<div align="center">

Case: Comparing Two Scenarios

</div>

The Case:

Dale Urdick and Lauren Weizhart are both Quality Improvement Managers at two large pediatric hospitals in different provinces. Although hundreds of kilomiles separate them, they both operate in similar environments and share many of the same goals and concerns. For instance, both of their QI teams have been very successful at implementing projects in the past and they both have the support of the leadership behind them. Many of the physicians, point-of-care managers, and staff members at both hospitals have received basic QI training and have participated in testing and implementing QI interventions.

Both hospitals also have a pediatric VAP Prevention program. VAP stands for ventilator-associated pneumonia and is one of the top forms of hospital-acquired infections in children and infants in pediatric intensive care units. To lower the incidence, both hospitals use the VAP Prevention Bundle, which provides a series of evidence-based protocols that the ICU team can implement to try to prevent the infection.

Currently, some—but not all—of the recommended bundle protocols are being implemented at both hospitals. The steps being performed in both pediatric ICUs include head-of-bed elevation, a limited sedation protocol and daily assessment for extubation, inline suctioning, and hand hygiene prior to all contact with the ventilator circuit.

To measure their compliance, both Dale and Lauren have created VAP Prevention checklists that the point-of-care nurses complete as they perform these steps. In both hospitals, the checklist is completed about 80 percent of the time and the compliance with the Prevention Bundle elements vary, with hand hygiene and head-of-bed elevation being the lowest. Both ICUs also track incidence of VAP and there has been a significant reduction in rates since the bundle and checklist were implemented in both hospitals, but the numbers are still above their target.

Although there are so many similarities in their situations, Dale and Lauren do differ in how they will be approaching the implementation of additional changes to try to reduce the VAP rates in their pediatric ICUs.

Scenario #1: Dale

With an accreditation visit on the horizon, Dale works with the ICU manager, the medical director, and the director of respiratory therapy, to add some extra steps from the VAP Prevention bundle to try to reach their goals. The steps include oral care, drainage of water from the ventilator circuit, and improved hand hygiene.

The implementation plan for the updated guideline recommendations include the following:

⟩   Drain condensation from the ventilator circuit every 2-4 hours and before patient is

repositioned
⟩ Perform oral care according to the table (see below)
⟩ Keep hand sanitizers at the bedside

Age group	Intervention
Neonates and infants with no teeth	Every 2 hours: moisten mouth with swabs soaked in clean water or physiological saline Every 2 hours and as needed: coat lips with petroleum jelly
Infants and children <6 years with teeth	Every 12 hours: brush teeth with small, soft toothbrush and fluoride toothpaste; suction out excess toothpaste, but do not rinse out mouth Every 2 hours: moisten mouth with swabs soaked in clean water or physiological saline Every 2 hours and as needed: coat lips with petroleum jelly
Children ≥6 years with teeth	Every 12 hours: Brush teeth with small, soft toothbrush and fluoride toothpaste; suction out excess tooth-paste, but do not rinse out mouth Rinse mouth with 0.1% chlorhexidine: irrigate with a syringe or wipe oral mucosa with a swab; suction excess solution, but do not rinse out mouth with water; use at least 30 minutes after brushing teeth Every 2 hours: moisten mouth with swabs soaked in clean water or physiological saline Every 2 hours and as needed: coat lips with petroleum jelly

Since there is already a VAP Prevention Program in place, Dale works with the management team to modify the existing checklist and provide educational material and sessions to educate the staff on the changes. He also reaches out to infection control to create a hand hygiene poster campaign and audit-feedback. The team reviews the data collected on the checklists every two weeks and sees moderate completion of the checklist and utilization of the new practices.

Dale meets with the nurse manager and point-of-care nurses on the unit and learns that they find it challenging to add these new changes to their existing workload. With this information in hand, he meets with his team to assess their efforts and determine what to do next.

Scenario # 2: Lauren

One of Lauren's hospital's annual corporate objectives is to further reduce the incidence of VAP by incorporating the additional elements of the pediatric VAP Prevention Bundle into the pediatric ICU.

The main components of the additional interventions to be added to further prevent VAP include oral care, drainage of water from the ventilator circuit, and improved hand hygiene. The implementation plan for the guidelines recommendations include the following:

〉 Drain condensation from ventilator circuit every 2-4 hours and before patient is repositioned
〉 Perform oral care according to the table below
〉 Provide hand sanitizers at the bedside

Age group	Intervention
Neonates and infants with no teeth	Every 2 hours: moisten mouth with swabs soaked in clean water or physiological saline Every 2 hours and as needed: coat lips with petroleum jelly
Infants and children <6 years with teeth	Every 12 hours: brush teeth with small, soft toothbrush and fluoride toothpaste; suction out excess toothpaste, but do not rinse out mouth Every 2 hours: moisten mouth with swabs soaked in clean water or physiological saline Every 2 hours and as needed: coat lips with petroleum jelly

Children ≥6 years with teeth	Every 12 hours:
	  Brush teeth with small, soft toothbrush and fluoride toothpaste; suction out excess tooth-paste, but do not rinse out mouth
	  Rinse mouth with 0.1% chlorhexidine: irrigate with a syringe or wipe oral mucosa with a swab; suction excess solution, but do not rinse out mouth with water; use at least 30 minutes after brushing teeth
	Every 2 hours: moisten mouth with swabs soaked in clean water or physiological saline
	Every 2 hours and as needed: coat lips with petroleum jelly

Lauren and her team believe that the new elements of the VAP Prevention Bundle may create additional workload for the point-of-care staff. She decides to assess the workload associated with the entire Bundle protocol by observing and timing the current processes of care, then she talks with the staff nurses about barriers and enablers of the current processes.

She learns that the original elements, including the checklist, added significant additional work and the nurses are not sure that all the elements are value-added in reducing VAP. She discusses the checklist with charge nurses, who feel they could easily incorporate a smaller set of measures into their regularly occurring charge nurse rounds, thereby avoiding these steps needing to be completed by the bedside nurses who say that they not have time to incorporate the new work.

Lauren has some volunteer nurses try the new draft processes and she learns that they indeed add up to one hour of additional work. Working with the point-of-care staff and the interprofessional team, she realizes that the respiratory therapists can easily incorporate the scheduled water drainage into their existing rounds and on trialing, she finds that it adds less

than 20 minutes per shift. The RTs understand the importance and feel they can manage this. The RTs also volunteer to help raise the head of the bed during their rounds.

Lauren also realizes that significant time is spent on getting the equipment for oral care. With help for the clinical assistants, oral care bundles are created and provided at the bedside every shift. However, the nurses still believe that the oral care component adds significant workload and on observing, Lauren finds that it still takes an additional 40 minutes. One member of the team who sits on the Patient and Family Centered Care Committee reports that during a peer site visit, she had noticed that family members were assisting with oral care since they help brush their children's teeth at home. There is some concern about risk given the endotracheal tube, but the team decides to do some trial training for parents and families to involve them in managing this task. This sparks a conversation on how else the hospital can involve families to help add capacity and improve patient centeredness.

1. Read the cases above and work at your table to discuss the key differences
2. Using the set of 6 statements below place a "D" for Dale and an "L" for Lauren in the column that best represents the strategies used by each, respectively.

Assessment Descriptions

End-user participation			
Are end-user staff/ physicians involved in the change? • *Active participation of end-users in the design, testing, revising and implementation of change interventions increases the likelihood of higher perceived value and is more likely to produce a less workload intensive intervention, thus increases the chance of sustained adoption.*			
High risk	Moderate risk	Some risk	Highly adoptable
The intervention has not been designed with or tested with end-users.	End-user staff/ physicians were invited to participate in the initial planning meetings where their input was sought.	End-user staff/ physicians played an initial role in the design and testing of the intervention. Their feedback will be sought after implementation.	End-user staff/ physicians play a continuous role in the change initiative, including designing, piloting and revising the intervention and, during the implementation phase. Their feedback is continuously sought and addressed.

Alignment and planning			
Does the change initiative align with the organization's and/or team's values and goals and has the rollout been planned effectively? • *Change initiatives that are aligned with the goals, values and objectives and planned ahead of time to inform end-users and avoid project/ priority conflicts are more likely to increase perceived value and sustained adoption.*			
High risk	Moderate risk	Some risk	Highly adoptable
The change initiative is addressing an ad-hoc request/ need with little time to plan and communicate with end-users. There are competing priorities or projects.	The change initiative is addressing an ad-hoc request with some attempt to communicate the plan with the end-users and avoid competing priorities or projects.	The change initiative aligns with our goals and plan, which have been communicated effectively with the end-users. However, there are other projects being implemented during the same time period.	The change initiative aligns with our goals and plan, which have been communicated effectively with the end-users (or requested by them.) The timing of the implementation is such that there are no competing priorities or projects.

Resource availability			
Are the required resources (training, equipment, time, personnel) for the implementation of the change initiative known and will they be made available? • *Providing the necessary supports and resources to aid understanding and implementation of the change initiative increases the ability for end-users to adapt the changes into their existing workflow.*			
High risk	Moderate risk	Some risk	Highly adoptable
No assessment of the required resources has been performed.	The resources have been estimated without input from end-users and have not been communicated.	The resources have been estimated with some input from end-users or managers and a plan to provide the resources has been made and communicated.	The resources required have been determined through testing the change initiative and feedback from end-users. A plan to provide the resources has been made and communicated with the end-users.

Workload			
How much workload (cognitive, physical, time) is associated with the intervention? [see Appendix for sample methods for assessing workload] • *Interventions that have less workload or make the current workflow easier to perform are more likely to be sustainably adopted and reliably performed.*			
High risk	Moderate risk	Some risk	Highly adoptable
We have not estimated how much workload is associated with the intervention.	We have attempted to estimate the additional workload associated with the intervention and believe the additional workload should be adoptable by end-users.	We have piloted the intervention and worked with end-users to assess the workload demands and have determined that the intervention adds additional workload. We are looking to see if the intervention can be further simplified, other work removed, or additional resources added.	We have piloted the intervention with end-users to assess the workload demands and have determined that the new work can be implemented with no additional workload or can reduce workload and make their current work easier.

Complexity

How complex is the change intervention?

- *Interventions that are simple in design and application are more likely to be sustainably adopted and reliably performed.*

High risk	Moderate risk	Some risk	Highly adoptable
The intervention requires many steps and processes that require multiple individuals and multiple departments to carry out and would not be testable. Individuals may not be able to perform the tasks reliably in multiple circumstances.	The intervention requires many steps and processes that require multiple individuals and multiple departments to be involved for one cycle of the intervention to be performed. However we can to test or simulate the steps and determine how well it can be performed in multiple circumstances.	The intervention has relatively few steps but requires multiple individuals and/ or departments to be involved for one cycle of the intervention to be performed. However the steps and processes can be tested and, performed reliably under most circumstances.	The intervention is comprised of relatively few steps and processes that can be tested and, performed reliably under most circumstances. One or few people need to be involved for one cycle to be performed and realize the intended benefits.

Efficacy

What degree of evidence and belief is there that this intervention will lead to the intended outcome?

- *Perceptions of the quality and validity of the evidence supporting the belief that the intervention will achieve the desired outcome are more likely to be adopted and produce less change fatigue and cynicism.*

High risk	Moderate risk	Some risk	Highly adoptable
The intervention has no published evidence that it leads to improvement and we are unaware if it has been used or been effective in other organizations.	The intervention has no evidence demonstrating that it leads to improvement but has apparently worked in other organizations similar to ours	The intervention has demonstrated evidence that it leads to improvement but has not been shown to work in organizations similar to ours.	The intervention has demonstrated evidence that is leads to improvement, and has been shown to work in many organizations (or departments) with similar contexts to ours.