Relevance of VitalGo Studies

1. **University of Texas**: Does Physical Therapy Matter among Heart Transplant Recipients while on Intra-Aortic Balloon Pumps in the Pretransplant Period by Dr Patnaik et al at University of Texas.

    - This study on ECMO patients showed that tilting patients was safe and feasible, and reduced length of stay from 29.8 days to 15.1 days and more patients were DC home in tilting group.

    - No adverse events or femoral access site complications.

    - The investigators looked back at patient charts that had received tilting on the
      Vitalgo bed. (6 patients who were tilted and 6 in usual care).

2. **Stanford University**: Physical Therapy in Successful Venoarterial Extracorporeal Membrane Oxygenation Bridge to Orthotopic Heart Transplantation. Dr Rinewalt and colleagues describe a case study of a patient who had ECMO leading up to a heart transplant. Traditionally, femoral access limits mobility because of fears of complications at the access site, and these patients often have complicated and prolonged recovery due in part to the deconditioning and impact of immobility. The authors show that using the TLB allows safe and "Expeditious" recovery when using the TLB as part of an intensive PT program after transplant.

    - Using TLB is safe and feasible. (Multiple centers with ECMO patients)

    - Intensive Early weight bearing early was safe

    - Patient recovery was faster than expected

    - Similar findings to the Texas study that further affirms this finding

3. **University of Washington**, Seattle Wa. Rehab Department: Jessica Horan (OT), Jeff Maggioli (RN) and Matthew Plourde (RN) used the Total Lift Bed to promote early mobility for their ECMO patients. They were able to successfully treat 6 patients with 2 staff as opposed to 6 staff on TLB compared to a tilt table. Using tilt table took too much time and people

    - They needed a more efficient way to achieve the mobility without hip flexion so they brought in the TLB.

They followed results of 6 patients and found that all 6 achieved level 4 on the Extracorporeal Life Support Organization Score (ELSO) which is standing, where they would have remained a zero (no activity) without it.

- Patients were more awake, off the ventilator sooner, able to eat meals, able to participate in their care decisions and able to walk sooner because they avoided the in-bed deconditioning

- The team reported they could safely tilt the patients with 1 therapist and a perfusionist (Reduced from 6 staff on a regular tilt table)

4. **Another case report at Stanford University** by Dr Shudo and colleagues described a post- op care using tilting for a 41-year old female with heart and lung transplant. This was yet

another case study that showed tilting patients with ECMO and severe respiratory disease is safe and feasible, and this patient also had an expedited recovery path, quicker than the medical team expected. The team also felt that the early verticalization helped to reduce her risk for pneumonia and atelectasis.

5. University of Kentucky: Eberhardt, 2017. Efficacy of the Adherence to an Evidence-Based Early Mobilization Protocol on Patient Outcomes Post Thoracic Surgery.

    - The team at Kentucky have realized the importance of the Total Lift Bed, but it was underutilized. They did a QI

project with intensive training and found that utilization increased after the training.

- The Takeaway was that more training is needed on TLB and on mobility equipment for nurses

6. **Carolinas Specialty Hospital Quality Improvement Project.** The goal was to improve outcomes and increase the number of patients that were able to be discharged from the facility in their anticipated time frame.

    - 23 patients were tilted 2-3 times per day and 17 patients received traditional early mobility without tilting.

    - The patients in the tilting group had much greater improvements in mobility than those who were not tilted, and were discharged on average 3 days earlier.

    - Additionally, patients who were being tilted were more awake, more alert and and more engaged with their care. Review of their charts showed that they had less than 1/3 the delirium that patients in the non-tiliting group had.

7. **Homestead Hospital Case study:** Case study of a patient with Guillian Barre syndrome. After 3 months of traditional PT, the patient could tolerate 30 minutes of sitting up but severe pain in hands and feet and no standing, and after 6 months, the patient was still unable to stand.
    a. At 6 months, they used the TLB and after 4 days of

gradually tilting, working with the patient's blood pressure challenges, the team were able to stand the patient fully (supported by the bed) without dizziness or complaints of pain.
b. The therapist reported more gains in one month using the TLB than had been achieved in the prior 6 months.

8. **Neurological Patients can be Safely Treated on the Total Lift Bed**: This qualitative study in a 420 bed rural hospital in Michigan found that therapists used specific criteria in deciding the most appropriate equipment to use with their neurological patients. They used the Total Lift Bed because it allowed them greatest number of weight bearing minutes during therapy, in the safest way for staff, and the most meaningful way for their patients.

a. The relevance of the study is that the Total Lift Bed was chosen over other SPHM equipment for very dependent patients as it can be used throughout the day and staff can get more minutes of therapy in less time.

9. **Burn patient experience with "Miracle Recovery" on Total Lift Bed**: A case study in Sheba Medical Center in Israel with severe burns after being injured in a suicide

bombing attack in Turkey. He had severe smoke inhalation damage, traumatic head injury, blunt trauma wounds, shrapnel extensively throughout his body and 2nd/3rd degree burns over more than 55% of his body surface area.

- After 2 months of traditional mobility treatment and therapy, he was able to stand for a couple of minutes with 3-4 staff

but was not making significant progress.

- After beginning Intermittent Verticalization Therapy (IVT), his team expected him to take 6 months to recover. He was able to walk off the bed in 3 weeks.

- Medical team could not believe how quickly he recovered. Fewer complications, fewer staff to do mobility and faster progress.

10. **Wake Forest ICU Verticalization:** Dr Peter Morris and his team at Wake Forest Medical Center were the first to do a study of feasibility and safety of the TLB. (Jarett.. when did they do this?)

a. They tilted 14 patients, reviewing all vital signs and found that it was safe to tilt critically ill patients.