not had a Ventilator Associated Pneumonia (VAP) since 2006! This is a phenomenal record, especially since they allow their ventilated patients outside and in swimming pools! I feel

the outpatient model would work brilliantly as an ICU follow up clinic in the UK. This could really help improve patients rehabilitation and more importantly their quality of life in the short and long term.

Ben Taub

On my third day in the Texas Medical Centre I visited Ben Taub, the area's county facility. It is the other Level One in hospital in the Texas Medical Centre. This visit gave me a real insight into the American Healthcare System. Their ICU was similar to many of those in the UK in terms of layout, with patient bed surrounding the Nursing station and a number of single rooms for isolation patients.

I would like to say a special thank you to Shelia Lopez, Director of Trauma and Emergency Medicine at MH, Medical Centre. Shelia took the time to organise my visits to the different areas within the medical centre and really took care of me while I was in Houston. I would also like to thank Madelyn and Robin for answering my many questions! I would also like to say a special thank you to Kathy Luther. Kathy took time out of her busy schedule to make my stay in Houston extra special. Lastly, I would like to thank all the staff in the various places that I visited in Houston for answering my many questions and taking the time to let me see their wonderful areas of work.



Shelia Lopez- Director of Trauma Service at Hermann Memorial

Salt Lake City, Utah



Respiratory ICU, Intermountain Hospital, Salt Lake City

Intermountain Hospital, Salt Lake City

My first day in Utah was spent at Intermountain hospital (IMH), Murray, Salt Lake City. In recent years IMH has made huge advances in early mobilisation of critically ill patients (including ventilated patients). During my first day in the unit I observed a patient on moderate amounts of ventilation (PEEP 8) mobilising approximately 20 feet with the aid of the respiratory therapist, nurse, physical therapist and critical care technician (nursing auxiliary). If I am being honest I think I was more nervous than the patient! Although early mobilisation is an element of care I have read about in research literature, it was invaluable to see how this works practically within the unit's everyday workload. Additionally, examining how members of the team work together to actually mobilise the patient was instrumental for my future practice.

What was particularly important during this experience was understanding the role of the family member during the mobilisation process. The patient's daughter was also involved in the mobilising and encouraging her mum to participate in the process. The team were very keen to have family support to help motivate the patient and to ensure the patient understood the need for physical activity.

The unit had open visiting (24 hours a day) for family members with a kitchen available for them to make drinks and some meals. They also had a family partnership pledge which stated what the family and patients should expect from the healthcare facility and also what the healthcare facility should expect from family members. I really liked this 'pledge', although it would have to be altered slightly within the UK, this could be an excellent way to develop family and hospital relationships.



A ventilated patient mobilising in the ICU

The ward rounds in IMH also had all members of the MDT present including: Pharmacists, respiratory therapists, dietician, case manager, nurse, charge nurse, research fellow, Attending and social worker. A major part of the ward round was the development of an activity plan for the patient. The unit had developed a protocol for the mobility of patients which included allowing the patient to sit up right at the side of the bed ('dangle'), right through to having the patient walking a certain distance.

The main ethos of the unit was also very clear within this part of the ward round which prompted me to reflect critically about my current practice. The unit's philosophy was that there should be nothing to 'rehab' from after critical care, and if proper mobilisation and correct methods of sedation management are employed a patient may be free of many of the physical and cognitive disabilities that they often leave ICU with.

I was lucky enough to attend lectures within the RICU at IMH. The first lecture was from Jim, the permanent physical therapist in the unit. Jim discussed the many physical and psychological benefits of early mobilisation with ICU and indeed the many challenges. However, what was clear was that this is an essential intervention in ICU and something that should be being done routinely.

We then had a very insightful talk from the Nurse Manager in the unit. Vicki is really a pioneer on this subject and her talk was incredibly thought provoking. Vicki spoke about what initially drove her to start this programme within her unit. Her ethos is that it is not enough just to get the patient to 'the door' and mortality from ICU and indeed hospital mortality should no longer be standard outcome measures. We should be looking at quality of life after ICU and how we can improve this for patients and family members.

Vicki also spoke of her 'four legs of the chair' – the four key elements which are essential to improve patient outcomes from ICU. The four legs are:

- Sleep

- Effective delirium management
- Reduction in sedative drugs
- Staged early mobilisation within the ICU setting

We spoke extensively about how these are such simple concepts but are often difficult to achieve in the ICU. However, each are interrelated and often 'getting on top of one' can have major effects on each of the other elements. For example, by mobilising the patient early in their ICU stay, you will often enhance the patients sleeping pattern (patients are often exhausted after activity), which may help reduce the use of sedative drugs and hence the incidence of delirium within patients.

Latter Day Saints Hospital

While in Salt Lake City I also attended the Latter Day Saint Hospital (LDS). LDS has a mixed medical and surgical ICU similar to many units within the UK. In the early afternoon I went on a 'safety round' with the Advanced Nurse Practitioner in the Unit. This round establishes the patient's greatest safety risks and identifies them using key symbols placed on the patients door. Unlike previous safety rounds which I have seen, there is a very structured approach, with process data collection (what do we do about these safety risks?) and outcome measures (what were the outcomes of using certain interventions to prevent incidents?). For example, if the patients is at risk of a skin injury, increased turning of the patient could be implemented or a specialist mattress could be ordered. The outcomes would look at what was implemented and the results of this implementation. This round was simple and very quick, yet focused the team on the real issues which could impact on the patient's recovery for ICU. This is something which could easily be implemented into the daily workload of the MDT within the UK.

During the ward round on my final day in Salt Lake, I was very interested to hear that the nurses handed over the estimated number of hours sleep they thought the patient had had the previous night. It is well known that patients are often hugely sleep deprived within the ICU, which could be a key contributor to delirium and indeed increased mortality. Although admittedly it is very difficult to tell if a patient is indeed sleeping and the quality of sleep which they are having, it was a very interesting discussion point to have during the ward round. Reasons why the patient perhaps wasn't sleeping well and how the MDT could facilitate 'better' sleep were also discussed (i.e. the use of ear plugs, has the patient been sleeping during the day, had they had any activity the previous day).



The Team at Intermountain Hospital ICU, Salt Lake City

I would to say a special thanks to Terry Clemmer and Vicki Spuhler who made my time so enjoyable in Salt Lake City. Also I would like to thank all of the MDT in IMH and LDS- especially Mike, who will never live down that he asked the nurse from Glasgow if she 'used the Glasgow Coma Scale'!

Vanderbilt University Medical Centre, Nashville



What Nashville is typically famous for!

Vanderbilt University Hospital is a 658 bedded hospital located in the heart of Nashville, Tennessee. The hospital is home to the region's only level one trauma centre.

In medical and coronary ICU patients, delirium has been reported to be an independent predictor of prolonged ICU and hospital length of stay, as well as higher six month mortality. Further, delirium may also pre dispose ICU survivors to prolonged neuropsychological deficits. The purpose of my visit to Nashville was to spend time with the ICU delirium and cognitive impairment study group and critically evaluate how delirium and sedation are managed within their patient group.

I attended the ward rounds within the medical ICU in Vanderbilt on my first morning. A tool used with each patient during the ward round was the 'A,B,C,D,E' framework. Unlike the UK (where this approach is used for resuscitation of the patient), Vanderbilt use this as an approach for managing delirium in their patients.

- **A**wake and **B**reathing Co-ordination
- **C**hoice of Sedation
- **D**elirium monitoring and treatment
- **E**arly mobility and **E**xercise

During the ward round clear plans were established for the day, including how other members of the MDT would contribute (e.g. how will the physical therapist contribute to exercise?). The 'brain bundle' was also integrated within this framework. The four elements of the brain bundle were:

- The Richmond Agitation-Sedation Scale (RASS) actual
- RASS goal
- Confusion Assessment Method for ICU (CAM-ICU) score
- The patient's current sedation requirements.

This bundle, which took approximately 20-30 seconds to state, helped establish clear targets for a patient in a systematic fashion. This bundle was given just as high priority as renal function and cardiac function and 'targets' for sedation and delirium management were set in the same way as, for example, fluid management would be set. In the UK, we often forget how functionally 'attacked' the brain is during the ICU stay and as a result, mobility and delirium management are often introduced when the patient is starting to 'recover'.



The delirium group were also involved in a study which looked specifically at how cognition training within the critical care setting impacts on short and long term outcomes for the critically ill patient. In this study cognition work was defined as 20 minutes twice daily 'brain training'. This cognition work was being carried out by the research nurse in Vanderbilt at present; however, in the British ICU population there is no reason why bedside nurses and medical staff within ICU cannot build this into their working day. Friends and families who are visiting could also be encouraged to contribute with simple puzzles and memory work.

I had the opportunity to meet with Jim Jackson a clinical psychologist who is lead on neuropsychology research and assessment and long term follow up within the delirium group. Jim, who has completed large volumes of ground breaking work on post ICU cognitive function, had so many ideas on simple measures which could be developed to help patients when they leave ICU to help manage cognitive and brain dysfunction. This could be simple measures such as developing an information leaflet aimed at specific populations, to help prepare individuals with what to expect (i.e. poor memory) when they leave ICU. Although, some of these booklets and information sheets exist in the UK, it was interesting to hear how he would structure and approach the development of this resource. We also discussed how ICU could have an impact on behaviours and lifestyle (i.e. alcohol consumption, smoking, diet) after hospital discharge. This was very exciting for me as this is my future PhD topic! This is an area which has never been explored in the literature; however, I think both Jim and I are very interested in future collaborations between the UK and Nashville for research in this specific area.

I would like to say a special thanks to all the team at Vanderbilt, especially; Bill, Cayce, Leanne, Wes and Jim for making me feel so welcome!



Bill Pojedinec, the project manager of the ICU Delirium study group

Boston

Institute of Healthcare Improvement

I was very lucky to be able to visit the Institute of Healthcare Improvement's (IHI) Office in Cambridge, Boston. The IHI has worked in partnership with NHS Scotland and The Scottish Patient Safety Programme since 2007. The objective of the Scottish Patient Safety Programme (SPSP) is to improve hospital care across the Country, using evidence based tools and techniques to improve the reliability and safety of everyday healthcare system processes. The IHI, which is a non-profit organisation has helped lead on this improvement project. I have been involved in a number of initiatives with the SPSP, within the critical care field, so I was very excited to visit IHI.

Initially, I was able to meet with different individuals who run a variety of different projects within the IHI, some directly involved with the Scottish and British Projects. These included the manager of the triple aim project (Improve the health of the population, enhance patient experience and reduce healthcare costs), the manager of the STAAR project (State action on avoidable readmissions). I also spoke with the manager of the international project for low and middle income countries. It was fascinating to hear what can be achieved even in the most deprived communities when there is leadership and clear aims.

During my time at the IHI I attended the Patient Safety Officer Training. The key speakers of the course discussed: the importance of the design of systems and the impact that this has on delivery; the importance of crisis management and how objectives can be achieved. These speakers, especially the final speaker of the day helped me think critically about how I will actually implement all that I had learnt during my fellowship in the States.

Beth Israel Deaconess Medical Centre

I had the opportunity to visit the Beth Israel Deaconess Medical Centre (BIDMC). The BIDMC is a major teaching hospital of Harvard Medical School. The main propose of my visit to BIDMC was to explore their Patient Family Advisory Council. The ICU Patient and Family Advisory group was set up in 2008, with the purpose of providing a forum for patients and families to suggest improvements in quality, safety and communications and hospital processes. The group is primarily run by a social worker, Barbara and a consultant intensivist. The group looks at various topics within the ICU and the information generated directly feeds into practice within the ICU's. For example, the group have helped shaped decisions on: relative visiting times; patient and relative information forms; the design of relative waiting areas and overnight stay rooms and the role of family members during multi- disciplinary ward rounds in the ICU.

Although I was not in Boston at the time of one of the Council meetings, I was able to gain a real feel for what the Council does through speaking with the Co-ordinator of the project and Barbara. What really surprised me about the Council is the things that healthcare professionals 'presume' about the needs of families and patients. For example, the Council assumed that relatives would want open visiting 24 hours a day, to facilitate families being with their loved ones. However, this was actually not the case and although the Council wanted to abolish formal visiting hours, they did want a structured approach to visiting.

The Council takes a tremendous amount of organisation, from the interview process for members (there is strict criteria for members) through to the actual delivery of each group. However, this group does not only benefit those directly involved in council meetings, it helps establish true patient centred care.

I would like to say a huge thank you to everyone at BIDMC and the IHI for all of their help and support with my fellowship. I would like to say a special thank you to Saranya, Ninon, Sarah and Alyssa and the IHI, and Barbara, Kirstin and Leslie at BIDMC. I would also like to say a special thanks to Professor Nancy Bittner and everyone at Regis College Nursing School and Rosie's Homeless shelter who I also spent time with while I was in Boston.



Harvard Medical School at Beth Israel Deaconess Medical Centre

Conclusions and Key Learning Points

Exploring the role of the social worker in the ICU was the highlight of my visit to the Texas Medical Centre. In Glasgow there are many areas which are socially and economically deprived, and many patients have a variety of social problems. Having a social worker present on ward rounds in the ICU could have a major impact on the quality of care and social rehabilitation that these patients receive. Additionally, this role has the potential to reduce hospital and ICU stay- the IHI triple Aim. The addition of this role to the ICU team is something which I fully intend to explore.

The development of Vicki's 'four legs of the chair' is something which will stay with me in my future practice. Already in the unit, we have developed plans for the mobilisation of ventilated patients. However, all four elements of this 'rehabilitation bundle' must be present to ensure truly effective care. This may be something which I try and integrate as part of a 'brain bundle' which clearly worked so well in Nashville.

In my upcoming PhD I am planning to develop a 'stakeholder' group to help review documentation and certain processes in my research. This is by no means compulsory; rather, I felt this would help ensure my research was more rigorous. After visiting BIDMC and hearing of their initiative, I feel that this must be compulsory within our NHS. We need to listen to the view of patients and visitors if we are to meet the needs of the population that we are treating.

Finally, I would like to thank the Winston Churchill Memorial Trust for supporting my Fellowship. I had the most fantastic experience which will undoubtedly change my future practice. I would like to extend a special thank you to both Jamie and Julia, who helped me with the planning and execution of my fellowship.