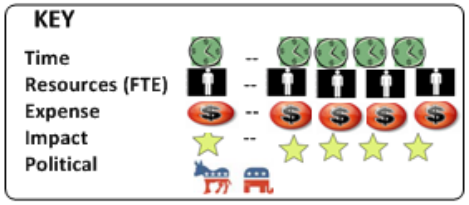
Evidence-Based Medicine Group

June 11, 2010

Maryland Health Quality & Cost Council – Time to Impact for Proposed Recommendations

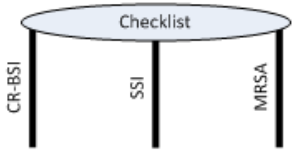
Goal: Implement Evidence-Based Practices and Quality Improvement Initiatives with known cost-savings results State-Wide.



1(a). Hand Hygiene

Intervention: JHH WIPES campaign
Impact:
Increase in Hand Hygiene Compliance by 300% (outcomes for avoided HAIs still under evaluation).
Cost: Literature demonstrates that operating costs = 1% of cost savings due to avoided HAIs
Ease of Implementation:

1(b). Hospital-Acquired Infections (HAIs)



Intervention: Checklist(s), Surveillance, Education, Public Reporting?
Ease of Implementation:

Catheter-Related Blood Stream Infection

Impact:
$35-56K additional cost per case
+10-24 days additional LOS; +15-35% attributable mortality
Approach: NHSN definitions / methodology for ICUs (except NICU)

Surgical Site Infection

Impact:
$34K additional cost per case; +7-20 days additional LOS; +9% attributable mortality
Approach: NHSN definitions / methodology for specific procedures (Colon surgery, Hysterectomy, Laminectomy, Hip/Knee, CABG)

Methicillin-Resistant Staphylococcus Aureus (MRSA)

Impact:
$32K additional cost per case; +additional LOS; + attributable mortality
Approach: Active Surveillance Testing (AST) by nasal culture w/in 48 hrs of admission for all ICUs (except NICU)

Health Care Worker (HCW) Influenza Vaccination

Impact:
Literature shows 50% reduction in all-cause mortality among patients treated by HCWs compliant with Influenza vaccination
Approach: Compliance tracking for acute care facility HCWs

3. Blood Wastage

Intervention: Application of Lean Sigma Methodology to improve usage and storage of blood products
Impact:
Within first two years of project, JHH resulted **in** a savings of over 4,700 units of blood, which corresponds to a savings of $900,000 for the hospital.
Cost: Purchase of coolers and temperature readers
Ease of Implementation:

TIME TO IMPACT	1-3 MONTHS	3-6 MONTHS	6-9 MONTHS	9-12 MONTHS

Blood Wastage Collaborative--Participation

Maryland Health Quality and Cost Council
Reducing Blood Wastage Initiative

Hospital Participation Summary – as of 05/26/2010

	Baseline Data	Pledge Rec'd	10/09 Data	11/ 09 Data	12/09 Data	01/10 Data	02/10 Data	03/31 Call	03/10 Data
American Red Cross	NA	NA	NA	NA	NA	NA	NA	X	NA
Anne Arundel Med Ctr	X	X	X	X	X	X	X		X
Balt/Wash Med Ctr	X	X	X	X	X	X			X
Blood Bank of Delmarva	NA	NA	NA	NA	NA	NA	NA	X	NA
Bon Secours	X	X	X	X	X	X	X	X	X
Braddock Hospital (WMHS)	X (Mem)	X	X	X	X	X	X	X	X
Calvert Memorial Hospital	X	X	X	X	X	X	X	X	X
Carroll Hospital	X	X	X	X	X	X	X	X	X
Chester River Hospital	X	X	X	X	X	X	X		X
Civista Med Ctr	X	X	X	X	X	X	X		X
Doctors Community Hospital	X	X	X	X	X	X	X		X
Dorchester General Hospital	X	X	X	X	X	X	X		
Fort Washington Med Ctr	X	X	X	X	X	X	X		X
Franklin Square Hospital	X (part)	X	X	X	X	X	X		X
Frederick Memorial Hospital	X	X	X	X	X	X	X		X
Garrett County Memorial	X	X	X	X	X	X	X		
Good Samaritan Hospital	X	X	X	X	X				
Greater Baltimore Med Ctr	X	X	X	X	X	X	X	X	X
Harbor Hospital	X	X	X	X	X	X	X	X	X
Harford Memorial Hospital	X	X	X	X	X	X		X	X
Holy Cross Hospital	X	X	X	X					X

	Baseline Data	Pledge Rec'd	10/09 Data	11/ 09 Data	12/09 Data	01/10 Data	02/10 Data	03/31 Call	03/10 Data
Howard County General	X	X	X	X	X	X	X	X	X
Johns Hopkins Bayview	X	X	X	X	X	X	X		X
Johns Hopkins Hospital	X	X	X	X	X	X	X	X	X
Kernan Hospital	X	X	X	X	X	X	X	X	X
Laurel Regional Hospital	X	X	X	X	X	X	X	X	X
Maryland General Hospital	X	X	X	X	X				
Memorial Hospital of Easton	X	X	X	X	X				X
Mercy Medical Center	X	X	X	X	X	X	X		X
Montgomery General Hospital	X	X	X	X	X	X		X	
National Institutes of Health	X		X	X	X			X	X
Northwest Hospital	X	X	X	X	X	X	X	X	X
Peninsula Regional Med Ctr	X	X	X	X	X	X	X		X
Prince George's Hospital	X	X	X	X	X	X	X	X	X
Shady Grove Adventist	X	X	X	X	X	X	X		X
Sinai Hospital of Baltimore	X	X	X	X	X	X	X	X	X
Southern Maryland Hospital	X	X	X	X	X	X	X	X	X
St. Agnes Hospital	X	X	X	X	X	X	X	X	X
St. Joseph Med Ctr	X	X	X	X	X	X			
St. Mary's Hospital	X	X	X	X	X	X	X		X
Suburban Hospital	X	X	X	X	X	X	X	X	X
Union Hospital	X	X	X	X	X	X	X	X	X
Union Memorial Hospital	X	X	X	X	X	X	X	X	
University of MD Med Ctr	X	X	X	X	X	X	X	X	X
Upper Chesapeake Med Ctr								X	X
[illegible] Center									X
Wa[illegible]									X

38* out of 45 hospitals have submitted March data
= 84% participation rate

*as of 05/26/2010

- Participation Pledge
- Baseline Data
- Conference calls/Meeting attendance
- Website registration
- Monthly data submission (Sep 2009 to Mar 2010)
- In person meeting on March 31, 2010

Measurement System Analysis (MSA)

- Purpose: To ensure consistent data collection among collaborative participants
- Focus on all four blood products:
  - Definition of Wastage (Numerator)
  - Definition of Total Products (Denominator)
  - Inter-Rater Reliability
- Method: Telephonic survey with 10 organizations from a representative sample of hospitals based on bed-size

Measurement System Analysis (MSA)—*Cont'd*

- Key Finding: Hospitals find the monthly number of total products for PLASMA (Denominator) by calculating either one of the following: "transfused plus wasted", "all received", or "all thawed"
- Resolution: Revised the project charter with the expanded definition

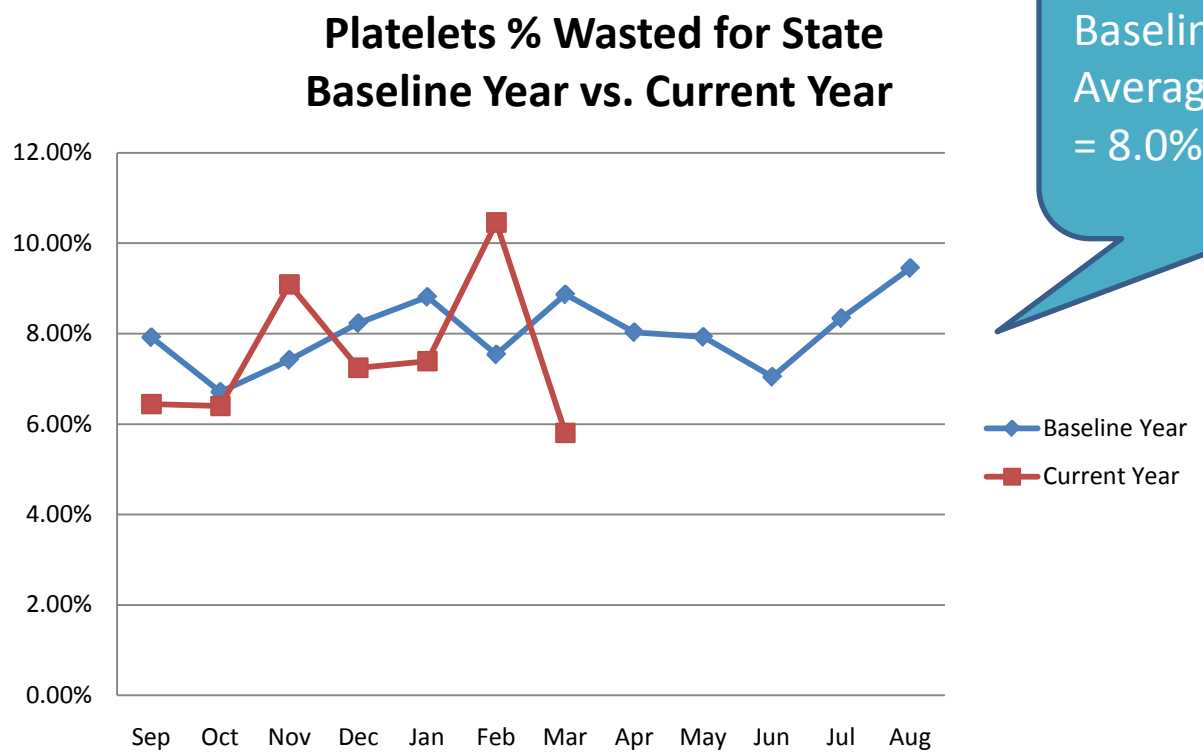
How do you calculate the monthly number of total products? (Denominator)

	How do you calculate the monthly number of total products? (Denominator)	Do you include units that are transferred into your institution from a different institution?	Do you exclude credits from your central blood supplier?	Do you exclude recalls?	Do you exclude a unit if the unit was determined to be poor quality?	Do you exclude units that are transferred out of your facility?	What do you consider one unit of product?
Plasma	3 /10 = transfused plus wasted 5/10 = all received 2/10 = all thawed ★	9/10 (90%) = yes	7/8 (87.5%) = no	9/10 (90%) = no	8/10 (80%) = no	6/9 (66.7%) = no	10/10 (100) = 1 bag
Platelets	9/10 = all received 1/10 = transfused plus wasted	8/8 (100%) = yes	5/7 (71.4%) = no	5/8(62.5%) = no	6/9 (66.7%) = no	5/8 (62.5%) = no	8/10 (80%) = 1 bag contain. 5-8 or 6-8 Eus 2/10 (20%) = 5 Eus
Allo Red	9 /10 = all received, collected, or purchased 1/10 = transfused plus wasted	9/9 (100%) = yes	6/9 (66.7%) = no	8/10 (80%) = no	6/9 (66.7%) = no	7 /10 (70%) = no	10/10 (100) = 1 bag
Auto/Dir Red	9 /10 = all received, collected, or purchased 1/10 = transfused plus wasted	8/8 (100%) = yes	6/8 (75%) = no	N/A	6/8 (75%) = no	5/7 (71.4%) = no	10/10 (100) = 1 bag

7

State Blood Wastage Results

Platelets



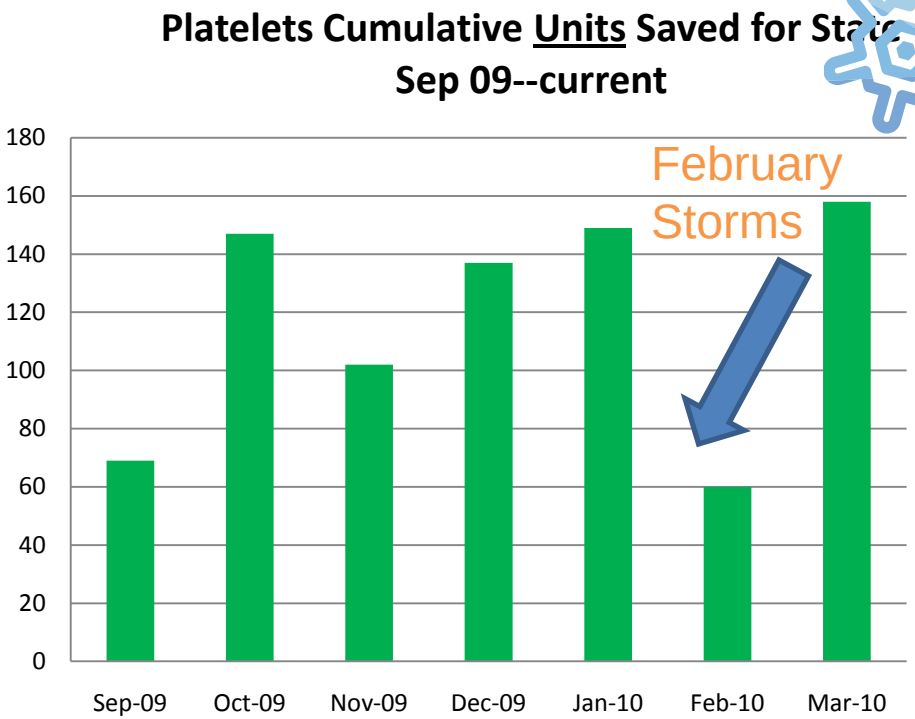
Baseline Year Average % Wasted = 8.0%

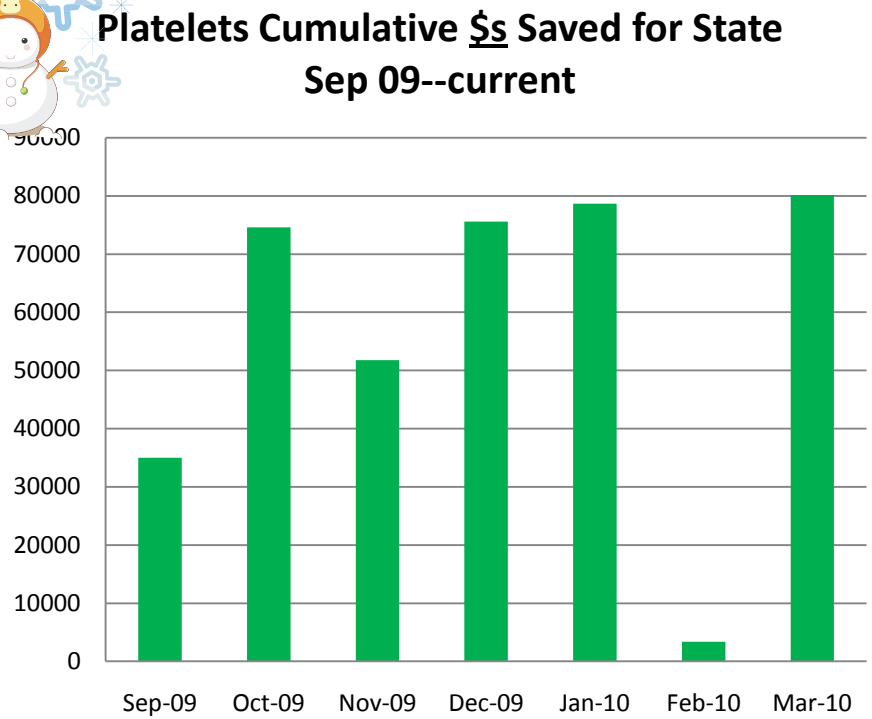
Results for State

Month - Year	9 - 2009	10 - 2009	11 - 2009	12 - 2009	1 - 2010	2 - 2010	3 - 2010
# Organizations Reporting	45	42	44	45	43	41	38
Total Units Wasted	281	307	386	319	327	383	257
Total Units Collected/Purchased	4360	4798	4246	4403	4223	3662	4425
% Wasted	6	6	9	7	8	10	6

State Blood Wastage Results

Platelets

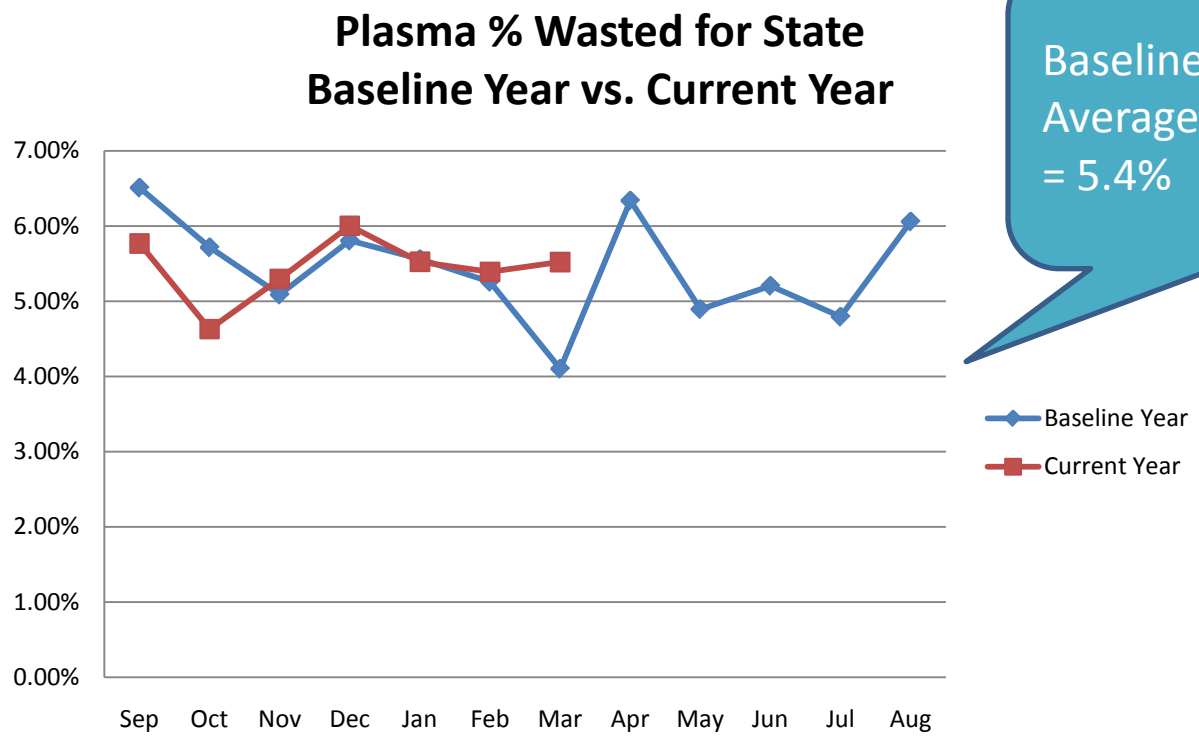




Month - Year	Sep-2009	Oct-2009	Nov-2009	Dec-2009	Jan-2010	Feb-2010	Mar-2010
Predicted Units Wasted	350	385	341	354	339	294	355
Cumulative Units Saved	69	147	102	137	149	60	158
Cumulative Money Saved	$35,013.36	$74,593.68	$51,758.88	$69,519.28	$75,608.56	$30,446.40	$80,175.52

State Blood Wastage Results

Plasma



Baseline Year Average % Wasted = 5.4%

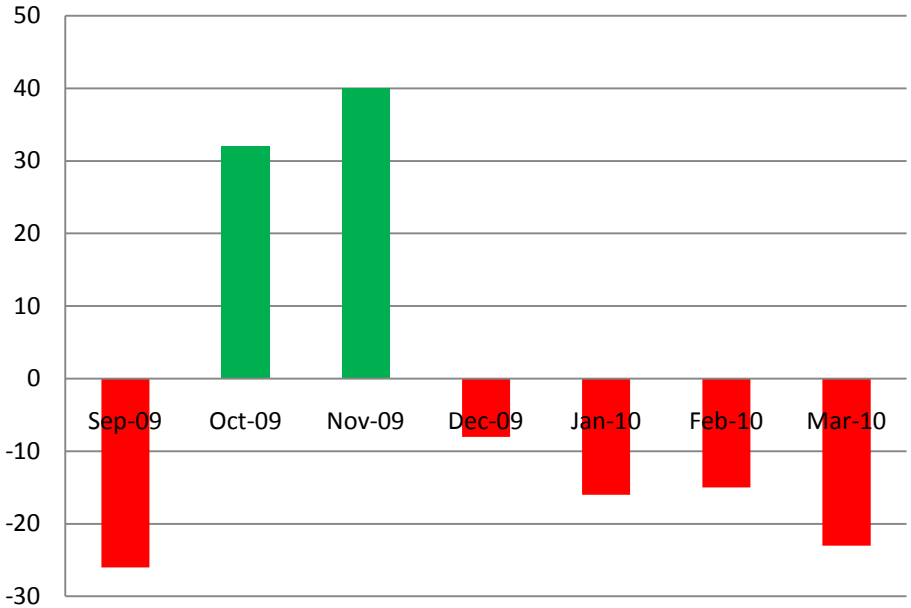
Results for State

Month - Year	9 - 2009	10 - 2009	11 - 2009	12 - 2009	1 - 2010	2 - 2010	3 - 2010
# Organizations Reporting	45	42	44	45	43	41	38
Total Units Wasted	415	342	390	486	386	379	384
Total Units Thawed	7195	7386	7362	8094	6987	7031	6955
% Wasted	6	5	5	6	6	5	6

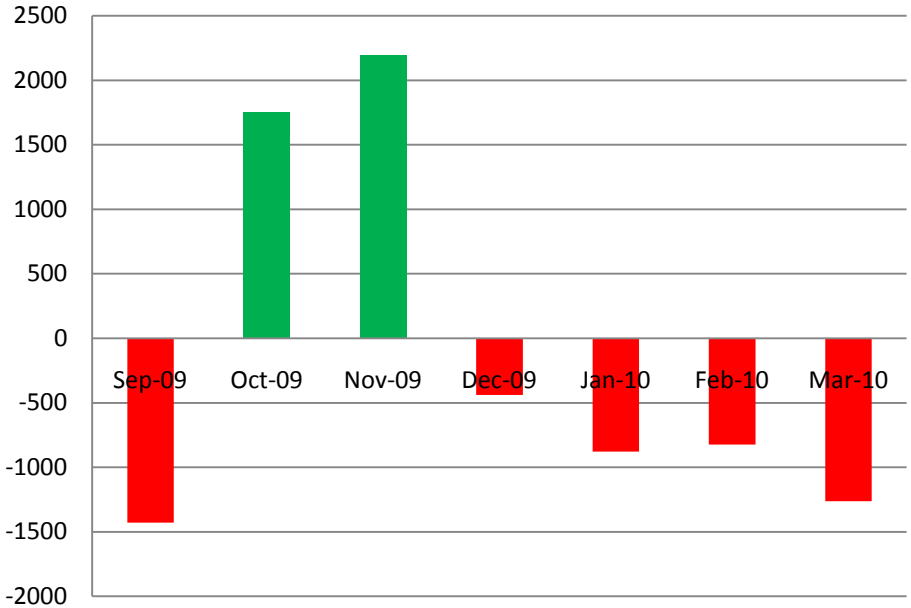
State Blood Wastage Results

Plasma

Plasma Cumulative Units Saved for State Sep 09--Current



Plasma Cumulative $s Saved for State Sep 09--Current



Cumulative Units/Money Saved

Month - Year	Sep-2009	Oct-2009	Nov-2009	Dec-2009	Jan-2010	Feb-2010	Mar-2010
Predicted Units Wasted	389	400	398	438	378	380	376
Cumulative Units Saved	-26	32	40	-8	-16	-15	-23
Cumulative Money Saved	($1,427.66)	$1,757.12	$2,196.40	($439.28)	($878.56)	($823.65)	($1,262.93)

Total Savings for State: 7 Months

• Platelets = 158 units • Plasma = -20 units • Allo Red = 78 units • Auto/Dir Red = -173 units Total Units Saved = 138 units	• Platelets = $80,176 • Plasma = ($1,263) • Allo Red = $18,703 • Auto/Dir Red = ($61,216) Total $s Saved = $78,913

*Note: The Collaborative's focus has been on platelets and plasma based on the project charters. Thus, Allo Red and Auto/Dir Red Cells have been excluded in the calculations.

Projected Results

Goal – By August 31, 2010, reduce blood wastage for Platelets and Plasma by 1% from the baseline average

The Collaborative discussed the possibility to revise the goal (at March 31st meeting) to a level more reasonable for the current performance but decided to still strive for current goal.

			ate	Goal for the Entire Year (Sep '09 –Aug '10)
Platelets	Units Saved			538 units
	Cumulative $s Saved	$80,176	$159,355	$273,180
Plasma	Cumulative Units Saved	-20 units	512 units	878 units
	Cumulative $s Saved	($1,263)	$28,132	$48,227

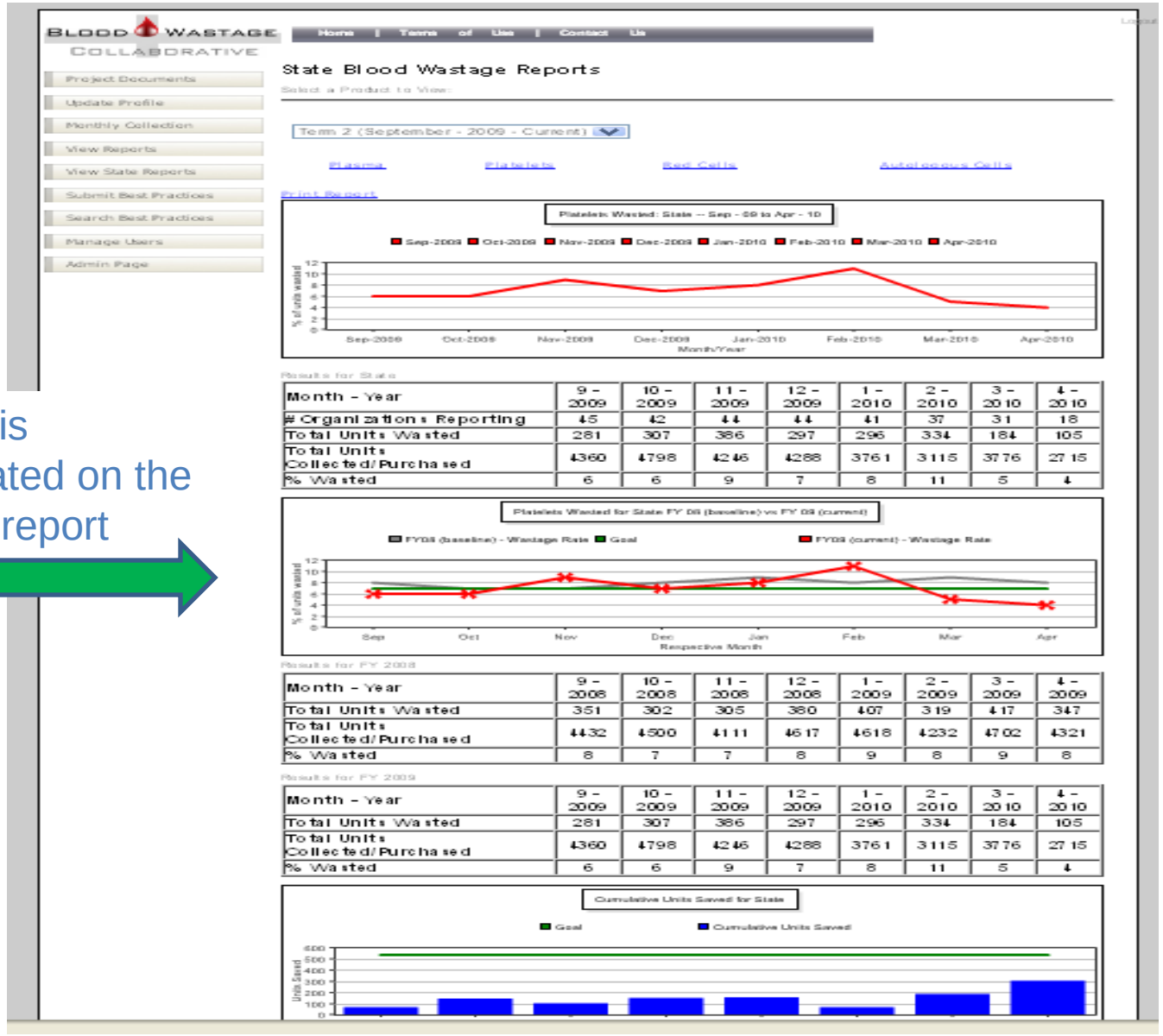
Updates/Next Steps

- Poster for AABB Conference – October 2010
- American Red Cross - “Craig’s List”
- Effect of Collaborative
  - Networking community to distribute information, research and best practices
  - Potential to reduce blood bank budget
- Functionality to website
  - Added state goal on reports
  - Ability to benchmark against peer institutions
- Next Collaborative Membership Call

  June 29th, 11 am— noon

State Report

Goal is indicated on the state report



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# Organizations Reporting	45	42	44	44	41	37	31	18
Total Units Wasted	281	307	386	297	296	334	184	105
Total Units Collected/Purchased	4360	4798	4246	4288	3761	3115	3776	2715
% Wasted	6	6	9	7	8	11	5	4

Month - Year	9 - 2008	10 - 2008	11 - 2008	12 - 2008	1 - 2009	2 - 2009	3 - 2009	4 - 2009
Total Units Wasted	351	302	305	380	407	319	417	347
Total Units Collected/Purchased	4432	4500	4111	4617	4618	4232	4702	4321
% Wasted	8	7	7	8	9	8	9	8

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Benchmark Report

BLOOD WASTAGE COLLABORATIVE

Home | Terms of Use | Contact Us

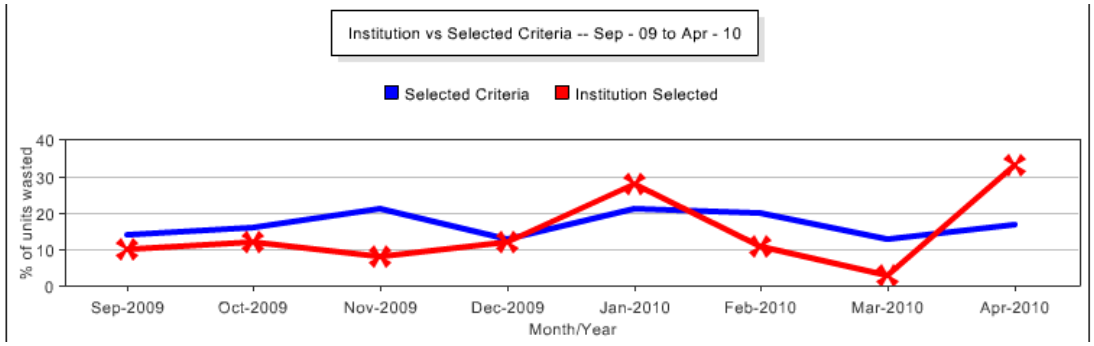
- Project Documents
- Update Profile
- Monthly Collection
- View Reports
- View State Reports
- Submit Best Practices
- Search Best Practices
- Manage Users
- Admin Page

Hospital Grouping

Make Your Selections Below

Select Blood Product	Platelets
Select Reporting Term	2
Select Hospital Size	300 to 499 beds
Select Hospital Type	All
Select Hospital Special Services	All
Select Trauma Level	All
Select Region	All

Query



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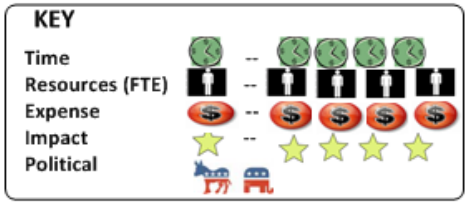

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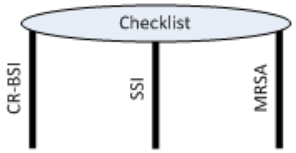

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Ease of Implementation:

TIME TO IMPACT	1-3 MONTHS	3-6 MONTHS	6-9 MONTHS	9-12 MONTHS

Hospital Hand Hygiene Collaborative Recognition— CDC Website

Resources - Hand Hygiene - Mozilla Firefox

View History Bookmarks Tools Help

http://www.cdc.gov/handhygiene/Resources.html

Getting Started Latest Headlines

Resources - Hand Hygiene

CDC Home

Centers for Disease Control and Prevention
Your Online Source for Credible Health Information

SEARCH

A-Z Index A B C D E F G H I J K L M N O P Q R S T U V W X Y Z #

Hand Hygiene in Healthcare Settings

- Hand Hygiene in Healthcare Settings
- Hand Hygiene Features
- Hand Hygiene Basics
- Guidelines
- Training
- Patient Materials
- Promotional Campaign

Hand Hygiene in Healthcare Settings

Text size: S M L XL
Email page
Print page
Bookmark and share

Promotional Campaigns

Resources

WHO Saves Lives Clean Your Hands Campaign
The WHO First Global Patient Safety Challenge team is now pleased to propose two key hand hygiene improvement activities, through the use of two new tools

Get email updates
To receive email updates about Hand

Hand Hygiene Resource Center (HHRC)

Hand Hygiene Resource Center (HHRC)
Slide sets and educational aids from the St. Raphael Healthcare System and Dr. John Boyce

Statewide Hand Hygiene Campaigns

- Maryland
  The Maryland Hospital Hand Hygiene Collaborative campaign is an important statewide initiative to enhance the prevention of healthcare-associated infections (HAI) in Maryland hospitals. The goal of the Maryland Hospital Hand Hygiene Collaborative is to strengthen and compliment the work already being done to improve Hand Hygiene.
- South Carolina

Recognition--CDC Webinar

Example State Campaign: Maryland

- 200+ attendees from > 40 acute care and specialty care hospitals
- Followed by series of webinars

Collaborative Participation

Commitment Letter

42 out of 46 acute care hospitals

= 89%

Attendance at the kick-off meeting, learning sessions, and webinar series

Data Submission*

March 2010:

35 out of 42 committed hospitals = 83 %

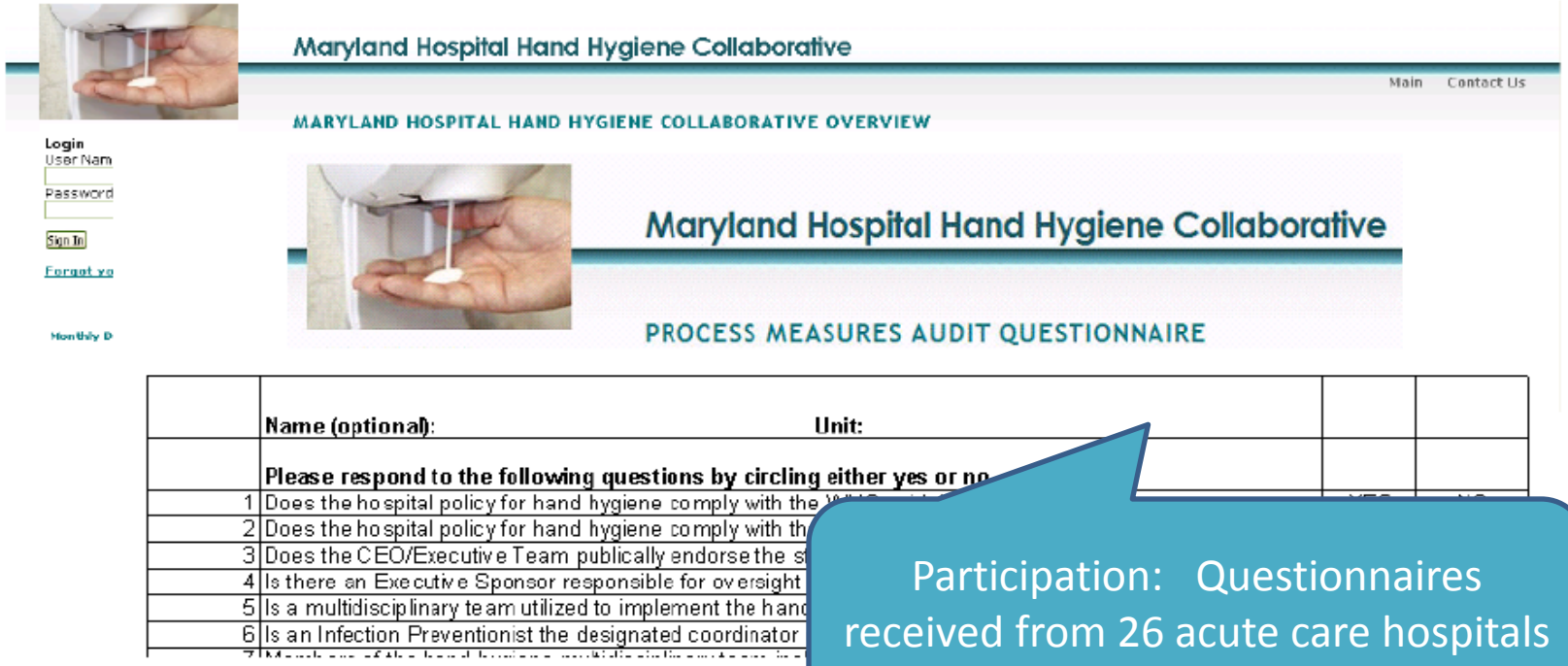
* Since Feb 2010

In addition to the acute care hospitals, the following specialty hospitals are participating:

- Adventist Rehab Hospital of MD
- Mt. Washington Pediatric Hospital
- University Specialty Hospital
- VA Maryland Health Care System

Process Measures—
Webinar (Mar 24th, 2010) and Questionnaire Submission

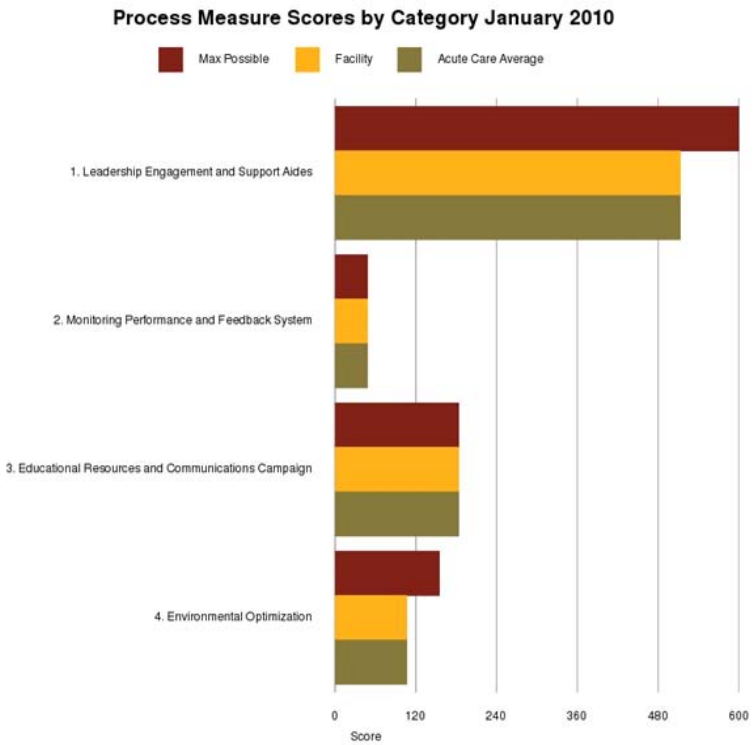
Reporting Tools



Participation: Questionnaires received from 26 acute care hospitals and 3 specialty hospitals

MARYLAND Patient Safety CENTER

Process Measures Report

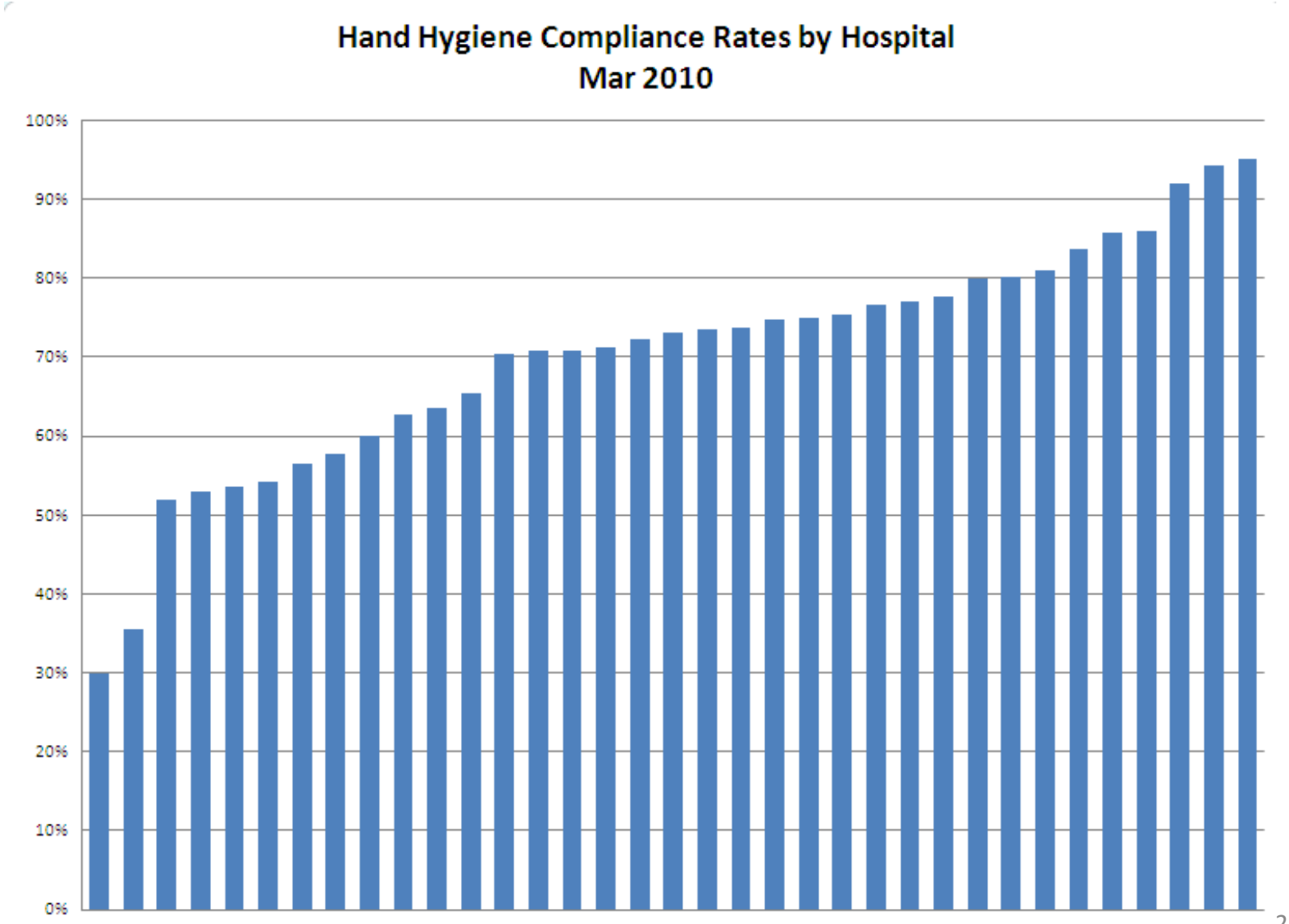


- **Key Finding:**
  Some facilities are using "**known"** observers to collect HH compliance data.

  *Unknown Observer - non-Infection Preventionist staff member that observes hand hygiene compliance on units other than their own. The Unknown Observer's task is unknown to other staff at the time of the observation.

- **Action Item:**
  Follow up with facilities to determine whether the same data is entered into handstats.org

HH Compliance Feedback Reports for MHQCC only



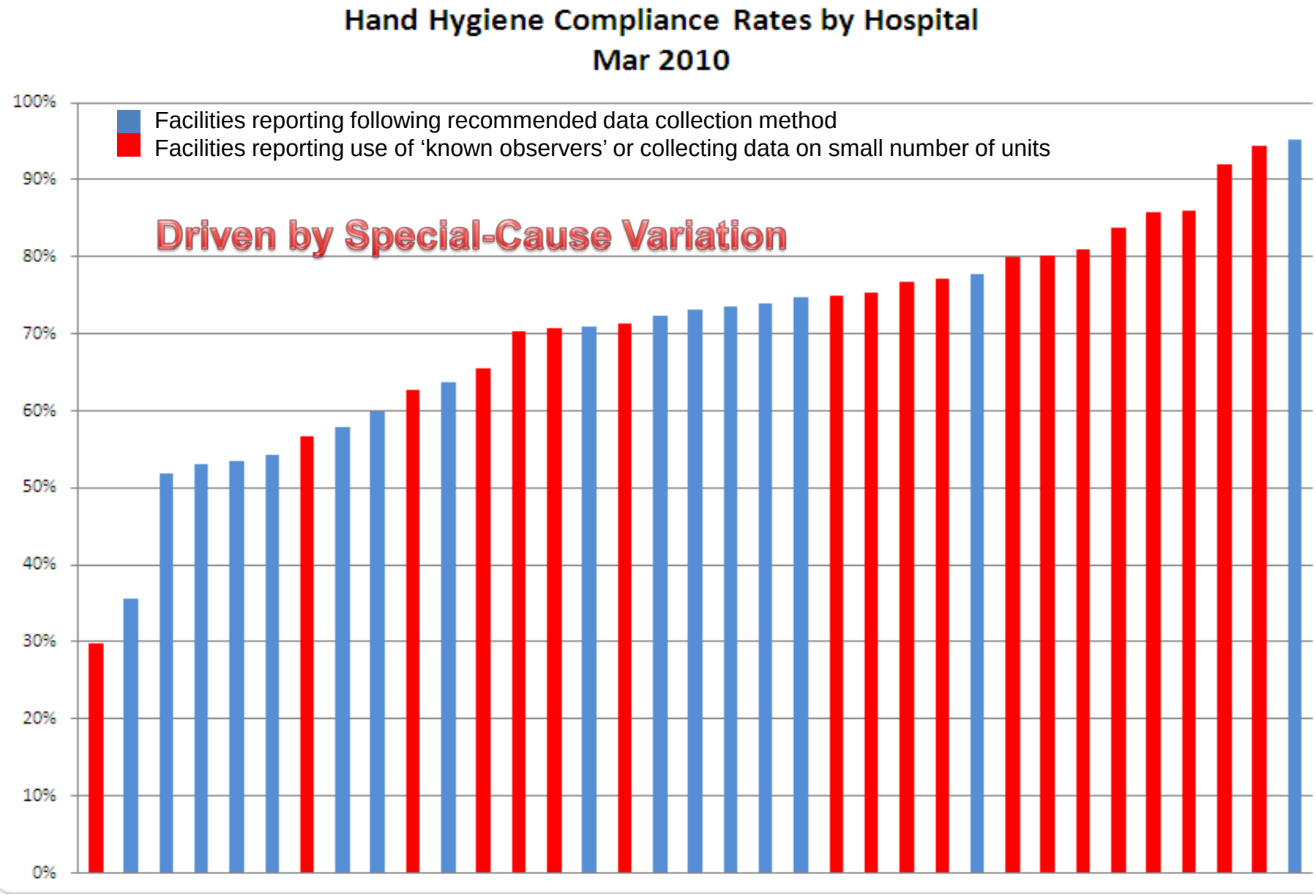
Issues with Data Integrity (Data Collection Methodology)

- **Use of "Known Observers"**
  - Problem: Numerous collaborative participants(n= 16) are submitting data into handstats.org using known observers
  - Solution:
    - Consultation with participants
    - Identifying the data when presenting statewide compliance
- **# of Units Observed per Hospital**
  - Problem: Numerous collaborative participants (n =9) are submitting data for < 5 units.
  - Solution:
    - Determine "% of units observed"
    - Consultation with participants
    - Identifying the data when presenting statewide compliance

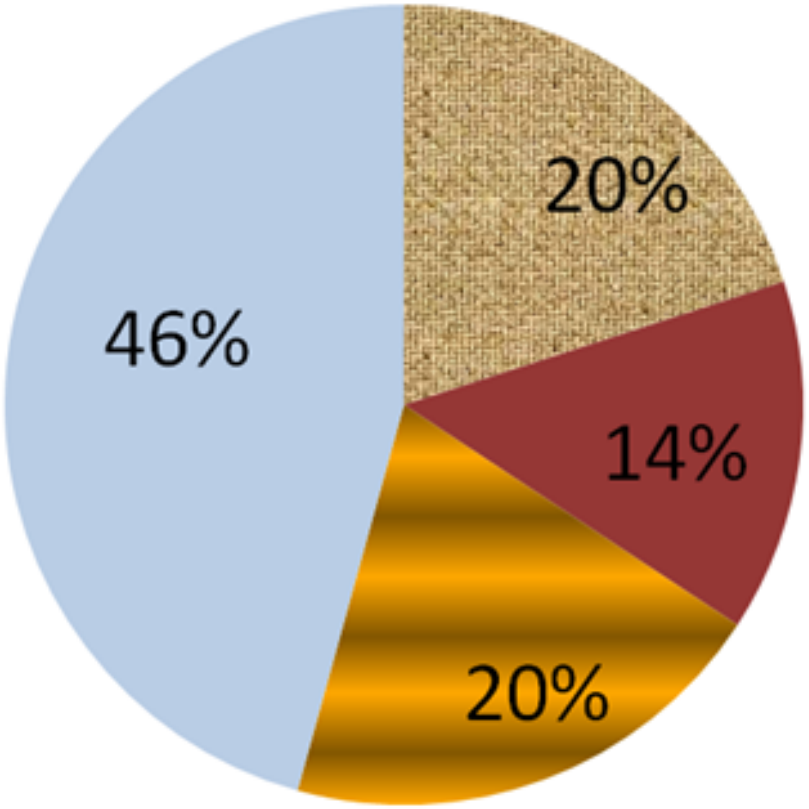
Strategy regarding Data Integrity

- Conduct a telephonic survey (i.e., Measurement System Analysis)
  - Create standard tools to follow-up with prioritized collaborative members (either by phone or visit)
- Site Visits/Telephonic Consultation
  - Interviews with Hand Hygiene Teams and/or Executive Sponsor(s)
- Review standard methodology with unknown observers and brainstorm on strategies to implement at the next Learning Session (June 15)
- Send letter to Executive Sponsor and Team Lead

Revised Report for MHQCC



Breakdown by Data Collection Methodology



No. of Observed Units is low compared to bedsize & Not using Unknown Observers

No. of Observed Units is low compared to bedsize

Not using Unknown Observers

Hospitals using recommended data collection method

2010-2011 Collaborative Timeline

MONTH	HANDSTATS (DUE 10TH)	PROCESS MEASURES	LEARNING SESSION	WEBINAR CONFERENCE CALL
FEBRUARY	X		#1	
MARCH	X	5TH		X
APRIL	X			X
MAY	X			X
JUNE	X	15TH	#2	
JULY	X			X
AUGUST	X			X
SEPTEMBER	X	15TH		X
OCTOBER	X		#3	
NOVEMBER	X			X
DECEMBER	X	15TH		X
JANUARY	X			X
FEBRUARY	X		CONGRESS	

Proposed EBM* Hospital Initiatives

- Support the Maryland Hospital Association's rapid intervention to achieve zero blood stream infections in 2011.
- Red Bag Waste
  - Next Step: Survey hospitals to determine responsible party (e.g. environmental services, VP, Operations, etc.)
- Maryland Telemedicine Network Solution

**Short term, quick wins*

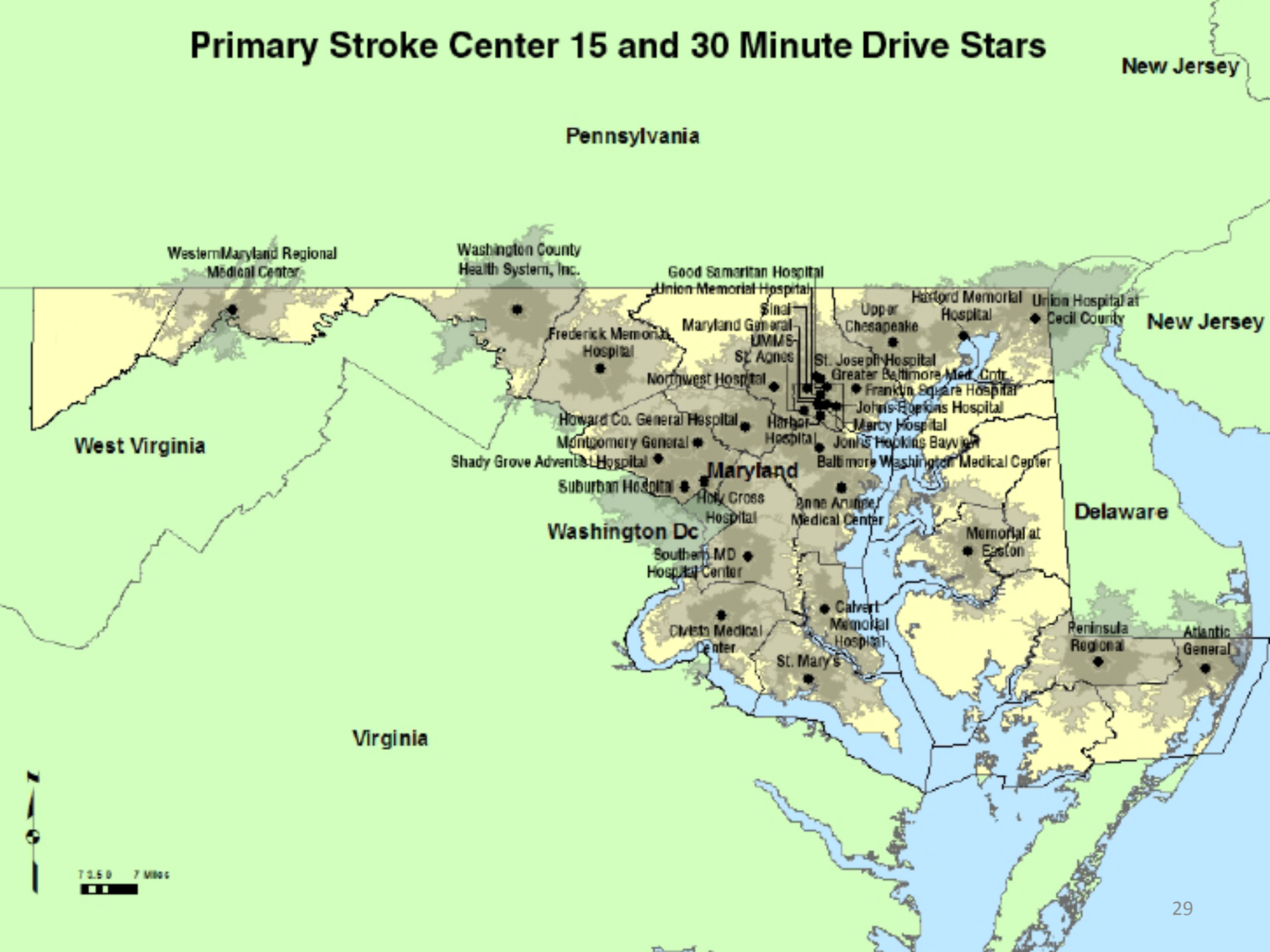
Maryland Telemedicine Network Solution

Problem – Major Areas of Need

- Under-served areas (rural and inner-city)
- Lack of 24/7 ED Coverage of following Specialties
  - Neurology/Stroke
  - Orthopedics
  - Plastic Surgery
  - Ear, Nose and Throat
  - Dermatology

- Emergency/Disaster inter-hospital coordination of care

Primary Stroke Center 15 and 30 Minute Drive Stars



Anticipated Benefits - Maryland

- Avoid creation of a decentralized system littered with redundancy, increased costs, and reduced quality
- Improve quality due to increased access to specialty care and additional resident supervision opportunities

“Window of Opportunity”

- CRISP (501c) Health Information Exchange
  - telemedicine is a logical technological fit for an HIE
- Federal Health Care Reform
  - potential telemedicine funding opportunities
- Work being done by Governor’s Council on Heart Disease and Stroke, MIEMSS, JHM, UMMS, the Rural Health Council, and others

Next Steps

- Develop a Detailed Business Plan
  - Define Structure
  - Identify Telemedicine System
  - Determine Resources
    - Clinical (including institutions and providers)
    - Administrative
  - Cost, funding, 5 year ROI (including defining success metrics)
  - Challenges and recommendations
  - Timeline
    - Phase 1: Neurology/Stroke Network
    - Phase 2: Apply lessons learned to other specialties
- Create a Steering Committee to include representation from each of the following groups: BOP, CRISP, DHMH, HSCRC, JHM, MHA, MHQCC, MIEMSS,UMMS, a non-academic hub hospital, a community hospital, and a payer.

Questions?