NZNO coastn

COLLEGE of AIR & SURFACE TRANSPORT NURSES

E-Magazine

Online Publication

July 2020

Edition

Photo supplied by Angela Coward

Night time retrieval.

College of Air and Surface Transport Nurses Section of the New Zealand Nurses Organisation

www.nzno.org.nz/groups/sections/flightnurses

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COASTN Committee 2020

Back Row: Toni Johnson, Di Fuller, Helen Poole, Mutian Tait, Amanda Thompson.

Front Row: Annie Bradley-Ingle, Jo Knight, Lynette Will.

Absent from photo; Angela Coward.

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Letter from the Editor

Hi Everyone,

Welcome to another delayed edition of the E– mag, it seems that everyone has been keeping busy with the follow on from COVID-19 lockdowns. Thank you to those who have contributed to this edition with some really interesting case studies and articles, it is great to see the emag becoming more of a learning and sharing forum. If you wish to start a conversation or comment on any of these studies or submissions please send me a 'letter to the editor' and I will publish those along with any responses in the next edition.

It seems that after a mild autumn across most of the country winter has well and truly arrived and is making it's presence known! The cold, wet , windy conditions add another dimension to the world of aeromedical and transport nursing and is unlikely to be the part of our job that we find addictive or alluring! I am not sure that I ever factored any of this into the job when I chose flight nursing as a career path, but it still hasn't put me off after all of these years.

Happy reading everyone. Thank you again to all who have contributed, with special thanks to Christine Edgar, Rodger Hyde and Lara Millar for sharing their personal experiences with the COASTN group.

Take care, stay warm,

Angela

Chair report – June 2020.

Hello to all our flight & transport nurse colleagues. I hope this edition of the e-mag finds everyone well – with the return to near-normal (or should that be new normal) following New Zealand's experience of the Covid-19 global pandemic. As a critical care nurse can I say how grateful I am that the leaders of the country sought out & listened to expert advice in handling this pandemic, & as a result I know our ICU has not experienced the huge influx of patients that was being predicted in the early MoH modelling. Having been part of the team caring for one critically unwell Covid-19 positive patient I could not imagine how we would ever have coped with the 38 patients we were predicted to receive (when, including transport ventilators & anaesthetic machines, the total number of ventilators we could physically provide was 37!).

Along with physical mechanical/equipment related resources the biggest challenge was going to be achieving the necessary number of critically care capable nurses – something all of the ICUs around the country were facing. With this in mind it was interesting (and probably somewhat fortunate) that demand for our retrieval service significantly decreased. I would be interested to know if this was the case nationally, and am also interested to find out how each of the transport/retrieval services was affected by the pandemic: from those who participate in international repatriations & retrievals (and the restrictions they faced in terms of border closures & isolation/quarantine requirements), to services such as mine that are resourced from the ICU floor (requiring secondary rosters for those retrieval nurses as it became obvious they could not be released from the clinical shifts if workload increased). The editors of Kai Tiaki are also keen to hear from all nurses about how they fared during the pandemic – so please consider submitting an article for them to share with the NZ nursing fraternity. Ongoing work on IHT service restructuring took a backseat during the pandemic, but as things slowly return to business-as-usual no doubt work streams will be reactivated. If offered a chance to participate or feedback in any of these processes please take the time to do so & thus ensure your voice is heard.

Winter is upon us and the changing weather also impacts some services in terms of the modes of transport that may be required during IHT (rotary, fixed wing and road – or a mixture of all 3). As the shortest day draws closer we in the South tend to brace ourselves for a drop in temperatures & lowering freezing levels which can be challenging. The positive side to this is for all the skiers & snowboarders out there it heralds the opening of the ski season – and this year maybe many Kiwis will be able to have a winter staycation enjoying themselves on the slopes. If this is the case spare a thought for you colleagues who will always be happy to come & rescue/repatriate you if you do not bend or bounce as easily as you once did!

Toni.

Update from Sub-Committee

7 July 2020

The National Standard for Education and Ongoing Competency Requirements for NZ Flight Nurses is now complete and available for reference and use on the COASTN website; as is the education calendar.

Prior to COVID-19, work on developing the COASTN Passport quickly revealed that the desired format we had come to envisage for the Passport was going to be cost-prohibitive.

The sub-committee then started to discuss possibilities of how we could fund the Passport in the format that we were hoping for; simultaneously we started to consider other formats we could utilise that would likely be more cost realistic.

COVID-19 then struck us. As I am sure you are all aware the preparation for this potential onslaught consumed health staff's time and energy throughout the country on a massive scale. For many, preparing work environments and staff to be able to manage and work safely with COVID-19 became the absolute priority – to the exclusion of most other work. Some intensive care units underwent partial re-construction to be able to properly isolate infectious cases; education programmes for large numbers of nursing and medical staff working with COVID infectious patients were established and rolled out. For some individual ICU's this was for 100+ nursing staff. This included what PPE to use when; correct donning and doffing, training around high risk aerosolising procedures such as intubation, testing for face masks fitting correctly, writing guidelines that also needed to align with a wider working environment so there was consistency of practice; establishing how these patients were going to be managed in the back of ambulances and in the aeromedical environment. Entire DHB's completely altered their working systems. Information that was coming to hand as the pandemic evolved saw procedures, protocols and guidelines needing to be updated on an almost daily basis. Then of course there have been the supply issues – PPE, hand sanitisers, drugs……

And, for many, there were some uniquely challenging ethical situations.

As health professionals we remember our colleagues within NZ who have faced some particularly trying circumstances and also our overseas colleagues who have died in their line of duty caring for others

Whilst we have so far come through this pandemic relatively unscathed compared to other parts of the world, it has without doubt had its impact on NZ and New Zealanders. For some families they have experienced the worst outcome of having lost a family member to this virus. Now we are dealing with the crippling economic effects. We are by no means through this and vulnerability remains. There is ongoing work for many.

As a result, the work of the sub-committee has currently come to a standstill. This has been unavoidable as all committee members have had to deal with significantly increased workloads in recent months. There quite simply has not been the space to deal with anything outside of our immediate work, which includes working in various modes of road and air transport with full PPE, limited space, close proximity to patients and dramatically different air flows in the transport vehicles without the safety mechanism of negatively pressurised isolation rooms.

In addition COASTN is experiencing financial constraints that may not allow our work to continue; or at best will severely limit what we have planned and hoped for. To try and save money, the sub-committee has made the decision to only meet once a year face-to-face with all other meetings being via zoom or teleconference. As there are three members on the sub-committee who are also on the National COASTN committee, we have cut our face-to-face meeting time down so that both committee meetings are held on the same day – versus separate days and therefore increased accommodation costs.

Despite the financial constraints I do hope that our work on the Passport can get re-started. However to achieve this the sub-committee members also need space in their working lives *and* in their private lives which is where a large component of this voluntary work is completed.

In the meantime, please have patience as we plan to continue this work. The sub-committee and National committee welcomes any suggestions/ideas as to how we can financially push ahead with a Passport that is technologically up-to-date and progressive with today's world and meets the needs of NZ's professional flight nurses.

Most importantly for now, stay safe in your personal and work lives. Stay well and remember to look out for each other.

Best wishes

Di Fuller

COASTN Sub-committee chair.

FLIGHT MIDWIFE REFLECTION

Christine Edgar—Waikato DHB.

Flight Midwife Reflection

There was a phone call on the Co-Ordinator's phone at 1455 hrs from an LMC (Lead Maternity Carer - independent midwife) who works in a remote rural hospital which is under the umbrella of our Tertiary Base Hospital. An antenatal woman (Jane*) had come in – she was currently at 28 weeks gestation, a G3 P2 (third pregnancy with two live babies) with two previous normal births. Jane had a higher BMI of 42.9 and had pre-eclampsia (PET) with her first baby and a post-partum haemorrhage (PPH) of 3L following the birth. With her second baby she had an induction for reduced fetal movements and no PET or PPH that time. Her relationship was with the same partner as the previous two pregnancies - a new partner is a risk factor for pre-eclampsia - so this was important to note. Jane had come to this antenatal appointment with her LMC as she thought that she was developing carpal tunnel in her left wrist (she already had it in her right wrist).

As part of the appointment the LMC had taken Jane's blood pressure and found that it was 200/110, and there was proteinuria ++, generalized oedema and clonus 1+, with no visual symptoms – all classic signs of pre-eclampsia. A short time later the LMC had rechecked Jane's blood pressure and it was 205/115, at which point she had rung me as the Delivery Suite Co-Ordinator at the Tertiary Base Hospital. I took the details down from the phone call and promised to seek medical advice and then to ring the LMC back. When that phone call finished, I rang the Obstetric SMO and spoke to her. She advised that Jane should be given either IV Labetalol or oral Nifedipine, according to the DHB "Hypertensive Disorders during Pregnancy, Management of" protocol. Jane obviously needed an urgent transfer up to our unit, so whilst I was on the phone to the SMO, I asked her if she would be happy if I organised a helicopter retrieval to bring Jane to our Tertiary Base Hospital (this permission must come from the Obstetric SMO). She agreed that Jane needed to come to us ASAP, and said that if her systolic blood pressure didn't come below 180mmHg then she agreed that Jane needed to be retrieved by helicopter.

I rang the LMC back and relayed the above information about the drugs that should be given. I also needed to inform the LMC where the appropriate protocol could be found, so that they would have the protocol to follow and give the correct drugs and dosage. At this point the LMC transferred Jane around to the Resus room in ED in the rural hospital, and a locum GP and the nurses in the ED helped the LMC to manage this severe hypertension.

It was time for me to handover to the PM staff and when I had finished this process, I rang the LMC back at 1528hrs. There was no oral Nifedipine in the rural hospital, so Jane had been given IV Labetalol 20mg at 1527hrs, and her BP had been 235/108 prior to the antihypertensive medication. Her blood test results for pre-eclampsia had come back and they were all within the normal range. As I was talking to the LMC another blood pressure was taken, and it was 235/107, so the drugs were not yet taking effect. I spoke to the Obstetric Registrar who had just walked into the Delivery Suite office and appraised her of the situation. She asked for Oral Nifedipine 10mg to be given, but as this wasn't available, the Registrar asked for IV Hydralazine 5mg to be given over two minutes as a slow push, and to be given every 15 minutes to a maximum of 30mg. We finished the phone call and I paged the helicopter pilot. It was now around 40 minutes from the first phone call and Jane's blood pressure was still not improving in spite of the medication that she had been given. I felt justified in organizing the helicopter retrieval (as opposed to an ambulance transfer) as Jane's systolic BP was still well over 180mmHg. The helicopter pilot rang back and I explained the situation to him. The helicopter was available and there were two paramedics available also – would both of them be required? I answered that this was a severely hypertensive woman who was a high risk factor for a CVA (cerebro vascular accident – stroke) or an eclamptic seizure, so two paramedics would be great. I told the pilot that I would ring him back shortly when I had a flight midwife sorted out and it was definite that we were going.

It was now 1558 hours and I rang the LMC up. Jane's latest BP's had been 222/105 and 214/117. The first dose of IV Hydralazine 5mg had been given at 1545. I spoke to the Obstetric Registrar at 1603 hours and she asked me to ask the staff at the rural hospital to commence a Labetalol infusion as per the DHB "Hypertensive Disorders during Pregnancy, Management of" protocol, and to continue to give the Hydralazine 5mg bolus every 15 minutes until Jane's BP had settled down to 170/100mmHg.

Our Tertiary Base Hospital does not have an on-call roster for the Midwifery Flight team and this was an urgent retrieval for a severely pre-eclamptic woman. I lead the Midwifery Flight team, and I had just finished my shift and was free to go so instead of trying to organize another Flight team member, I decided to go myself as this would be quicker. I updated the PM Co-Ordinator with the retrieval situation and asked her to take any further calls from the LMC and I then switched hats to become the Flight midwife – figuratively speaking, not literally! I rang the helicopter pilot and told him that I would be over in 20 minutes, pulled out the retrieval pack, changed into a Flight Midwife's uniform and switched my head around into the different role and this particular scenario! I checked that there was oral Nifedipine in the retrieval pack then headed over to the helipad with the retrieval pack and two IVACs. Due to the serious nature of Jane's pre-eclampsia, the Obstetric Registrar had mentioned that it might be wise to commence a Magnesium Sulphate infusion before heading back to Waikato, to prevent an eclamptic fit on the helicopter. At 1640hrs we left the DHB helipad and 35 minutes later we landed on the helipad at the remote rural hospital. On the way there I had been thinking about the situation and going over possible scenarios in my head and working out my plan.

On arrival at the Resus unit in this hospital, I met Jane and her mother – her partner came back to the hospital just before we left. I was relieved to see that although Jane's systolic BP had consistently been >200mmHg, it had just gone down to 179/81. An IV Labetalol infusion was in progress, and the IV Hydralazine boluses had been given, up to the recommended total of 30mg. The CTG was reassuring so the baby appeared to be happy at this stage. The LMC, two resus nurses and the locum GP were all working together in the Resus area. One of the paramedics had come inside with me, and now he was busy attaching the Zoll monitor to Jane. He also changed the Labetalol infusion over from their machine to our IVAC and transferred Jane from the ED plinth to the Stryker stretcher. Meantime I took a look at Jane's ED notes, at the EWS (early warning score) chart, and took a handover from the GP, LMC and one of the resus nurses. Jane stated that she had a headache (not surprising with such a high BP!) and so I asked for her to be given oral Paracetamol 1g at this point. When I was happy that we had the correct information and Jane was stable enough for the flight, I made a brief telephone call to the Obstetric Registrar back at the Tertiary Base Hospital. I summarized the situation, told her that as Jane's BP was stabilizing I thought that we should fly now rather than spending time setting up a Magnesium Sulphate infusion. She agreed with my assessment, and then I asked her if I could give Jane short acting oral Nifedipine on the helicopter if her BP started to rise again and she also agreed with this plan. If Jane's systolic BP remained under 180mmHg, the Labetalol infusion was to continue, but if it rose above 180mmHg I was also to commence the Nifedipine regime which was short acting oral Nifedipine 10mg every 15 minutes to a maximum of 40mg. I was happy with this, and explained this plan to Jane. Jane's whanau said goodbye to her, and we left them behind - which wasn't easy for Jane.

Jane's BP had been taken every five minutes in the resus unit and I resolved to take it every 15 minutes on the helicopter (the Registrar was happy with this). I wanted Jane to try to relax and rest on the flight as far as possible – this was her first ever helicopter ride. The last BP that had been taken in the resus unit was 162/96 so at last we were winning and her BP was steadily dropping. The first set of observations prior to takeoff in the helicopter showed a BP 146/84, MAP 105, pulse 82 and oxygen saturations of 97%. I realized that all of the antihypertensive drugs were now 'kicking in' and was concerned that she might now become hypotensive and there could be resulting fetal distress. Due to this decreasing BP, I decided to halve the Labetalol infusion as per the protocol. It had been commenced at 20 mg/hour, and increased to 40 mg/hour when Jane's BP had not responded. I now dropped it back to 20 mg/hour which proved to be a good decision. Jane's BP for the remainder of the flight hovered between 136/82 and 153/91 mmHg and her other observations were very stable. We had an uneventful flight for which I was very thankful.

We arrived back at the Tertiary Base Hospital at 1835 hours and I handed care over to one of the WAU (Women's Assessment Unit) midwives and said goodbye to Jane. She was given her first steroid soon after arrival, and commenced on oral Nifedipine. A short time later Jane was commenced on a Magnesium Sulphate infusion and later in the evening an arterial line was inserted as Jane's BP had risen again. There were concerns that Jane's baby might require early delivery by an emergency Caesarean Section, but this failed to eventuate that day. However, nine days after admission (at 29+3 wks gestation) Jane's CTG became non-reassuring with absent variability and deep decelerations. She consented to an emergency Caesarean section where a little baby boy was delivered, weighing 1396g and he went straight to NICU (Neonatal Intensive Care Unit).

Jane was treated postnatally for her PET and remained on antihypertensive medication which was gradually decreased. I saw her in our DS HDU (Delivery Suite High Dependency Unit) on several occasions and then nearly two weeks later I went up to NICU to meet her son. It was lovely to be able to follow up with Jane and her baby and to see the improvement in their health, as I felt a particular rapport with Jane after being the flight midwife for her retrieval.

* *Jane is a pseudonym*

Pared back to 1923 words!

Part of the Waikato Midwifery flight team.

WHEN THE UNEXPECTED HAPPENS

EMERGENCY LANDING

Rodger Hyde—Dunedin ICU Flight Nurse

It was a beautiful winter's day in June, I and a transport support nurse had picked up a patient from Christchurch Hospital and were taking him back to Dunedin Hospital. The patient was an elderly gentleman who had a stroke and was moved to Christchurch a couple days earlier, for clot retrieval. We took off from Christchurch airport around midday on a Friday afternoon, on what was expected to be a straight forward flight to Dunedin, in a Piper Chieftain. We encountered some clear air turbulence between Christchurch and Timaru, but not concerning. The patient was comfortable, dozing on and off. Off Oamaru the pilot had confirmed that an ambulance would be waiting for us at Dunedin airport.

Bang! Just south of Oamaru the left engine exploded, there were sparks, oil could be seen flowing over the outside of the back of the engine casing, and there was a huge piece of engine casing standing vertical between the propeller and the back of the wing. I was at the back of the aircraft, facing forward, seeing everything. For a few seconds there was silence as the two pilots, myself, and my colleague tried to process what had just happened. Straight away the pilots were busy dealing with the emergency and preparing for an emergency landing. We were probably between 4,000 to 6,000 feet above water, turned back towards Oamaru township and the airfield north. During the emergency descent and from the time of the engine failure I was very concerned about fire, especially with seeing the oil coming from the exploded engine and covering the remaining casing. Fortunately, at no time during the entire emergency was there any fire, thank goodness. Throughout all this, the patient remained calm, and in fact did not seem aware of what was happening. There was not a lot of discussion with the pilots – they were busy. I reviewed exits - the main door next to my seat, and a window / wing exit on the right side of the aircraft, next to the patient. There was also a window exit on the left of the aircraft next to a pilot. A fire extinguisher was behind my seat. From the initial explosion to landing was about 8 to 10 minutes. The aircraft flew surprising well on just the right engine.

Brace Brace! Just before the runway, this is what we then heard from one of the pilots. These words came unexpectedly, there was then a thought that we may have a very hard landing, we were coming in quite fast as the wind was behind us. I checked that my colleague and the patient were secure. The landing was surprisingly smooth, but seemed fast.

After coming to a stop, for some reason we could not turn to get off the runway or back to the airfield building. I told the patient that we had landed at Oamaru not Dunedin, due to an engine problem, he was very calm and not concerned at all. One of the pilots told us to remain in the aircraft, as it was warmer, also the patient was not very mobile. We were then towed to an airfield building where an ambulance was waiting to take us to Oamaru Hospital, where we then transferred to another ambulance for the road trip to Dunedin Hospital.

This experience has highlighted to me how quickly a problem can happen when we transport patients by air. It is not something we think will ever happen to us, but it can and does, fortunately not often. This has also reinforced to me how important it is to be aware of where the emergency exits are and how to use them, also where fire extinguishers and life vests are. Our pilots were fantastic, calm, and seemed to know what to do straight away, and were professional throughout. We often joke that they look about 12 years old, despite this they got us onto the ground safely, after what could have been a lot more traumatic an experience.

Rodger Hyde

RN ICU and Flight Nurse

Dunedin Hospital

TRANSPORT OF ACUTE MENTAL HEALTH PATIENTS.

LARA MILLAR—COASTN MEMBER. NZCCCN

In 2017 I wrote an assignment on how I would as part of an aeromedical transport team transfer a 22 year old acute newly diagnosed presentation of schizophrenia . I have shared my assignment in order to share knowledge and to encourage discussion and debate as to best practice with transport of this patient group.

Due to there being limited international research on the air transfer of this patient group (Wheeler, Wong and L'Heureux, 2009), I have utilised some of the Australian experience and research to assist in my care guidelines for transferring the acute schizophrenic patient. It is in the Australian aeromedical environment that there is a growth in the publication of experience and guidelines for transporting mental health patients' from remote areas for specialist care (Le Cong & Humble, 2015).

Successful transfer is based on anticipation and prevention of potential complications and hazards to both the patient and the transport team (Martin, 2012). Under the ethos of non- maleficence the mental health patient needs considerable pre- flight planning and trouble- shooting for a number of potential scenarios' that concern both patient rights and the implementation of the compulsory assessment and care in New Zealand which is high compared to international data (Mental Health Foundation, 2016).

Given that patients' is in a regional hospital may have limited care resources, including staff skill and experience with the care of acute schizophrenia, understanding the types of risk that the patient's condition poses during transport and preparing and aligning resources to meet these potential risks is an important step in patient preparation (Fan, MacDonald, Adhikari, Scales, Wax et al., 2006). Having a calm and co-operative patient is the ultimate goal in this patient group (Le Cong, 2017). This involves being open and informative to the patient and allowing time to discuss their transfer and how it will occur.

Discussion with the referral staff of pre- flight oral medication adherence is a good indicator as to the compliance of the patient and regular oral medications need to be given prior to the flight. Psychotic symptoms in patients with schizophrenia do not subside until days or weeks into treatment therefore the goal of acute care is to control and manage behavioural disturbances (Perreira, Fleischhacker and Allan, 2007).

Current trends advocate for the patient to be transported without the requirement of intubation if possible. This often comes down to the flight teams assessment and experience with this patient group. Much of the research that I have read and quoted emphasizes the need to have the consent process documented and full explanation, disclosure and discussion with the patient and family/ whanau as to the transport rationale and process. This demonstrates both respect and empathy with all patient interactions (Brown et al., 2012).

At the end of the day, despite clear legal outlines regarding restraint use with this patient group, the Civil Aviation Authority internationally has the right to instigate the restraint of any passenger that is a potential safety threat to crew and the aeroplane environment. Despite these patients not being seen as critical transfers their needs and care may take longer to plan and instigate than a critical care patient due to their potential for unstable behaviour and the potential requirements at the receiving institution based on their transfer condition.

Care of this patient group can always be a challenge outside of the psychiatric environment. With the increased demand on Mental Health Services within the New Zealand environment, movement of this patient group could potentially become more frequent therefore planning and discussion around their transport needs better prepares the flight team when this situation arises. Research of the transportation of this patient group needs to continue to engage best practice with potential research on the patient experience perspective on aeromedical transfer.

Using Blumen's et al. (2006, p.43), four step framework of sequential assessment and decision making in transport organisation I will rationalise my choices for an effective transfer of this patient. 1. Patient evaluation

The information given of this patient;

· Male, 22 years old

· Newly diagnosis of acute presentation of schizophrenia

· Symptomatic violent and agitated behaviour

· No past medical history of relevance is given but we do know that he has required sedation overnight to minimise his violent behaviour.

Communication with the referring regional hospital prior to the planning of transfer is going to provide a key indication on not only if the patient is safe to fly in his current state but the pre-flight communication will add valued information as to his current mental state as well as his physical state. It is vital that the team receive and document a handover as to the patient's mental state, process of thinking, triggers of agitation, de – escalation techniques utilised and drugs that have been used and their effect.

Communication with the referring hospital must include having the patient nil by mouth for six hours prior to the flight to ensure airway safety for potential interventions required. The flight physician will need to assess the patient's airway for intubation purposes prior to flight.

Information pertinent to his transport and on-going care includes if his illness has been in combination with drug or alcohol abuse. This information may have an impact on medication that he can have during his transfer. Co morbid substance abuse is common amongst patients' with primary psychotic disorders (Brown, Stoklosa and Fredenreich, 2012).

Nicotine use and withdrawal is an important factor to consider as this will also cause agitated behaviour so the use of nicotine patches can alleviate this(Balaratnasingam, 2014). Any known drug allergies or adverse reactions to medication administered since admission also needs to be communicated and documented.

The transport team need to review assessment of other potential causes of agitation. Such as, has the patient any pain from unidentified injuries and has his blood glucose been checked during his admission process. Exploration of potential phobia of flying also needs to be assessed by the flight team as this may exacerbate psychosis during the flight. Communication with the patient is important as consent and explanation as to the transfer needs to be sought and documented clearly or the rationale as to why there is no written or verbal consent completed. Once the flight team arrives, this process needs to be repeated as well as review of documentation which includes a record of paperwork that clarifies the patient's status under the Mental Health Act.

Discussion with the pilot as to the transfer will also take time which will be covered under the topic of risk management.

Research in Australia and review of providing transport for this patient group has lead Dr Le Cong (2017) to devise a questionnaire to assist in the potential risk that a psychiatric patient may pose during aeromedical transfer. This questionnaire was devised due to the lack of a validated psychiatric aeromedical risk assessment tool.

The following questions if scored positive for 2 or more indicate that the patient is a HIGH risk transfer indicating the need for a full medical team to transfer which includes capabilities for sedation, intubation and mechanical ventilation.

Questions:

· Prior history of violence?

· Intoxicated state currently?

· Fear of flying?

· Requiring sedative medication in last 24hrs?

As this patient has two positive responses in this questionnaire then that deems him a High risk patient so consideration of general anaesthesia and tracheal tube intubation will need to be considered prior to flight.

2. Medical care that may be required by the patient

My transport team will consist of;

· Flight Doctor experienced in flight intubation, sedation and airway management with a preference for some experience with transferring psychiatric patients'

· A senior flight nurse with both airway and ventilation competencies, as well as preferable psychiatric transfer experience.

· Consideration of a family or whanau member as a support person for the patient if the patient requests this and the family members' interaction with the medical team has been deemed positive. This can be discussed by phone confidentially prior to the transport team's arrival so that there is a clear plan in place that is communicated effectively with the patient and family/ whanau. This is an important aspect to establishing a positive initial therapeutic relationship with the patient.

For some involuntary psychiatric patients' the presence of police escort may be appropriate if transferring to a forensic facility, however I believe that my patient given the right sedation may be safe to transfer without the need of police escort. In some instances it may also be useful to involve a psychiatric nurse as they will be familiar with de-escalation techniques utilised when communicating the transport plan to the patient (Bowers, 2013).

Equipment and monitoring requirements;

Due to the potential of intubation and anaesthetic level sedation the following equipment will be required on the transport;

· Intubation equipment and orogastric tube or NG tube with collection catheter

· Suctioning

· Portable ventilator

· Portable monitor with NIBP, SP02, cardiac and EtC02 monitoring. Non- invasive capnography monitoring essential in judging if the patient is over sedated and requires intubation

· Drugs for resuscitation, intubation and sedation; ie; ketamine, propofol, rocuronium or suxamethonium, midazolam, inotropes available if required.

· Syringe drivers and infusion sets for continuous sedative administration and potential fluid bolusing

· Use of a validated sedation monitoring tool such as the Richmond agitation – sedation scale (RASS): https://www.researchgate.net/figure/51078510_fig1_Figure-1- Richmond-Agitation-Sedation-Scale-RASS

· Stretcher and mechanical restraints for wrists and ankles. Le Cong (2017) states that mechanical restraint is essential, as it allows time for the flight crew to administer sedation safely in the event of unpredicted agitation during flight.

· Blankets to maintain patient warmth during the transport

· Noise protection in the form of earplugs is also essential as often the noise from the aeroplane may exacerbate agitation (Le Cong, 2017).

3. Time critical elements of the transport

It is essential that time is taken on pre-flight preparation and assessment of the patient. This type of transfer cannot be rushed if effective risk management strategies are to be identified and planned. I would dedicate a whole day to achieving this transfer to allow time for pre-assessment and discussion with the referring team, patient and family/whanau. This would also allow time to develop a therapeutic relationship with the patient & family/ whanau and a time to observe the patient behaviour and reactions within the health setting which will assist in mitigating potential behavioural risks. Time for the patient to voice concerns and ask questions regarding their transport and transfer demonstrates respect and empathy building a positive baseline relationship with the patient (Bowers, 2013).

4. Logistics of patient transport

Due to this patient being 500km away from a psychiatric unit I have decided that the use of fixed wing in accordance with best practice of transports greater than 240 km (Sethi and Subramanian, 2014). Fixed wing also provides more room for the medical crew, less noise and vibration and is less weather dependent that rotor wing (Sethi and Subramanian, 2014).

The patient will therefore require transfer from aircraft to ambulance at both ends of the transfer. The coordination of the destination hospital is also essential as planning for possible changes will need to be communicated such as admission to an area such as Emergency Department with resuscitation equipment in the case of extubation. Alternatively the transfer to an ICU if intubation complications occurred such as aspiration or lightening from sedation does not lift the patient's Glascow Coma Scale to a safe level for extubation. These discussions with the receiving centre need to be done early prior to transfer with regular updating of changes during the transport enabling effective handover and completion of the transport. If transferring directly to a psychiatric setting sedation must be within the acceptable scope of practice for the mental health team to continue and take over care.

Issues of Physical and Chemical Restraint with the Transport of a Patient with Acute Schizophrenia.

I have assumed that this patient has been sectioned under the New Zealand Mental Health (Compulsory Assessment and Treatment) Act (Ministry of Health,1992) which needs to be clarified by the transport team if we are to legally transfer him for further in – patient psychiatric care. Any patient restraint in New Zealand is guided by the New Zealand Standard 8134.2.2008 – Health and Disability Services (Restraint minimization and Safe Practice) Standard NZ Ministry of health, 2011). NZ Standard 8134.2.2008 (2011) defines restraint as " the use of any intervention, by a service provider that limits a patient's/ consumer's normal freedom of movement" (p. 30). Research on patient perceptions and reactions to being under mental health care can include overwhelming fear for their safety, powerlessness, vulnerability, traumatisation and with physical restraint, dehumanisation (Strout, 2010).

A review of patients' experience of seclusion and restraint (Mayers, Keet, Winkler and Fisher, 2010) found that the communication between the service providers and the individual was often not clear or adequate. Patients' in this environment often felt that their human rights were being infringed upon. Sedation in this review was seen as less distressing as opposed to physical restraint. In the scenario, it is important to understand that the patient's experience with the transport team plays a role in shaping his future attitude towards psychiatric care (Perreira, Fleischacker and Allan, 2017). Both chemical and physical restrain will be necessary to keep the patient, crew and environment safe during transport. Primary psychiatric disorders and a history of violence are positive predictors of violence (Soomaroo, Mills and Ross, 2014). As part of the Mental Health Act (1992) Section 110 A is used in the situation of a patient requiring administration of sedation in order to transfer the patient to further involuntary care.

This reinforces the need for medical practitioner presence on the flight in order to oversee drug administration. Due to the fact that the patient has already received sedation for violent behaviour part of the mission planning will be that the flight retrieval Doctor discusses with the Psychiatrist prior to flight, sedation and medication options. This will be documented prior to flight.

To ensure every ones safety sedation realistically needs to occur prior to retrieval. At this stage it is also essential to encourage the patient to empty his bladder/ bowel as this will reduce flight stressors (Le Cong, 2017). Initial oral medication is preferred with the instigation of intravenous medication directly before and during the flight. To ensure that there is an option to increase sedation at any stage of the transport the patient should have two patent and flushed intravenous lines with extension sets and 3 way taps available, preferably in the forearms to prevent kinking and drug non administration with arm bending. This allows easy access during take-off and landing when crew are strapped into seats (Le Cong, 2017).

Oral olanzapine is utilised as an oral antipsychotic in combination with a benzodiazepine such as Diazepam in the acute phase of psychosis with other options such as Haloperidol and Droperidol also available for use. Combination of antipsychotics and benzodiazepines are effective with reducing agitation (Brown, Stoklosa and Freudenreich, 2012) but also carry a risk of respiratory depression therefore Midazolam is not a first choice and should only be administered with the presence of antidote Flumazenil (Parker, 2015).

Prior to and during the transfer the patient will remain sedated by the use of a Ketamine infusion. This drug has been found to be a safe sedative and effective with the psychotic patient (Le Cong, 2017, Pritchard and Le Cong, 2014, Le Cong, Gunther, Hunter and Schuller, 2012).

The use of Ketamine for sedation maintains patient sedation, airway reflexes and cardiopulmonary stability (Le Cong and Humble, 2015). In order to successfully transfer the patient with minimal sedation administration the use of the RASS tool will assist in setting the target of sedation required to maintain patient, crew and environment safety as well as a tool to assist in determining need for drug titration or bolus during the transfer. My goal would be to maintain a RASS of-1 to -3 during the transfer and the use of physical restraint having previously been disclosed to the patient in a way that explains the safety element. Mechanical restraint should only be instigated once the patient is on the stretcher for transport and at a level of sedation of at least -1 RASS.

Coburn and Myek (2009) state that the use of physical restraint should only be utilised when previous attempts to establish rapport and trust have failed with the patient remaining agitated and non-cooperative. However due to the aeromedical environment mechanical restraint is necessary despite compliance for environmental safety. Boluses of ketamine will be utilised for high stimulation activities such as transferring between transport vehicles, take-off and landing to ensure optimal safety.

Potential Risks and Risk Minimization for Crew and Patient undergoing Psychiatric Transport.

Patient transfer occurs when the benefit of the patient exceeds the risk of transfer (Warren, Fromm, Orr, Rotello and Horst, 2004). Psychiatric patients bring their own differential level of risk due to the unpredictable nature of psychiatric illness Pre- flight discussion and emergency scenario planning is essential for all members of the flight team. The Pilot in Command (PIC) has the ultimate say on whether the flight goes ahead but all team members need to discuss and make plans for events that can potentially occur in the air such as;

· Patient nausea and vomiting (pre- flight antiemetic/ patient kept NBM prior). Noise, vibration and motion sickness are common ailments of patient transportation (Martin, 2003) and these symptoms
can be exacerbated in the acutely psychotic patient so the administration of antiemetics and the use of ear plugs can assist in alleviating this anxiety.

· Patient agitation pre- flight despite sedation – use last resort plan of intubation prior to leaving referral setting to maximise patient safety

· Over sedation – (intubation by trained medical personnel preferably decision made and intubation undertaken in referral centre pre - flight)

· Weather issues – planned safe egress options for flight crew and patient or flight delayed

· Patient agitated and under sedated (patient reassurance and reorientation, IV bolus of sedatives/ antipsychotics)

Situational awareness includes the removal of crew personnel items that can be used as weapons in the confined space of a plane. For example, stethoscopes and lanyards hanging from the neck can become a danger. Patient risks include self -harm, potential for hypoxia, aspiration and hypotension due to chemical restraint and sedation. Restraining patients' in the prone position compromises the airway and increase the risk of aspiration (Coburn and Myek, 2009). Chemical restraint can cause dehydration and hypothermia with a risk of rhabdomylosis with reduced position change

(Coburn and Myek, 2009). With protracted struggling against physical restraints a patient can become hyperthermic and increase the risk of metabolic acidosis with protracted muscle tone leading to an increase of lactic acid (Coburn and Myek, 2009). With the risk of aspiration pneumonia, infections and cardio- respiratory depression the patient could potentially require ICU level care if these risks are not mitigated (Balaratriasingam, 2014). Therefore the patient would be best restrained in a position of supine with the head elevated to 45% (Royal Flying Doctors Service, 2017).

The pilot may still refuse to transport the patient if he assesses that the risk remains high for an adverse event despite mitigating strategies.

In conclusion the transfer of a psychiatric patient takes time, planning and resources in order to carry out the transport safely and effectively. The transfer of mental health patients' poses an ethical dilemma of balancing the right's and safety and dignity of the patient (NZ Restraint Minimization Standard, Standards New Zealand, 2008) with the safety of the crew and aeromedical environment.

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Auckland - NZAAS

NEW ZEALAND AIR AMBULANCE SERVICE | Saving Lives IN THE South Pacific

Hullo from NZAAS in Auckland,

Our teams have been keeping fairly busy and level four lockdown seems like such a long time ago although as I say that I am well aware that the psychosocial effects of lockdown, border restrictions and a struggling economy are ongoing for many of our population and will be for months if not years to come. It has however been nice to get back to a sense of normalcy and enjoy meeting with friends, colleagues and wider family groups post lockdown and I don't think I am alone in wishing that city traffic was back to level four lockdown levels!

The NZAAS service certainly noticed a decrease in overall transports throughout NZ during the early months of lockdowns, this is likely attributed to less overall presentations at emergency departments, less trauma due to less road traffic and no sporting fixtures, no extreme sports. As well as less infectious type illnesses due to increased awareness of handwashing, personal distancing, more uptake of the annual 'flu vaccination and also the mild weather that we experienced during lockdown. Unfortunately there were also incidences of people being reluctant to present to emergency departments and doctors and who, by the time they did present were extremely unwell.

Like most we are interested to see what the next stage will be and how or when borders will start to reopen.

Stay safe and warm,

Angela and The team at NZAAS and Skyline aviation.

Auckland Airport

WHANGANUI
DISTRICT HEALTH BOARD
Te Poari Hauora o Whanganui

Regional Round Up – Whanganui

Hello from the River city, hopefully you are all back into the swing of the unpredictable season, known as winter……..

We have been very fortunate to have been well supported recently with the gifting of a new Zoll monitor for the flight team, funded by the Wanganui Air Ambulance Trust, an organisation that supports the Flight Team with fundraising from the community, they have also recently supplied the hanger with 2 new lifters. We are very grateful to them as a team.

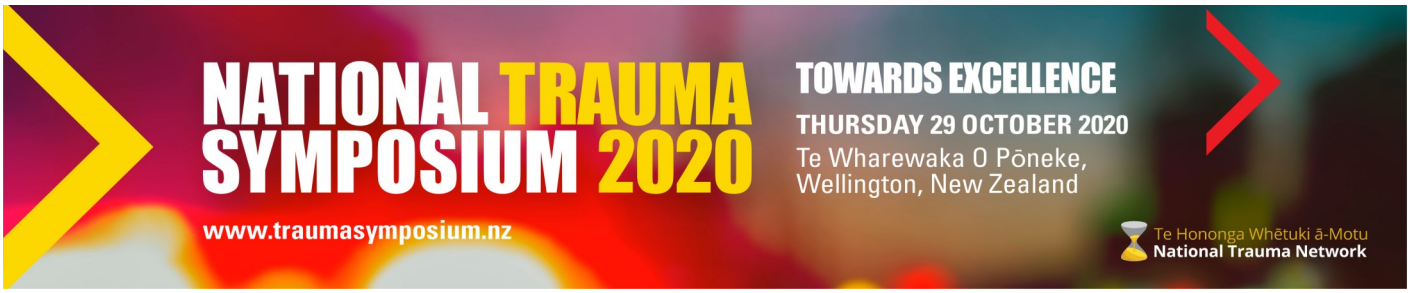
We recently had an afternoon tea, and the Trust was gifted a donation from a local organisation called GOME (Grumpy Old Men Enterprises), a group of retired locals who dismantle electronics and mechanics for scrap, and give the proceeds back to the community.

The below photo is from our recent gathering.

Stay safe everyone.

UPCOMING CONFERENCE

October 2020



32nd ASA+COASTN Conference Rescheduled

NEW DATE

Dear Colleagues,

Our ASA+COASTN 2020 Organising Committee and Conference Managers have been closely monitoring the constantly evolving situation in relation to COVID-19. Our primary concern is for the safety, health and wellbeing of our participants, many who are currently working tirelessly on the front line in our health systems around the world. In the current climate, it would not be feasible to proceed as we had planned, therefore we have made the decision to reschedule this year's conference to the same time next year.

The ASA+COASTN Conference will now be held from **Monday 30 August – Wednesday 1 September 2021** at the Museum of New Zealand Te Papa Tongarewa, Wellington, New Zealand.

Many of you will be disappointed, as are we. The conference organising committee has put together a wonderful program and we very much look forward to sharing this with you in early 2021.

We thank you for your understanding during this challenging time, and we hope that you will consider being a part of our rescheduled conference in 2021.

David Waters
President | Aeromedical Society of Australasia

Critical Care in the Air

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