



Introduction

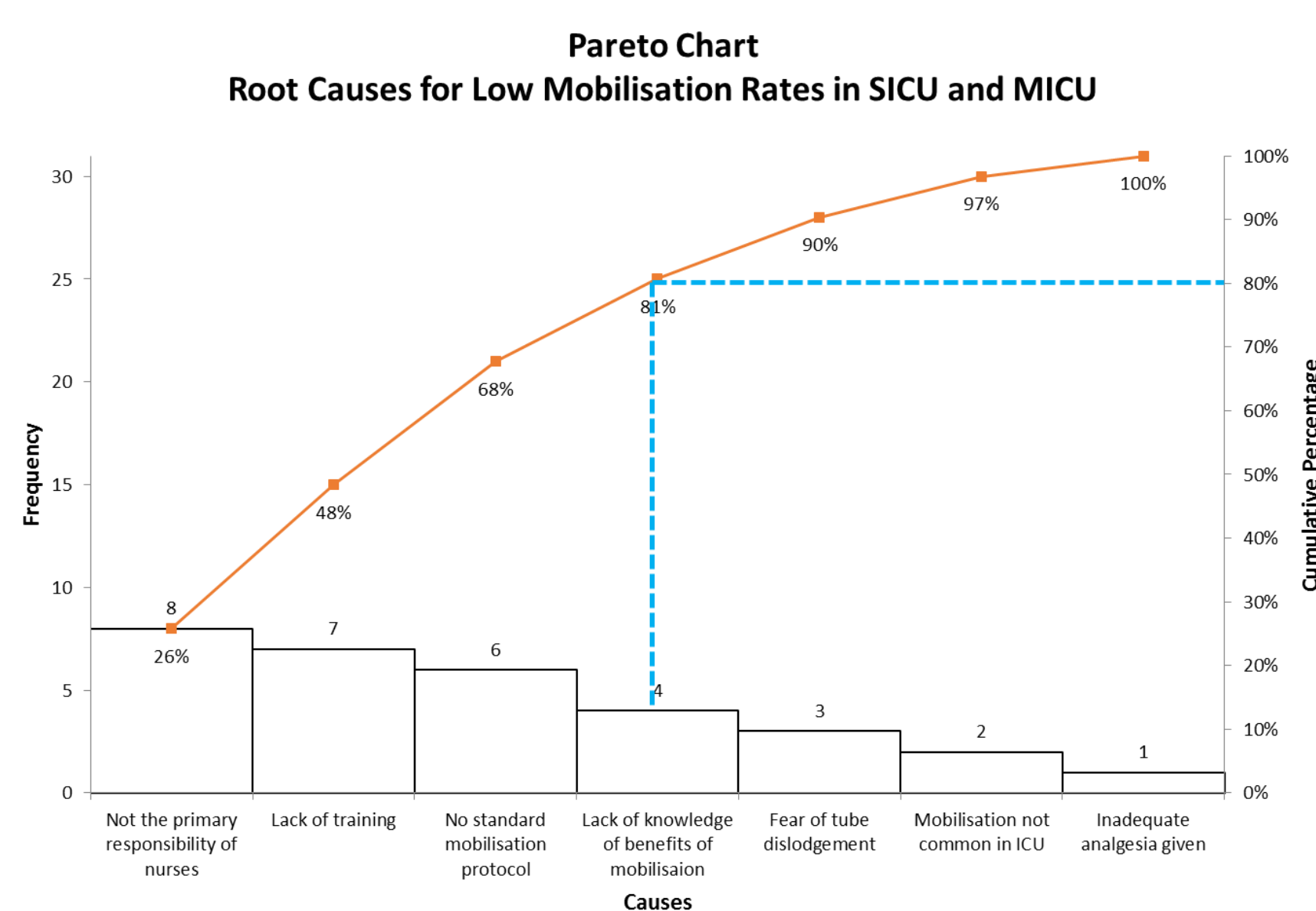
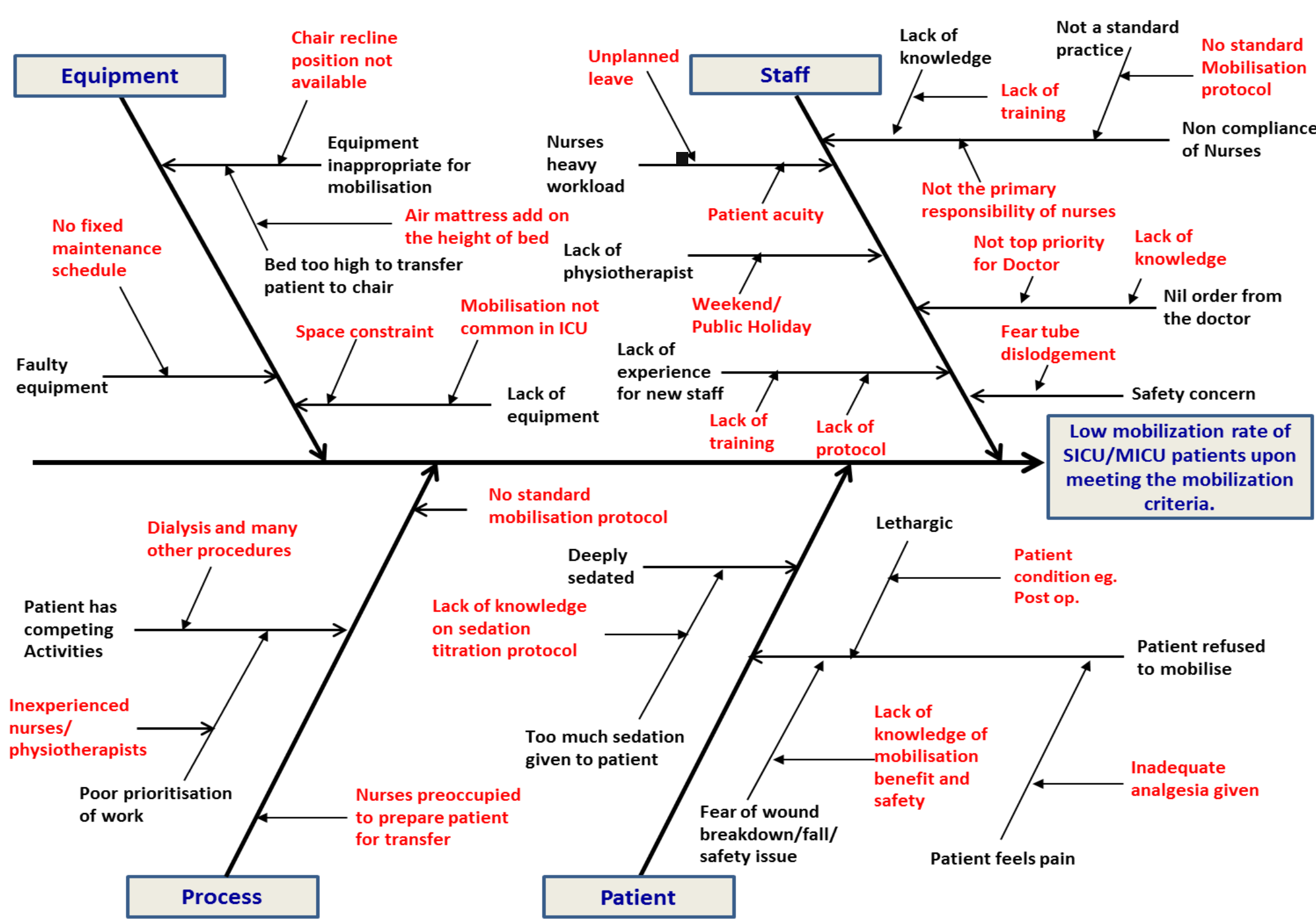
Intensive Care Unit (ICU) patients face higher risk for muscle deconditioning due to limited mobility from multiple invasive lines and many other medical conditions. . According to Castro- Avila et al. (2015)*, research has shown that early rehabilitation during Intensive Care Unit stay led to significantly more patients walking without assistance at hospital discharge and a positive effect on physical function.

Aim

Ensure all SICU and MICU patients being mobilized upon meeting the mobilization criteria within 8 months

Analysis of Problem

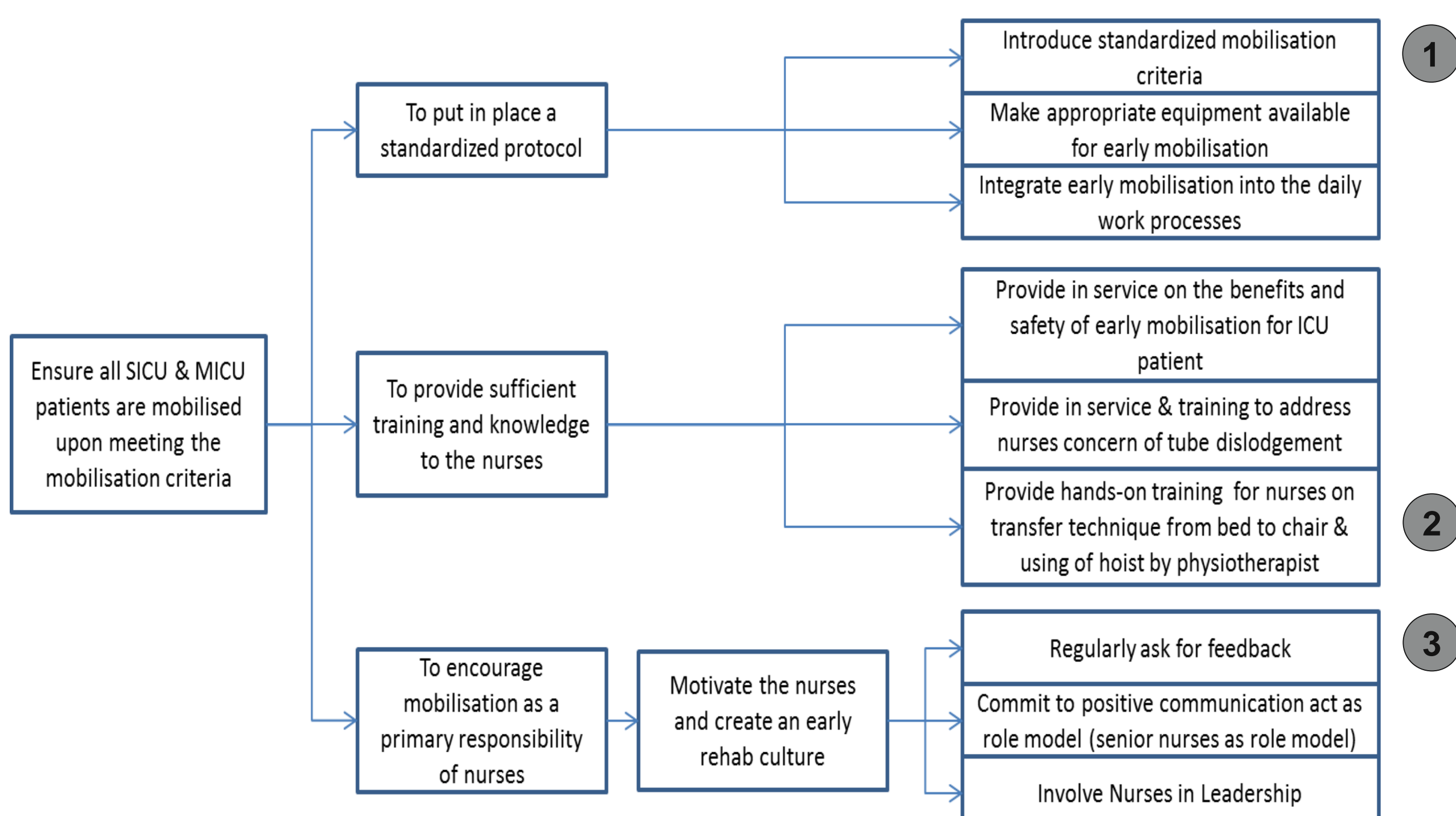
The team used a cause and effect diagram to determine the root causes of the problem:



The team used the multi-voting method to plot the Pareto chart and determined the vital root causes to the problem.

Interventions

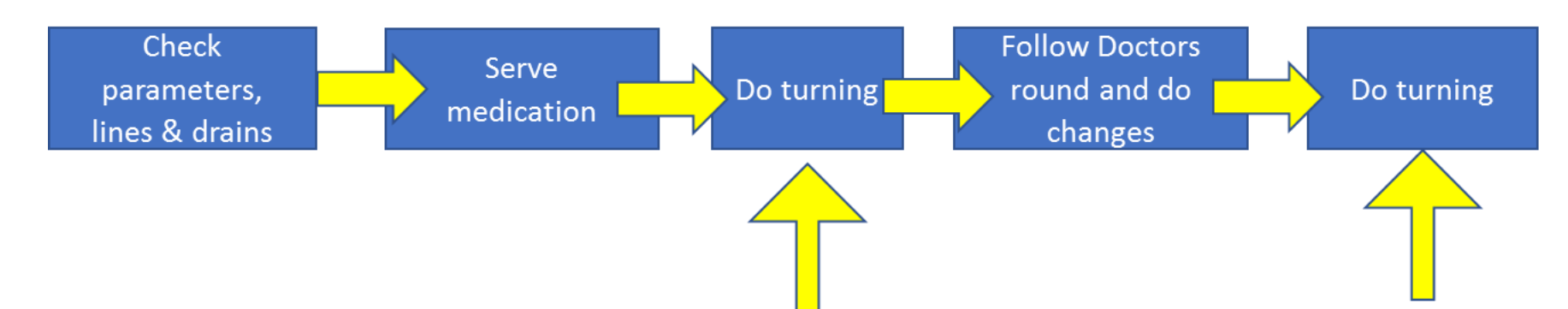
A tree diagram was used to develop the final solutions. 3 solutions were implemented during this project.



Introduction of standardized mobilisation criteria

Mobilisation Criteria	
Functional Status	<input type="checkbox"/> Not bed bound
Surgical Limitations	<input type="checkbox"/> No open abdomen (except with VAC dressing) <input type="checkbox"/> No spinal nursing
Neuro	<input type="checkbox"/> Obeys commands and is cooperative <input type="checkbox"/> RASS of -1 or 0
CV	<input type="checkbox"/> HR 50 to 125 <input type="checkbox"/> MAP 60-100 <input type="checkbox"/> No New Arrhythmias <input type="checkbox"/> Hb<7 <input type="checkbox"/> No Inotropes * (Low dose inotropes to confirm with Dr)
Resp	<input type="checkbox"/> PEEP<10 <input type="checkbox"/> FiO2<0.6 <input type="checkbox"/> SpO2>88% <input type="checkbox"/> RR<40 <input type="checkbox"/> PwO2/FiO2>100

The team worked together to come up with a standardized mobilisation criteria for easy reference. A standardized workflow was also introduced.



To ensure a streamlined process, the team incorporated the assessment of whether patient has met the mobilisation criteria into the current daily task of turning patients. They will then mobilise the patient if they meet the criteria, instead of turning the patient.

Provide training:

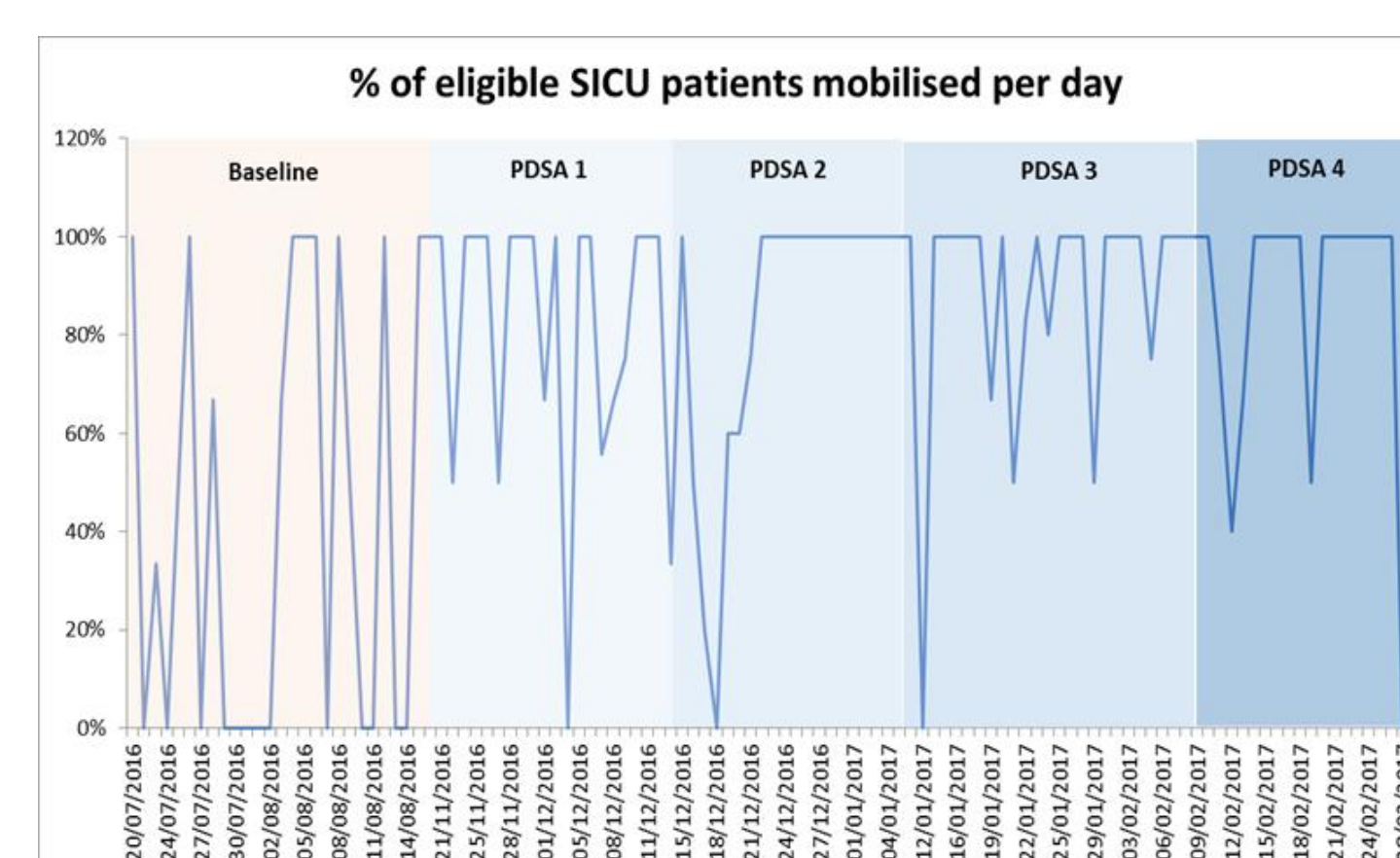
Introducing the benefits and safety of early mobilization, handing over of mobilisation status and conducting hands-on training for nurses on transfer technique from bed to chair & using of hoist



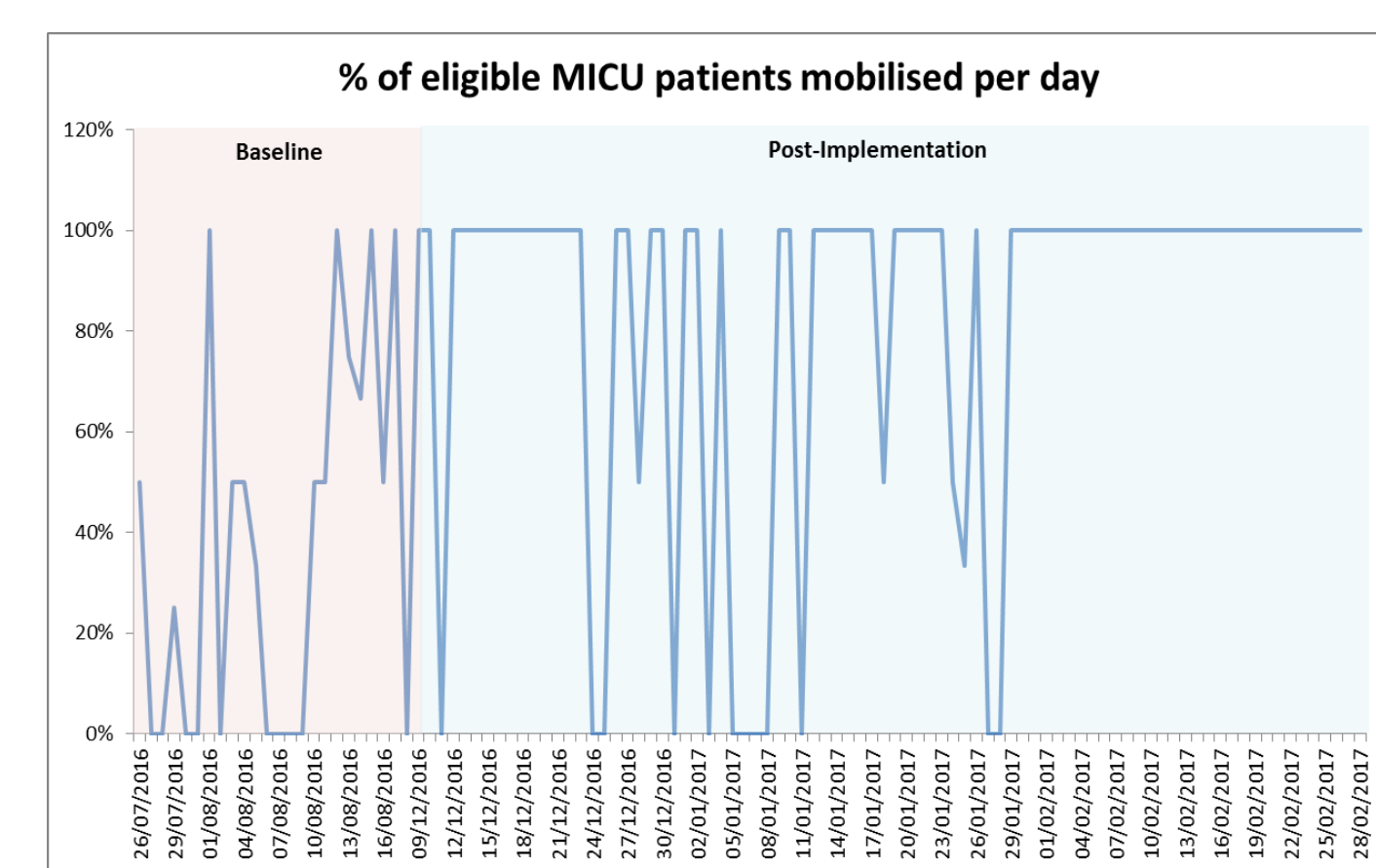
Establish an open feedback channel

Create mobilization culture in the ICUs, engage and empower nurses to give suggestions or idea for improvement.

Results



Pre implementation = 26/48 = **54.2%**
Post implementation = 187/229 = **81.7%**
P-value = 2.67285E-05 < 0.01



Pre implementation = 18/51 = **35.3%**
Post implementation = 46/67 = **68.7%**
P-value = 4.73251E-06 < 0.01

Tangible Result	Intangible Results
<ul style="list-style-type: none"> Improved physical function Reduced mortality 	<ul style="list-style-type: none"> Improved patient satisfaction Shorter length of hospital stay Favorable feedback from patient and staff

Conclusion

The results shown that there was an increase in the number of ICU patients mobilized early which led to improved patient outcomes. Concurrently, the team has conducted a prospective non-blinded observational study MOVE-IT from July 2016 to February 2017. Total of 336 patients were enrolled into the observational study and shown a reduced mortality rate from 38% to 26.6%.

*References: Castro-Avila,A.C., Seron,P., Fan,E., Gaete,M., &Mikan,S. (2015) Effect of Early Rehabilitation during Intensive Care unit Stay on Functional Status:Systematic Review and Meta-Analysis. PLOS ONE. 10,7,1-21.