Restraint Use in the Surgical ICU:  
How to balance out competing safety needs

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In nursing school I was taught that restraining a patient violates his or her autonomy. I am aware that research studies from long term care and acute care settings point to the dangers of restraint use. Far from protecting patients, restraints can often injure, and in some rare cases lead to the death of patients. I know that there are many ways to prevent falls: identifying patients at risk, placing items in reach, frequent visual checks, reorientation strategies, non-skid footwear, and other common sense and innovative solutions. No clinical practitioner can really be ignorant of the issues with restraints given the time and energy spent on education, documentation, policy changes and regulatory issues over the last two decades.

Given all this you would think I would never turn to restraints to help with patient safety, but the reality is I do. I work in an environment of very ill patients who often have multiple invasive devices that are not only imperative to sustaining life, but can do real and permanent harm if removed by the patient. As many as 2 out of 3 patients in the ICU will be delirious at some point, which can make it impossible for them adequately weigh the consequences of their actions. All a confused, delirious patient in an ICU knows is that there is a tube sticking down his throat and he would like it out, now. I can explain the purpose of the tube, that we are breathing for him with it, that his airway is swollen and if he pulls it out we may not be sure we can get it back in and it could be a life threatening emergency, but my patient often won’t remember when I leave the room and want to pull it out, because who wants a tube stuck down their throat?

I met T. R. a little over a week after she had been admitted to the SICU. She was a 62 year old woman who had been diagnosed with a low grade astrocytoma four years ago. She had undergone chemotherapy, radiation and a brain surgery to come back to the vibrant life she had lived before the initial diagnosis. T.R. came to us after being found down at the bottom of the stairs in her house. It was unclear how she had fallen or how long she had been down for. She suffered multiple rib fractures, a right pneumothorax, and a right arm fracture. She was also confused when she first presented to the emergency department. Over the course of a week in the SICU she had gone to the OR for her arm fracture, was weaned off the ventilator and extubated, and was reintubated for decreased mental status and inability to clear secretions. An MRI and EEG had not revealed any clear etiology for her continued depressed neurological function and the
decision was made to move quickly to a tracheotomy to facilitate her rehabilitation since she was in need of ongoing respiratory support. Within the first 24 hours of receiving the tracheotomy, T.R. had been weaned off the ventilator to trach mask. She was also being fed via a small bore feeding tube through her nares.

When I first met T.R. it was at the beginning of a 12 hour night shift. She had previously had a restraint order for upper extremity soft restraints. Although she was somnolent, weak and unable to follow simple commands consistently, she attempted to grab both the endotracheal tube and feeding tube and pull it out per documentation in the previous 48 hours. In addition she had a PICC line and an A-line in place, which is always a risk for patient device removal. While taking report from the day nurse, we talked about her ongoing issues; the two primary ones were her continued poor neurological status of an unclear etiology and continued respiratory issues. I did a neurological exam with the day nurse, which is our standard for neurological compromised patients in the ICU. She was making short eye contact and not following any simple commands.

I was fortunate that I had no other patient assigned to me that night and was able to work closely with T.R. While doing my respiratory assessment and pulmonary toilet I removed her soft upper extremity restraints and did my skin assessment and range of motion as required at least every two hours for the restraint policy. At that time she did not attempt to stop move from tracheal suctioning or other nursing care, which in my experience tends to trigger a strong urge to grab the nurse or suction even in compromised patients. She also did not attempt to interrupt my mouth care that we do in the ICU to prevent ventilator assisted pneumonias, which over the years I have found to be one of the most reliable ways to elicit a neurological reaction. T.R. had continued increased work of breathing, respiratory rate, and now slightly elevated heart rate compared to that morning. In collaboration with the SICU fellow, we decided to place her back on the ventilator to rest her.

After calling respiratory to the room and putting the pulmonary care plan back in motion, I turned my attention back to T.R. neurological exam and whether or not to the soft restraints would need to be reapplied. When I think about restraint use in the ICU I need to consider the potential risk of unplanned device removal. A patient with a pulmonary artery catheter or an endotracheal tube for airway patency has a high risk for injury. It is harder to quantify the risk for some other therapies. At first a peripheral IV removal seems like a minor problem, but what if the patient is on multiple antibiotics for sepsis or heparin to maintain patency of a new graft? If the patient has poor venous access, hours can be loss trying to obtain adequate IV access, possibly requiring central access which always comes with risks. A feeding tube seems like a minor thing to remove, but I have had patients with feeding tubes that were placed under fluoroscopy for patients in desperate need of nutrition to heal their wounds and prevent further breakdown. A trauma patient can have an unstable neck injury requiring a hard collar, but due to traumatic brain injury does not have the short term memory to understand if she takes the collar off she could suffer permanent paralysis.
I, along with my colleagues in the SICU, use various factors to determine whether a patient needs restraints for device safety in the ICU. Factors that I have discussed during report include the following:

- Whether the patient has the strength or alertness to pull or grab at devices.
- Are neurological issues that put them at higher risk, such as memory impairments that impede verbal reminders?
- Observation of actual patient action and inferred intent. (For example: Are they trying to grab their ETT or scratch their face?)
- Assessment of the individual risk for that particular patient for each specific device. Of particular concern for us are patients that we know need an artificial airway and were difficult to intubate such as a cervical spinal fracture or a tracheal reconstruction.
- The use and response to pharmacological agents. Are there medications causing confusion? Would medications decrease confusion and help organize thinking?
- Assessment of possible harm of restraints. Besides the normal risk of restraints a patient may have problems with impaired tissue perfusion to an area, and device there, or a fracture that would contraindicate restraint use.

I considered all these things for T.R. and took into consideration the experience that previous nurses caring for her had documented under the problem: Patient at risk in non-behavioral restraints. Being aware that a patient’s need for restraints can change over time, even short periods in the ICU setting, I decided to remove the soft restraints for T.R. and asked the medical team to discontinue the order. Although the orders do not need to be rewritten by the physician daily anymore, they do need to be discontinued by the physician no later than the end of the nurse’s shift. If later in the shift, or on a subsequent shift, it was decided that T.R. was once again at higher risk to herself for unplanned device removal than the possible harm from restraints, the physician would need to rewrite the order. This regulatory requirement can seem burdensome at times to the bedside clinician that wants to respond in an appropriate time frame to an acutely ill patient whose patient can change multiple times over a 24 hour period.

T.R. was able to rest over the night on the ventilator. When I spoke to T.R’s family over the phone and in person that evening I updated them on her current status, including the decision to discontinue the restraints. As the bedside clinicians, it is important for us to explain to family members the risks and need for restraints for a families loved ones. In general I find family members can immediate grasp the importance of invasive devices to the recovery of their loved ones and the need for restraints at times. I explain that our goal is always for restraints to be a short term therapy that can be preferable to heavily sedating a patient for safety; and the steps we have build in to prevent complications (releasing restraints at regular intervals and repeat assessments). Her respiratory rate, lung sounds and heart rate, and AM chest X-ray also reflected an improved pulmonary status; and she appeared to be moving more purposely, although still not following commands. Since I did not have another patient that night I was able to closely visualize T.R. for most of the night which is not always the case. When I gave report in the morning to the day nurse, I reviewed P.W. case and current condition including my
removal of the restraints and my decision making process in doing so. Also, I did relay the documentation of previous shifts and the need she had for them in the past.

Over the next two days T.R. pulmonary and respiratory status continued to improve so much so that despite frequent visual checks and assessments and placement in a high visible room, T.R. successfully pulled out not one, but two, enterflex feeding tubes on the second day. Although her mental status had improved some, she still did not respond consistently to commands and did not have a level of alertness required for safe swallowing to prevent aspiration. The feeding tubes needed to be replaced to provide her medication and her nutrition since we had an unknown time frame before she would be able to safely swallow. During one replacement of the small bore feeding tube CO2 detection showed that it was in the lung and not the esophagus or stomach, reemphasizing the risk not just for unplanned device removal, but any invasive device placement. The assessment of the nurse at this time was to reinstitute the soft restraints and orders were obtained. The decision was made to move forward with a bedside placement of percutaneous gastric tube. The next time I took care of her, she was back on trach mask and her G-tube was easily concealed under her gown and both sutured and taped securely to her body. The previous shift nurse had reassessed her relative risk of device removal and decided that T.R. did not need restraints at this time, even though at first glance the removal of the G-tube appeared to have a higher risk of injury than a nasogastric feeding tube.

My experience with T.R. is a small example of the complex and continuing assessment that all beside clinicians need to due to assess the safety risks associated with acutely ill individuals that require multiple invasive therapy devices. The presence of any one kind of device, such as an endotracheal tube, does not automatically require restraint. Many patients can be made aware of the ETT and not be restrained. We even have an early mobilization project with patients in the SICU where we actively get patients out of bed and walk them with a portable ventilator and an ETT. Likewise one kind of neurological presentation, such as confusion, does not automatically mean restraints, just like a very weak patient such as T.R. can sometimes muster the strength to pull out vital devices. The decision to use restraints in the ICU is always one of competing risk assessments that vary during the course of a patient’s stay. Bedsides clinicians should be mindful of their colleagues’ previous assessments and decisions, but need to make their own assessments that apply to that patient in that moment in time. My responsibility is then to clearly adhere to policy, document my assessment and clinical decision clearly, and communicate that to the next clinician caring for that patient. I do not think I can eliminate all risk for harm for my patients, but I can do my best to make an informed decision to take all the steps necessary to reduce the risk as much as I can.