

# Ensuring Sustainability for Safety and Quality Improvement Efforts

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# So we often have an effort started...

- We establish a process to improve care
- We figure out improvements to the process
- We achieve our goals with implementation
- Then what? We move to another project
- How can we make sure that our gains are not lost?



# What is Sustainability?

(Shediac-Rizkallah, Health Educ Res 1998; 13: 87-108)

- Desired health benefits are maintained or improved
- The innovation loses its separate identity and becomes part of regular activities (institutionalization)
- Hospital staff provide ongoing support and expertise (building capacity)

# When do we Start Discussing Sustainability?

- Early in program implementation, with improvements seen
- The program is for a limited period of time and plans for support are needed after completion of the program
- Avoid having sustainability as a “latent goal”  
(Shediac-Rizkallah, Health Educ Res 1998; 13: 87-108)
- Need to plan for sustainability



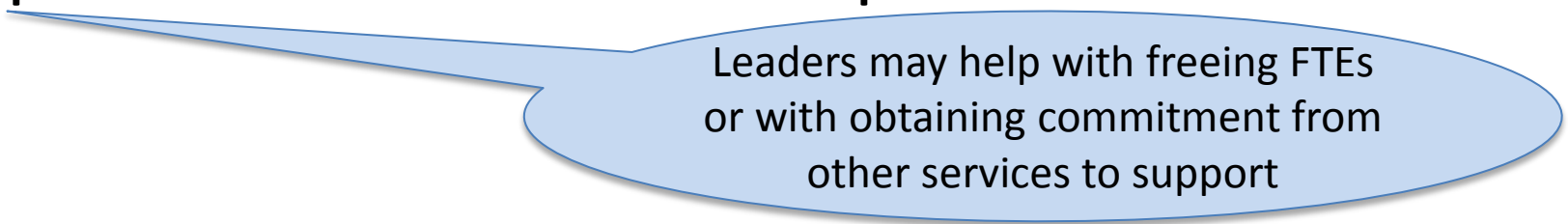
# Planning for Sustainability

- Identify required resources post-implementation
- Identify mechanisms for integration of the process into daily work flow
- Identify the team that will be accountable for sustaining the work (who/how)

# Plan for Resources

## (Done During Implementation)

- Engage teams and evaluate their needs: work on most efficient and effective process that is durable
- Engage leaders to support sustainability: e.g., technical support (EMR), FTE support, promote collaboration to build capacity-  
business case is present with the improvements seen with implementation



Leaders may help with freeing FTEs or with obtaining commitment from other services to support



# Planning for Sustainability

- Identify mechanisms for integration of the process into daily work flow: achieved during implementation-institutionalization of the work
- Identify the team that will be accountable for sustaining the work (who/how): if I want to know how the work is going, who is in charge? How ensuring improvements will be done?

# Factors that Influence Sustainability

1. Effectiveness
2. Institutionalization (routinization and integration with existing programs/services)
3. Building capacity: (program champions/leadership)
4. Context (internal and external environment)



# 1. Effectiveness

- a. Process should be effective and perceived to be by healthcare workers (accepted)
- b. The program fits with the organization and flexible enough to allow future modifications  
(Wiltsey, Implement Sci 2012; 7:17)
- c. Periodic monitoring/evaluation and feedback
- d. Expanding the effort by also focusing on other areas

# The Example of the Physician-Independent Nurse Driven Urinary Catheter Discontinuation

- IT and quality work on a process to evaluate UC need with the help of EHR triggers
- Protocol is established, reviewed and approved by medical executive committees
- Chiefs of departments notified, but information is not relayed to all urologists
- The program is started. Event: a urinary catheter is removed although it was placed by a urologist for an appropriate indication

# The Example of the Physician-Independent Nurse Driven Urinary Catheter Discontinuation

- Damage control: the process is halted till more refinements
- Make sure **key stakeholders are involved** to provide guidance/ support, and improve the chances to have successful results
- Make sure that adapting the program to the organization's needs does not result in a significant erosion of the **program fidelity**

# Periodic Evaluation and Feedback

- Periodic evaluation to monitor device use and event rates and to identify new or ongoing gaps for intervention
  - point prevalence: e.g., central line, urinary catheter, ventilator use, pressure ulcer evaluation: a snap shot of use over time, highlights the importance of keeping event prevention a priority
  - event rates: reflect outcomes (harms): helps evaluate results of your effort (CAUTI, CLABSI, VAP, falls...)

# Periodic Evaluation and Feedback

- Proper insertion technique audits: central line insertion checklist, audits for urinary catheter placement
- Maintenance audits: line care (scrub the hub), dressing intactness, duration of use

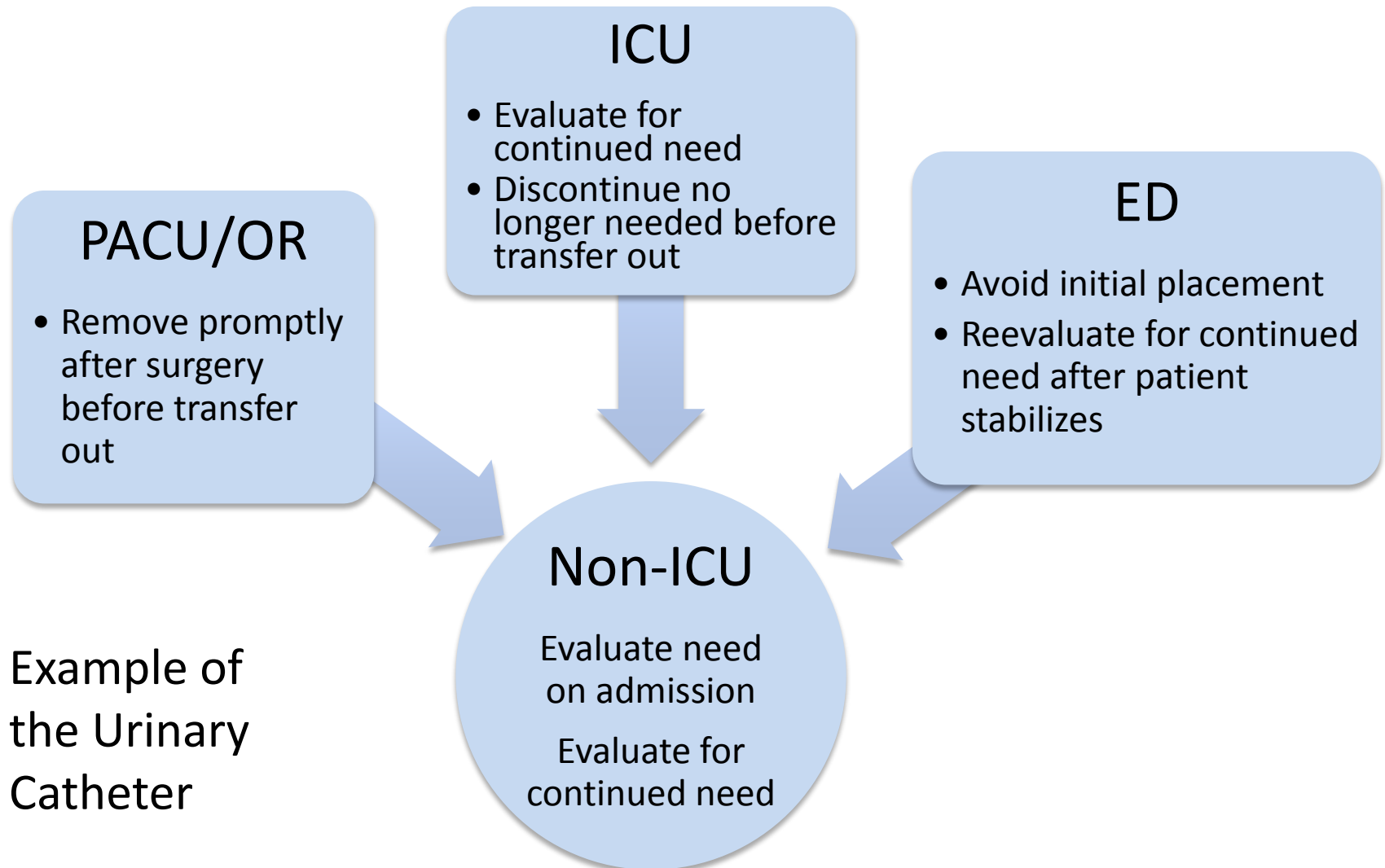
# Feedback on Performance to Teams

- Discuss areas where gaps exist
  1. Process: device use (where do they stand), appropriateness of use (reduce exposure risk)
  2. Events: pressure ulcers, device infections, and the avoidable nature
  3. Other events captured: eg, hematuria (UC), DVT (with CVC)

# Opportunities for Further Improvement

- Expand and spread effort activities to other units
- Examples: urinary catheter, central line, peripheral venous catheter

# Multidisciplinary and Multi-departmental Efforts



Example of  
the Urinary  
Catheter



# Tale of the Peripheral Venous Catheter

- Infection Prevention noted a cluster of cases with peripheral septic thrombophlebitis
- Evaluated the process of insertion
- Multiple gaps found
- **Multidisciplinary** effort (nursing, and infection prevention) to educate and give feedback on performance to staff
- Worked with all units, with a gradual implementation

# Tale of the Peripheral Venous Catheter

- Significant improvements in process and outcome, and sustained
- Key was **continued audits and direct feedback** to the bedside nurse
- If a PVC was >96 hours, dressing was not intact, or any complications: direct discussion with the bedside nurse
- Monthly reports to the units on their performance

# Tale of the Peripheral Venous Catheter

(Fakih, Infect Control Hosp Epidemiol 2012;33(5):449-55)

TABLE 2. Compliance with Process Measures over the 4 Periods of the Study for Groups A and B

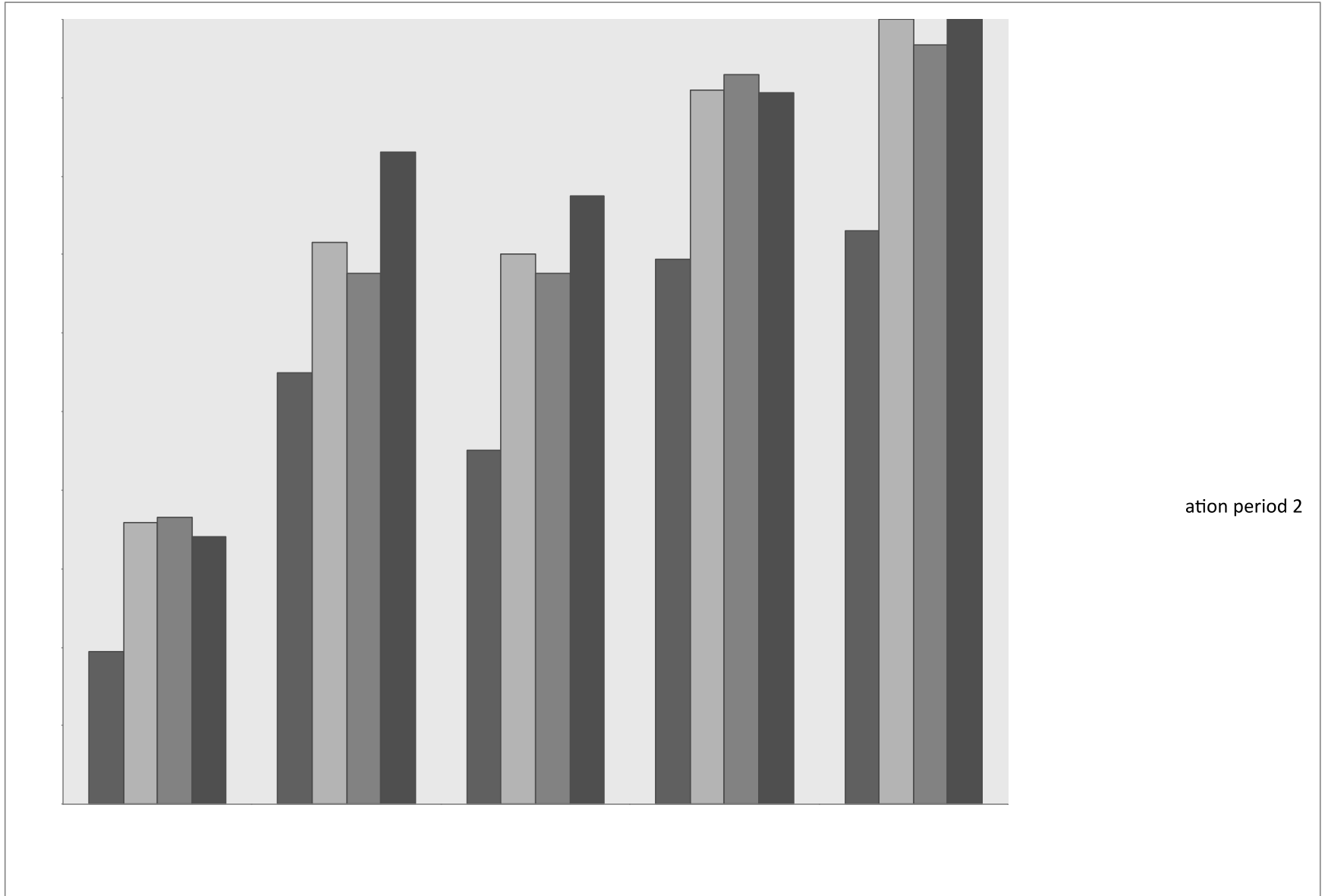
Variable	Proportion of observations (%) documenting compliance				<i>p</i> <sup>a,b</sup>	<i>p</i> <sup>a,c</sup>	<i>p</i> <sup>a,d</sup>
	Preintervention period	Intervention period 1	Intervention period 2	Intervention period 3			
<b>Accurate documentation on dressing</b>							
Group A	178/492 (36.2)	338/577 (58.6)	308/573 (53.8)	310/546 (56.8)	<.0001	<.0001	.31
Group B	205/573 (35.8)	182/551 (33.0)	313/579 (54.1)	298/538 (55.4)	<.001	.35	.66
<b>Compliance with appropriate duration of PVC use</b>							
Group A	493/536 (92)	557/578 (96.4)	546/566 (96.5)	537/568 (94.5)	.002	.002	.12
Group B	524/558 (93.9)	508/550 (92.4)	539/570 (94.6)	480/508 (94.5)	.40	.34	.96
<b>PVC dressing intact</b>							
Group A	463/536 (86.4)	549/577 (95.1)	540/566 (95.4)	541/568 (95.2)	<.0001	<.0001	.90
Group B	505/558 (90.5)	507/550 (92.2)	542/570 (95.1)	483/508 (95.1)	.004	.32	1.0
<b>Alcohol wipes and caps with nurse</b>							
Group A	98/154 (63.6)	105/142 (73.9)	103/128 (80.5)	56/71 (78.9)	.008	.056	.79
Group B	98/164 (59.8)	71/151 (47)	106/147 (72.1)	44/61 (72.1)	<.0001	.02	1.0
<b>Simulation of line care</b>							
Group A	75/150 (50)	143/150 (95.3)	135/136 (99.3)	173/180 (96.1)	<.0001	<.0001	.08
Group B	86/150 (57.3)	98/150 (65.3)	121/134 (90.3)	143/152 (94.1)	<.0001	.16	.24

# Tale of the Peripheral Venous Catheter

- Infection related to the PVC dropped and we found out that the majority of the infections are for PVCs originating from the Emergency Department
- **Multidepartmental** effort (ED, nursing, infection prevention) to improve the PVC placement and care in the ED
- Education and feedback resulted in sustained improvements
- Collaborative led to further reduction in PVC infection in the hospital!

# Tale of the Peripheral Venous Catheter

(Fakih, Am J Infect Control 2013; 41(6): 531-6)





## 2. Institutionalization

- The program becomes a part of the standard of care in the hospital (only place the catheter based on appropriate indication, comply with proper insertion and maintenance, daily evaluation for need and removal when no longer needed)
- With time, modifications of the program may occur based on new evidence



# Institutionalization

## (Routinization and Integration)

- Alignment with the organization's goals (e.g., promoting safety, process and outcome dashboards)
- Policies and SOPs: update policies based on best practices, and share with healthcare workers
- Regular education and competencies: e.g., line and UC placement and management helps keep healthcare workers updated on the best practices



# Institutionalization

## (Routinization and Integration)

- Healthcare worker daily routine: incorporate it into the workflow (imagine taking vitals, do we forget?)
- Use of electronic medical records: incorporate into order sets, and build reminders or triggers. Needs to be operator friendly, avoid alert fatigue
- Identify how this work might be synergistic with other initiatives: multiple tasks may be bundled together to ensure efficiency and compliance



# 3. Building Capacity

- Continued funding (difficult to keep)
- Collaboration between different stakeholders in the organization (significant support)
- Workforce turnover (negative effect)

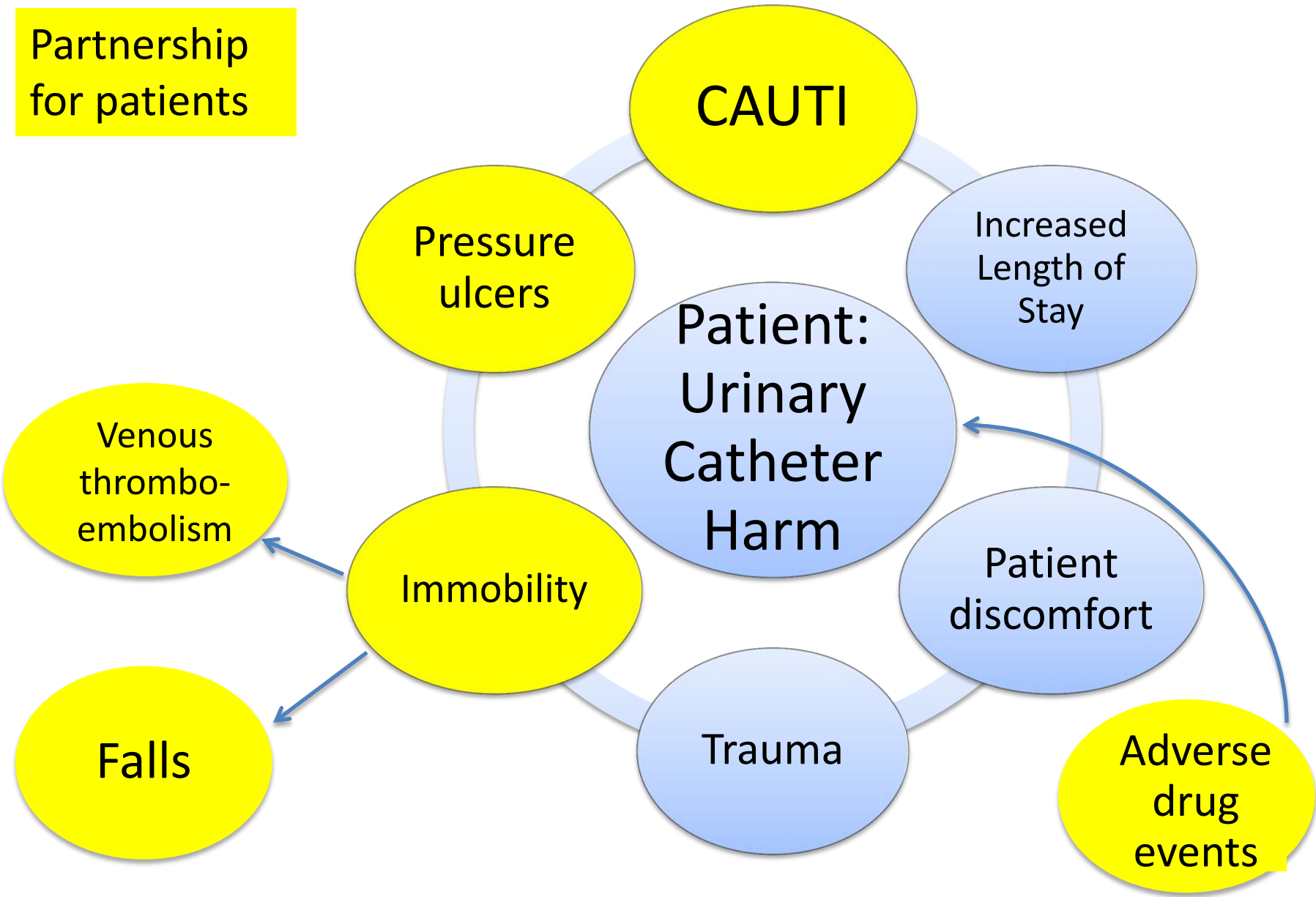
# Could this happen at your hospital? The Story of Mr. Smith (1)

- Mr. Smith is 82 year old and gets admitted because of mild congestive heart failure. In the Emergency Department, a **urinary catheter** is placed (although he can use the urinal), and he is transferred to the floor but could not sleep. He is prescribed a **sleeping pill**. He gets more restless, gets out of bed, trips on the catheter and **falls**. He is found to have a **left hip fracture**, and undergoes surgery. Post-operatively, the staff notes that his left leg is swollen and he is diagnosed with **deep venous thrombosis**. He is started on blood thinners.

# Could this happen at your hospital? The Story of Mr. Smith (2)

- Because of his immobility, he develops a **pressure ulcer** on his sacrum. His physician removes the catheter, but now he is having **urinary retention** related to pain medications. The urinary catheter is placed again. The procedure results in **hematuria** with the difficulty in insertion and being on blood thinners. Few days later, he develops fever and his blood pressure drops. Blood cultures and urine cultures grow *Escherichia coli* and he is diagnosed with **CAUTI** and septicemia. After 6 weeks in the hospital and many complications, Mr. Smith is no longer the same.

Partnership  
for patients



Different harms are connected: Multiple stakeholders need to work together

# The Champions (Physicians/Nurses)

- Identified during program implementation
- Keep the effort as a priority during sustainability
- Provide expertise in the topic
- Liaison with peers to promote best practice



# Context

## (Internal and External Environment)

- Internal environment: organization geared towards quality and safety, leaders adopting best practices, employee satisfaction and morale
- External environment:
  1. Public reporting and value based purchasing
  2. National efforts: “Partnership for Patients”, SCIP
  3. Incentives of 3<sup>rd</sup> party payers
  4. State efforts

# Example of Successful Sustainability: SJHMC

- Pilot for nurse driven multidisciplinary rounds to assess urinary catheter need
  1. Educated nurses on risks of the catheter and appropriate indications
  2. Updated hospital policies for urinary catheter placement and maintenance
  3. Involved all stakeholders: nurses, physicians, midlevel providers, ancillary services
  4. Involved multiple departments: non-ICU, ED, and ICU

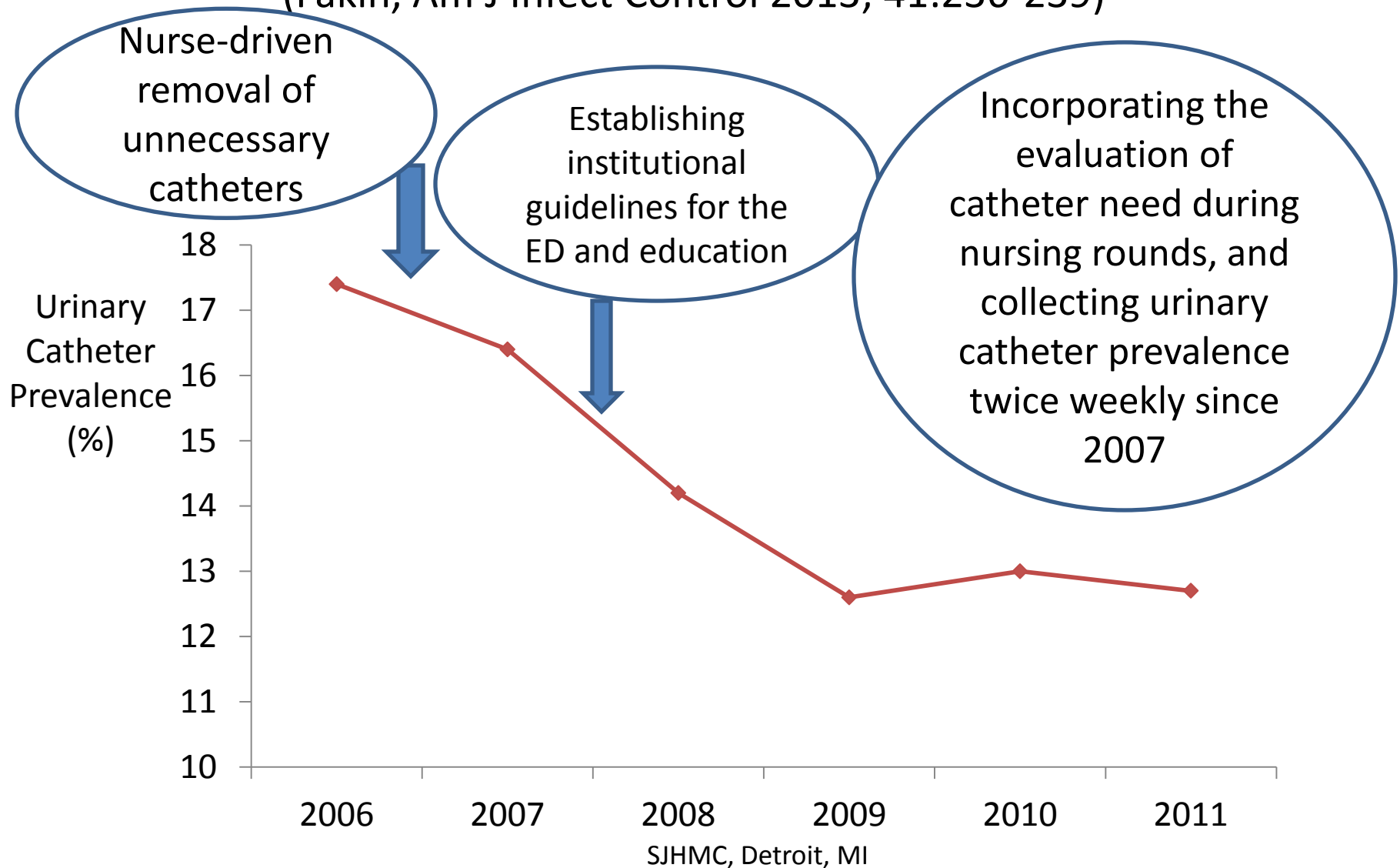
# Example of Successful Sustainability: SJHMC

5. Incorporated daily assessment of the urinary catheter as part of the nurses daily work.
6. Operationalized the evaluation of need by having twice weekly urinary catheter use fed back from non-ICU to Infection Prevention
7. Linked the work to safety efforts: SCIP, pressure ulcers, and immobility/ falls.



# Does the Effect Persist?

(Fakih, Am J Infect Control 2013; 41:236-239)



# How Do We Sustain Safety Efforts?

- By demonstrating continuing effectiveness of program and identifying other opportunities for additional improvement
- Institutionalization/ routinization/ integration of efforts
- Building capacity and supporting internal champions
- Identifying ways to synergize or leverage the work in alignment with other external initiatives or pressures