



Patient Safety First...a California Partnership for Health Principal Partners:  
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# Patient Safety First... a California Partnership for Health

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Anthem Blue Cross, National Health Foundation, Hospital Association of Southern California, Hospital Council of Northern and Central California, Hospital Association of San Diego & Imperial Counties

## Background

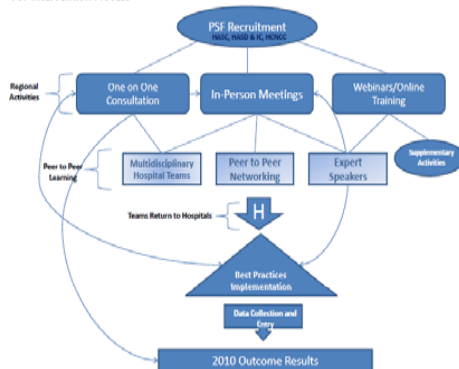
"...It is simply not acceptable for patients to be harmed by the same health care system that is supposed to offer healing and comfort." -IOM

- In 1999 the Institute of Medicine published its landmark report, "To Err is Human" as a call to action to improve patient safety in a comprehensive manner.
- According to the CDC, hospital-acquired infections account for an estimated 1.7 million infections and 99,000 associated deaths each year in American hospitals.
- In California, the three Regional Hospital Associations responded by developing learning collaboratives to improve safety and quality in hospitals, including the San Diego Patient Safety Collaborative, BEACON Bay Area and the Southern California Patient Safety Collaborative.

## Patient Safety First...a California Partnership for Health

- Patient Safety First...a California Partnership for Health (PSF) builds upon the established learning collaboratives formed in each region and unites them around shared initiatives, outcomes and best practices.
- Partners include:
  - Anthem Blue Cross (ABC)
  - Hospital Association of Southern California (HASC)
  - Hospital Association of San Diego and Imperial Counties (HASP & IC)
  - Hospital Council of Northern and Central California (HCNCC)
  - National Health Foundation (NHFF)
  - 148 hospitals from across California
- PSF is a 3 year initiative to reduce or eliminate:
  - Hospital Acquired Infections (Ventilator Acquired Pneumonia, Catheter Acquired Urinary Tract Infections, Central Line Blood Infections)
  - Sepsis Mortality
  - Adverse Perinatal Events
  - Elective Deliveries Prior to 39 Gestational Weeks

### PSF Intervention Process



## PSF Three Year Goals

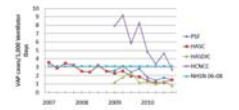
Measure	3 Year Goal
Ventilator Associated Pneumonia (VAP)	Hospitals will reach a rate of zero VAPs
Catheter Associated Urinary Tract Infections (CAUTI)	Hospitals will reach a rate of zero CAUTIs
Central Line Blood Stream Infections (CLBSI)	Hospitals will reach a rate of zero CLBSIs
Sepsis	Statewide 30% reduction in sepsis mortality
Perinatal Birth Trauma	Hospitals will reduce associated birth trauma by 25%
Perinatal Gestational Age Deliveries	Hospitals will reduce elective deliveries prior to 39 weeks to 5% or less
Return on Investment (ROI)	A significant ROI will be generated by the project

## Year One Findings - Trends

- VAP cases per 1,000 ventilator days: PSF hospitals demonstrated a **41% reduction** towards the goal of a zero VAP rate
- CAUTI cases per 1,000 patient days: PSF hospitals demonstrated a **24% reduction** towards the goal of a zero CAUTI rate
- CLBSI cases per 1,000 central line days: PSF hospitals demonstrated a **25% reduction** towards the goal of a zero CLBSI rate
- Sepsis deaths per 100 sepsis cases: PSF hospitals demonstrated a **11% reduction**, more than a third of the way towards the goal of a 30% decline over 3 years. **This represents at least 716 lives saved in 2010.**
- Perinatal birth trauma cases per 1,000 live births and elective deliveries prior to 39 weeks per 100 live births prior to 39 weeks: PSF hospitals rate trended downward, however these differences were not statistically significant, most likely due to the small number of hospitals reporting data for these outcomes.

Outcome	# Hospitals	Average Rate		Absolute Difference	T-statistic	p-value	Percent Difference
		2009	2010				
VAP cases/1,000 ventilator days	64	2.42	1.43	-0.99	4.58	<0.01	-41%
CAUTI cases/1,000 catheter days	28	2.11	1.61	-0.50	2.13	0.04	-24%
CLBSI cases/1,000 central line days	63	1.80	1.36	-0.45	2.32	0.02	-25%
Sepsis deaths/100 sepsis cases	44	20.9	18.6	-2.26	2.71	<0.01	-11%
Perinatal birth trauma cases/1,000 live births	18	3.49	2.14	-1.35	1.23	0.24	-39%
Elective deliveries prior to 39 weeks/100 live births prior to 39 weeks	5	31.82	27.38	-4.44	0.52	0.63	-14%

Ventilator Acquired Pneumonia Cases per 1,000 Ventilator Days PSF and Regions 2007-2010



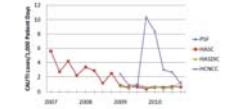
For the HASC and HCNC regions, VAP rates have declined since the hospitals began participating in the PSF intervention. HASC and HCNC hospital VAP rates, on average, fell below the national average for 2009-2010.

Central Line Blood Stream Infections per 1,000 Central Line Days PSF and Regions 2007-2010



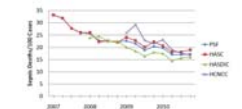
For HASC, CLBSI rates have been consistently below the national average for 2007 and 2009. HASC rates appear to have increased since Q2 2010. HCNC rates have remained consistently below the national average for 2007-2009. The Q1 2010 data point for HCNC represents CLBSI rates from only 1 hospital.

Catheter-Associated Urinary Tract Infections per 1,000 Patient Days PSF and Regions 2007-2010



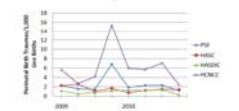
For HASC, CAUTI rates initially declined but have risen off after Q2 2009. One outlier HCNC hospital appears to be contributing to the high CAUTI rates in Q4 2009 and Q1 2010. HCNC CAUTI rates have remained mostly flat since 2009.

Sepsis Deaths per 100 Sepsis Cases PSF and Regions 2007-2010



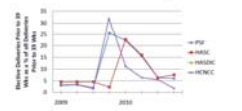
Sepsis mortality rates have been on the decline in all regions for all available portions of data. It was unable to benchmark Sepsis since there is no standard definition across hospitals and no nationally agreed upon definition.

Perinatal Birth Traumas per 1,000 Live Births PSF and Regions 2009-2010



Very few hospitals in HASC and HCNC regions reported perinatal outcome data. NHFF data for Q1-Q3 2010 includes the most hospitals (about 25). HCNC has no data and was not represented in 2010. There are no known national benchmarks for comparison.

Elective Deliveries Prior to 39 Weeks as a Percent of All Deliveries Prior to 39 Weeks PSF and Regions 2009-2010



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## Findings – Costs Avoided

Measure	Costs Avoided in 2010
VAP	\$ 2,240,151
CAUTI	\$ (754,455)
CLBSI	\$ 1,450,875
Sepsis Mortality	\$ 5,668,572
<b>Total</b>	<b>\$ 8,614,153</b>

\*Costs per case based on Anthem Blue Cross claims data

• Overall costs avoided (including VAP, CAUTI, CLBSI and Sepsis Mortality) are \$8.6 million. Calculations excluded perinatal measures due to the lack of data reported for these measures.

## Limitations

• While hospital participation is high overall, data submission by hospitals per initiative is lagging (with approximately 50% of hospitals reporting for one or more measures). With more data from participating hospitals, the internal validity of the study will improve.

• Avoided cases used in ROI calculations require 2009 and 2010 data. However, perinatal data for 2009 remains sparsely populated. The lack of data in the "base" year produces unstable avoided case estimates.

## Next Steps

- Based on 2010 performance, PSF identified the following areas to address of focus for enhanced success and improvement in 2011:
  - Data Capture: increase number of hospitals entering data for all measures.
  - Perinatal Focus: work with hospitals to identify best practices for improving perinatal measures.
  - Perinatal Data: provide direct consultation to hospitals to assist with the data abstraction process for gestational age delivery data.
  - Hospital Participation: continue efforts in specific regions to meet hospital recruitment goals.
  - Initiatives: ensure PSF initiatives are still relevant for hospitals and still require targeted improvement efforts.

## References

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## Acknowledgements

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