

IHS Health Information Technology and the Medical Home

September 22 2011




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**Office of Information Technology
Indian Health Service, DHHS**





Agenda

- ◆ Indian Health Service
 - Context, history, and population health model
 - ◆ Improving Patient Care PCMH Program
 - ◆ HIT to facilitate PCMH and Pop Health
 - RPMS and RPMS iCare
 - Population Health Informatics in service
 - PCMH Application
 - ◆ Discussion/Questions
- 



American Indians and Alaska Natives in the United States



American Indian and Alaska Native Population: 2000
Alone or in Combination



The Most Populated Reservations and Off-Reservation Trust Lands, 2000

Reservation and Off-Reservation Trust Land	Population
Navajo Nation Reservation and Off-Reservation Trust Land (AZ, NM)	1,041,000
San Felipe Reservation and Off-Reservation Trust Land (NV)	1,000,000
Fort Mojave Reservation (CA)	1,000,000
Fort McDowell Reservation and Off-Reservation Trust Land (AZ)	1,000,000
Fort Yuma Reservation and Off-Reservation Trust Land (CA)	1,000,000
Fort Huachuca Reservation and Off-Reservation Trust Land (AZ)	1,000,000
Fort McDowell-Wainwright Reservation and Off-Reservation Trust Land (AZ)	1,000,000
Fort Mojave Reservation and Off-Reservation Trust Land (NV)	1,000,000
Fort Yuma Reservation and Off-Reservation Trust Land (CA)	1,000,000
Fort Huachuca Reservation and Off-Reservation Trust Land (AZ)	1,000,000
Fort McDowell-Wainwright Reservation and Off-Reservation Trust Land (AZ)	1,000,000

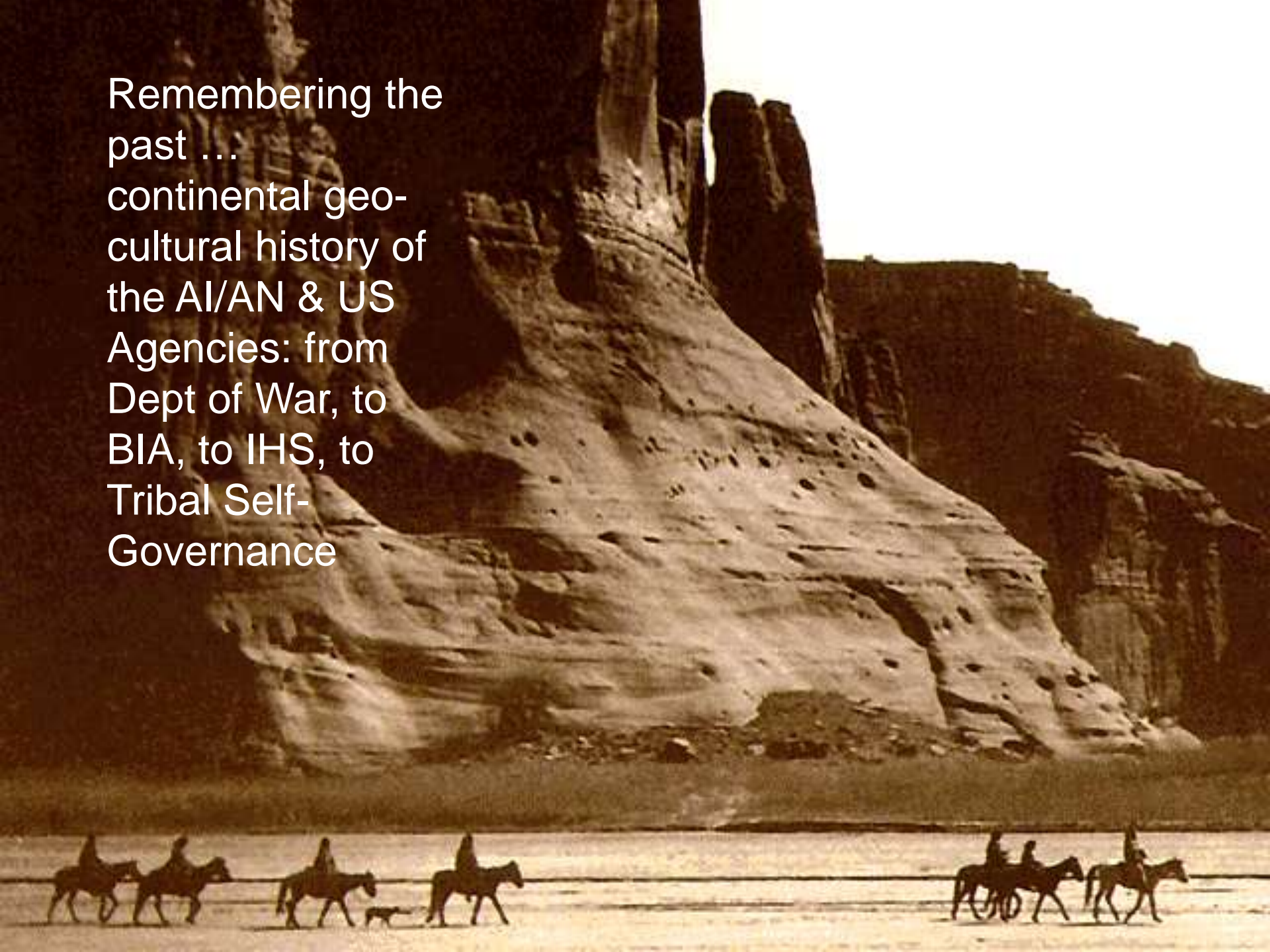
Legend


- American Indian Reservation and/or Off-Reservation Trust Land (States)
- Alaska Native Tribal Statistical Area
- Tribal Designated Statistical Area
- American Indian Reservation (Trust)
- State Designated American Indian Statistical Area
- Alaska Native Regional Corporation

International Boundary State Boundary



Remembering the
past ...
continental geo-
cultural history of
the AI/AN & US
Agencies: from
Dept of War, to
BIA, to IHS, to
Tribal Self-
Governance





American Indian Health

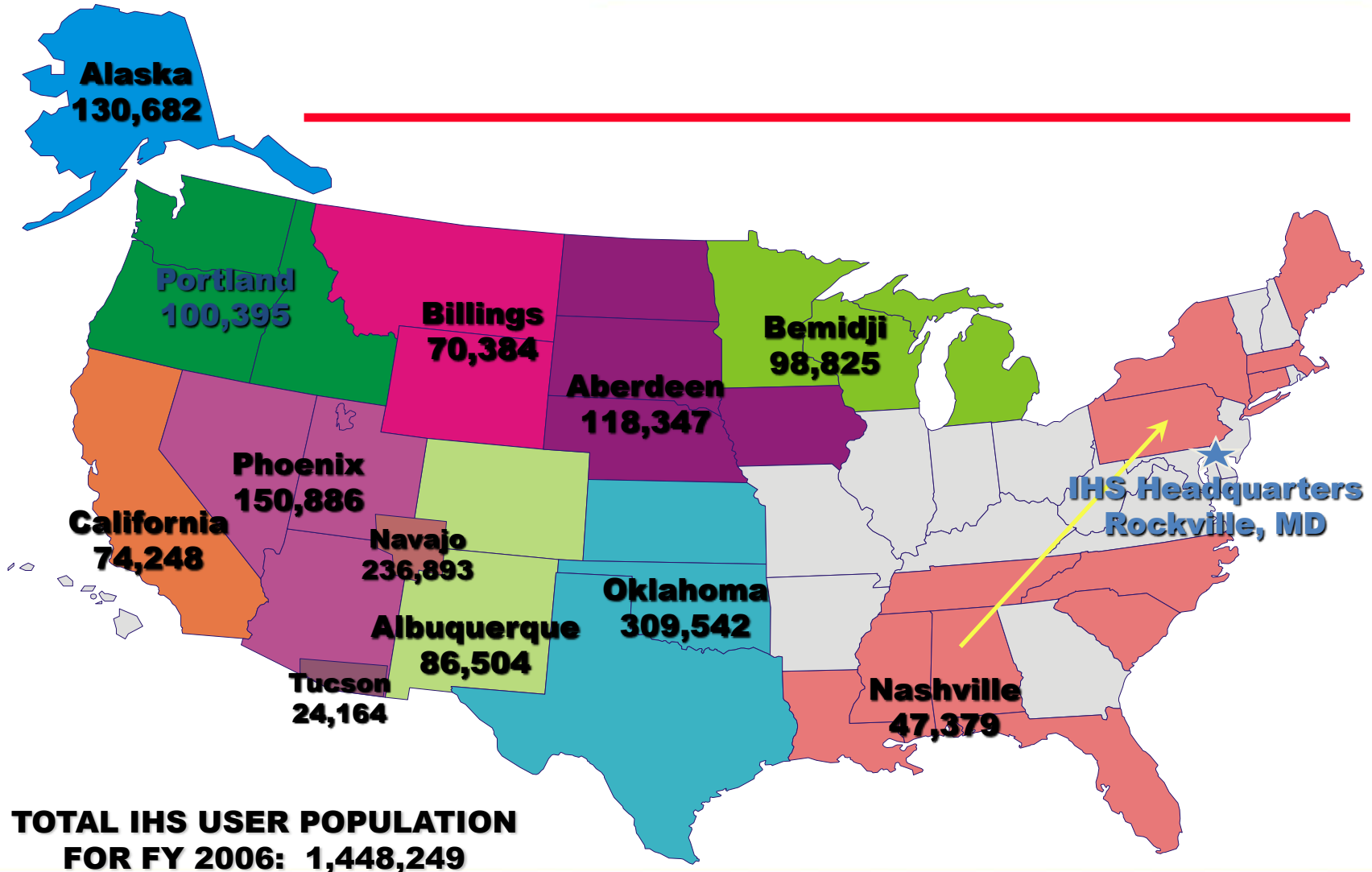
“The federal government spends less per capita on Native American health care than on any other group for which it has this responsibility, including Medicaid recipients, prisoners, veterans, and military personnel. Annually, IHS spends 60 percent less on its beneficiaries than the average per person health care expenditure nationwide.”

Source: A Quiet Crisis: Federal Funding and Unmet Needs in Indian Country

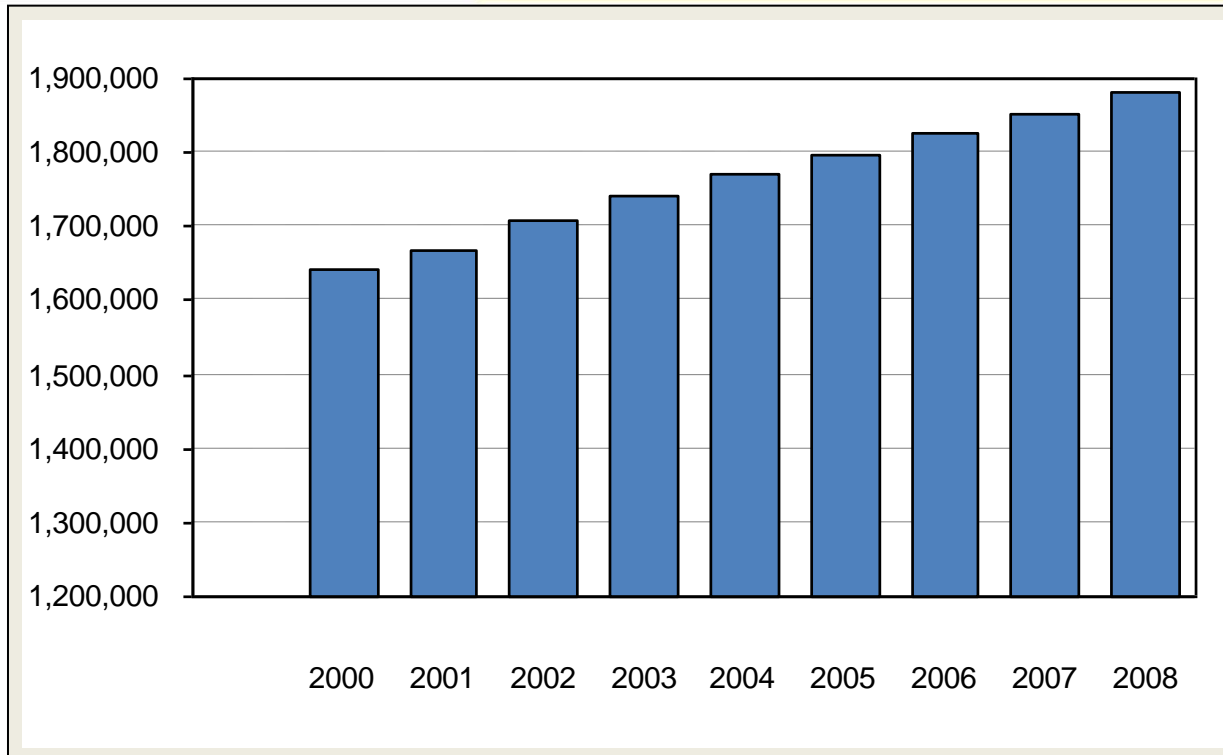
U.S. Commission on Civil Rights, 2003



IHS User Population By Area



IHS Service Population Growth



- **Average population growth rate since 2000 is 1.8% per year**
- **71% high school graduates (80% U.S.) & 10% college graduates (24% U.S.)**
- **29% of AI/ANs fall below poverty standard**
- **Unemployment is 4.0 times the US rate for males and females**
- **Less than 22% with self reported access to the Internet**

Partnership with Tribal Governments

- ◆ The Indian Self-Determination Act of 1975 includes an opportunity for Tribes to assume the responsibility of providing health care for their members, without lessening any Federal treaty obligation.
- ◆ Population HIT requires attention to complex issues of jurisdiction in any study, change, or flow

IHS

- 33 Hospitals
- 49 Health Centers
- 46 Health Stations

Tribal

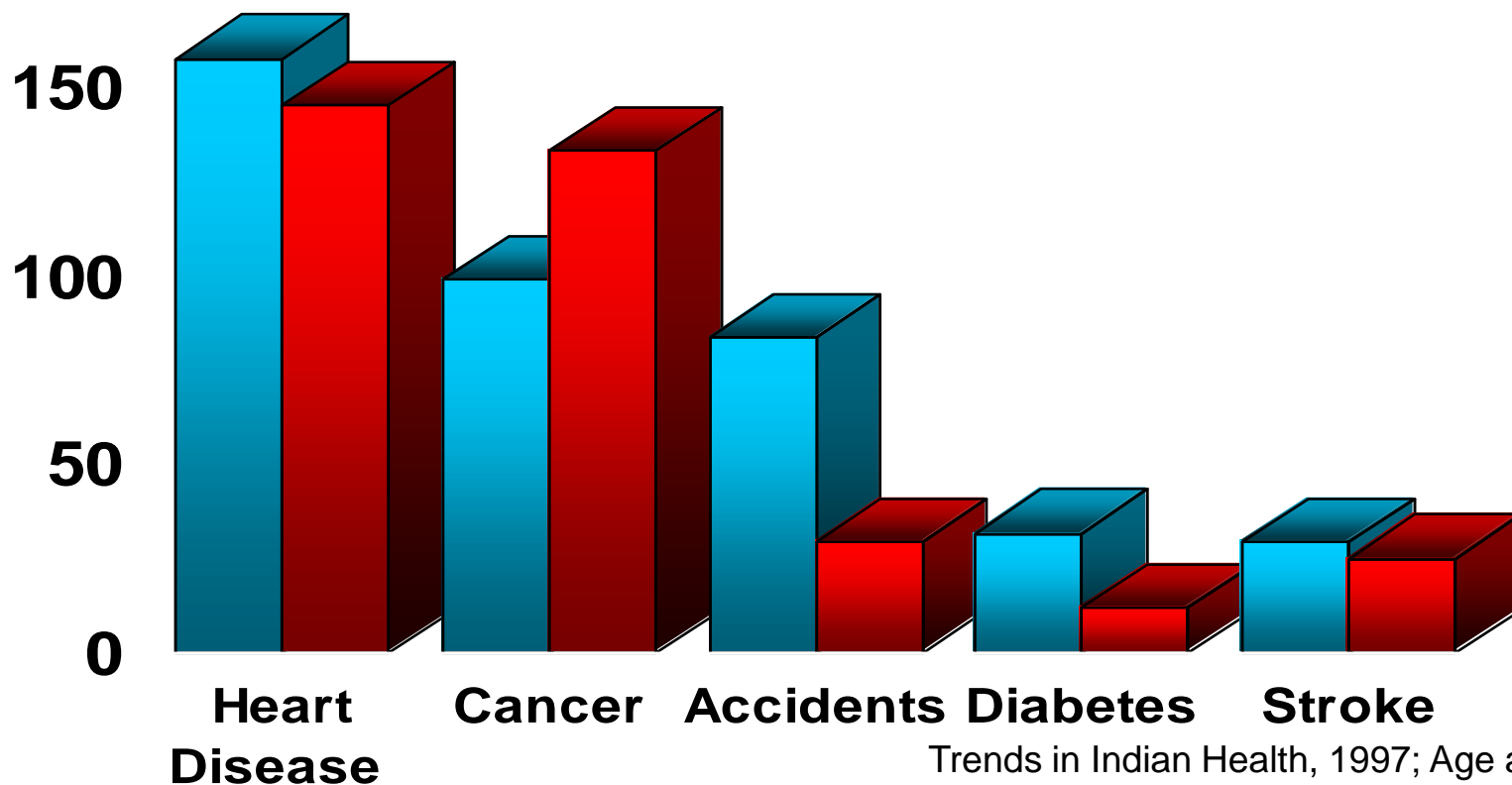
- 15 Hospitals
- 198 Health Centers
- 121 Health Stations
- 180 Alaska Village Clinics

Urban

- 34 Urban Indian Health Programs

Mortality Rates in American Indians & Alaska Natives

■ AI/AN Mortality ■ US All Races




Trends in Indian Health, 1997; Age adjusted rate per 100,000



IHS Challenges



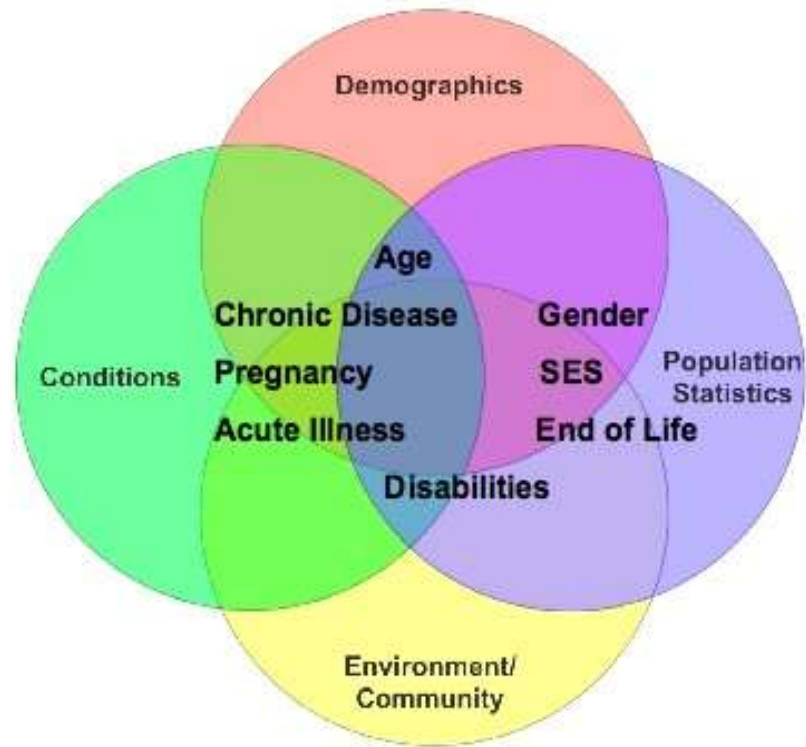
- ◆ Community Normalization/ Expectations
 - ◆ Access to Care
 - ◆ Socioeconomic status
 - ◆ Literacy and Access to Information
 - ◆ Geography
 - ◆ Transportation
 - ◆ Alcohol/Substance Abuse
 - ◆ Violence
- 

IHS Service Model: Community as the Patient

Broader Picture of Health:

- Personal Health
- Family Health
- Public Health
- Population Health
- Self-governance
- Transparency of Data

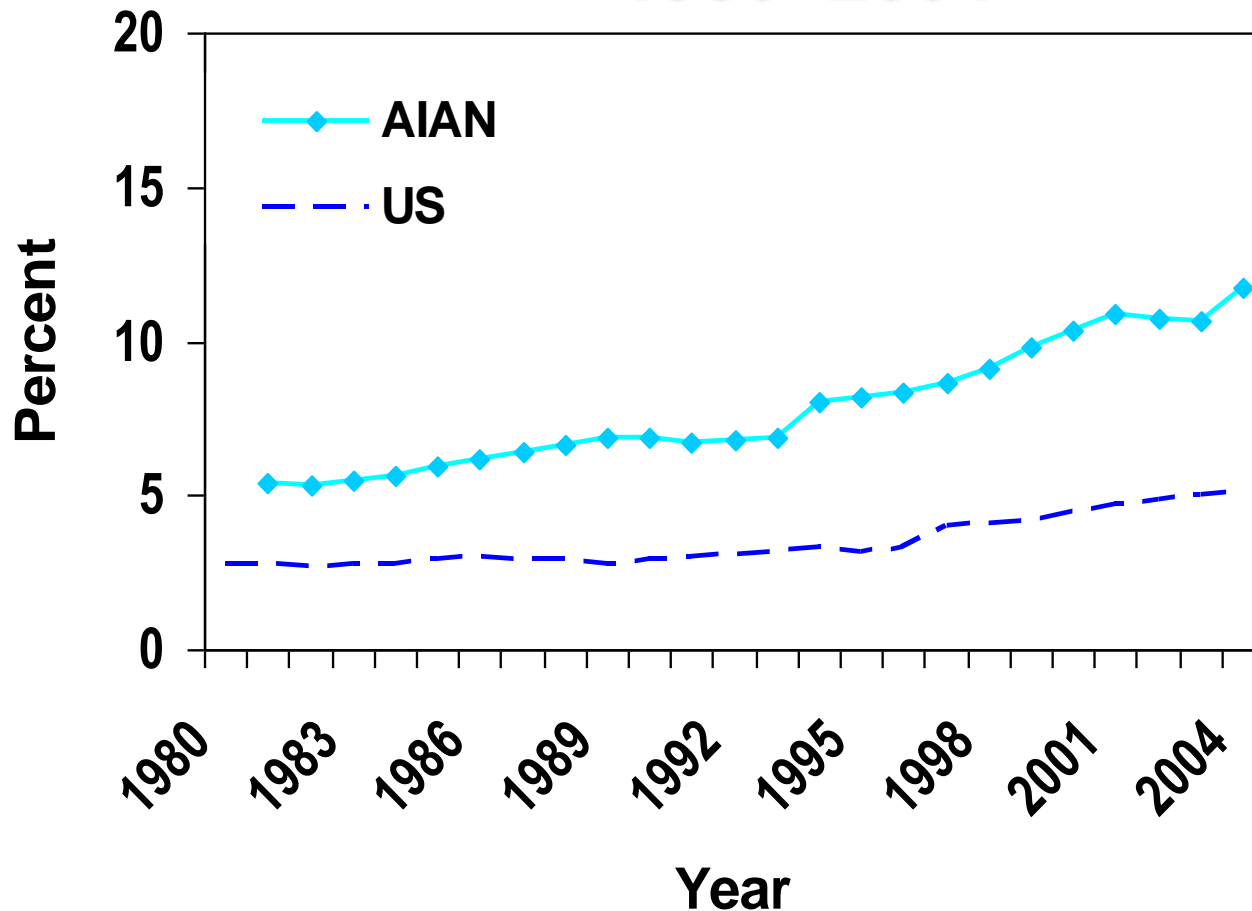
Patient and community sharing of information- demographics, environment, population data, and health conditions



Prevalence of Diagnosed Diabetes

AI/ANs compared to U.S. population

1980- 2004

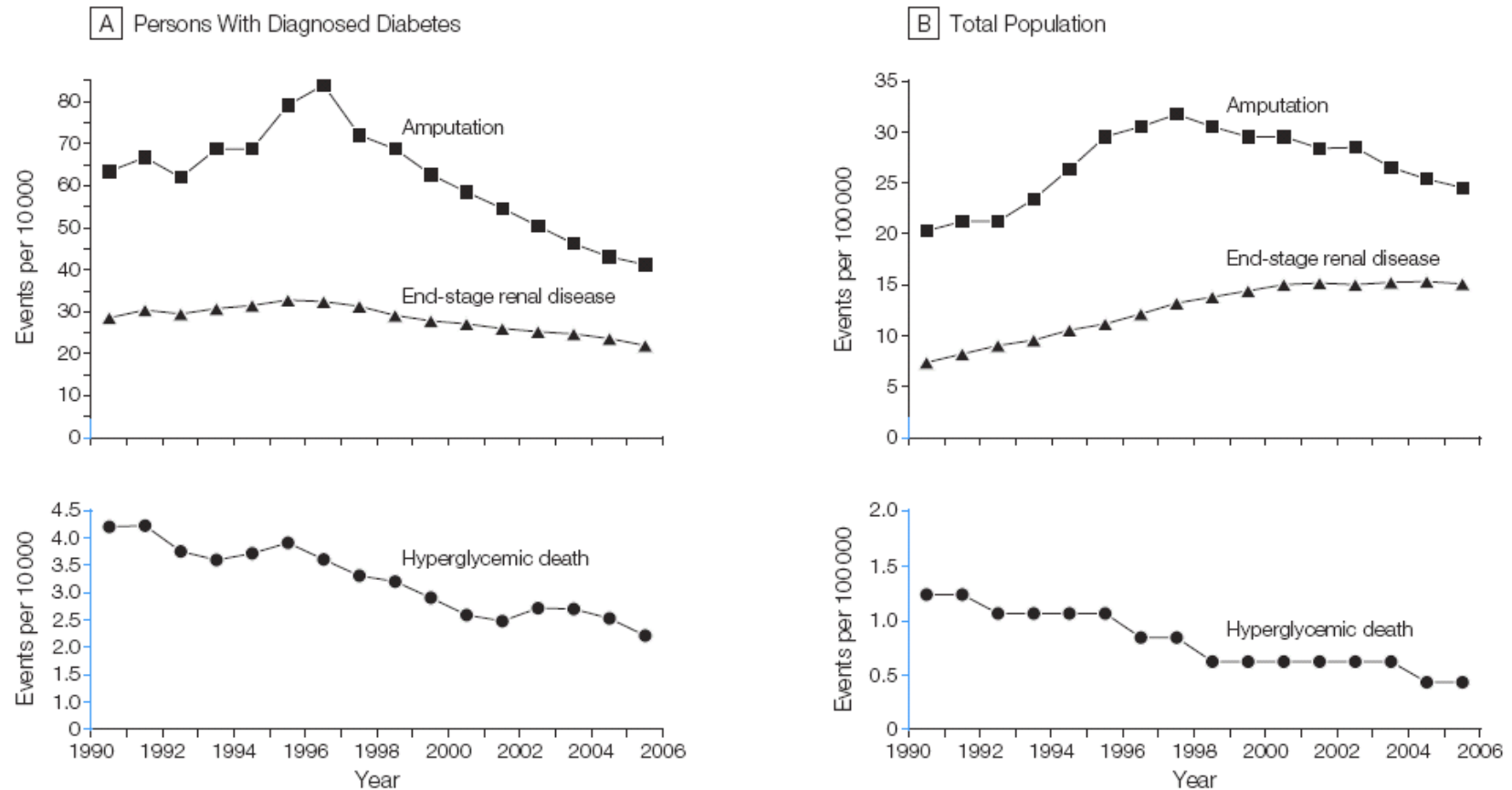


Source: IHS Program Statistics and National Diabetes Surveillance System.

Age-adjusted to the 2000 US standard population with the exception of 1981–1993 data for AI/AN, which was age-adjusted to the 1980 US standard population.

Diabetes - Translational Population Perspective

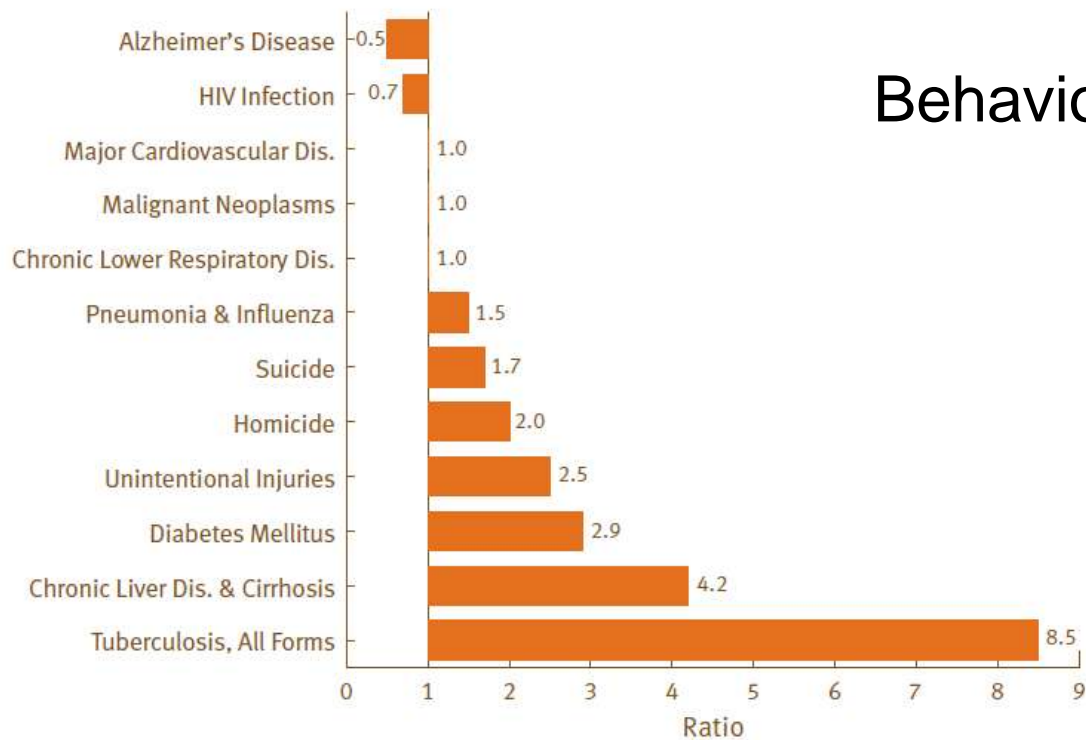
Figure. Incidence of Diabetes-Related Lower Extremity Amputation, End-Stage Renal Disease, and Hyperglycemic Death in the US Population, 1990-2005, From the US National Diabetes Surveillance System⁴



Gregg and Albright, JAMA 2009

AI/AN Relative Mortality Rates

Chart 4.11 Selected Age-Adjusted Death Rates, Ratio of American Indians and Alaska Natives (2002-2004) to U.S. All Races (2003)



Behavior matters!

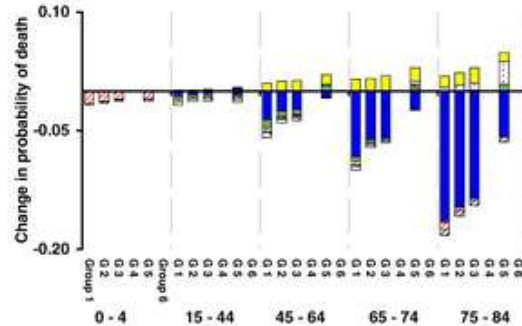
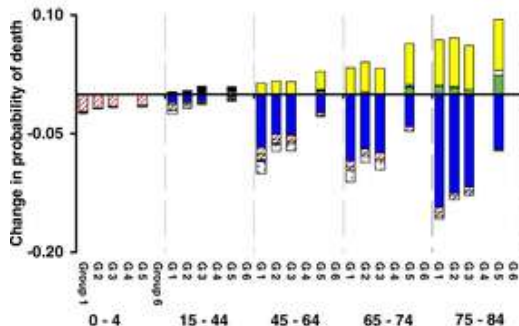
Trends in Indian Health, 2003

Community as the Patient

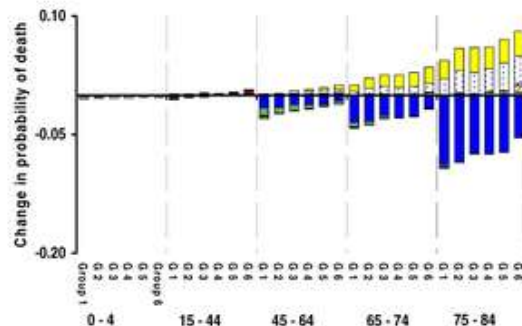
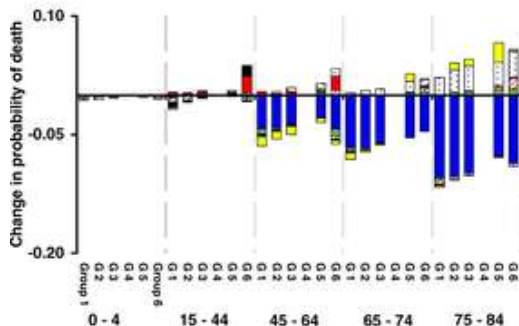
Male

Female

1961-1983



1983-1999



- Cardiovascular
- Other cancers
- HIV/AIDS
- Other communicable diseases
- Intentional injuries
- Lung cancer and COPD
- Unintentional injuries
- Diabetes and other non-communicable

Trends in All-Cause Mortality in US for two different time intervals

Ezzati et al. PLOS Medicine 2008

Salient Points



- ◆ Importance of denominators & prevention for health impact
- ◆ Denominators involve systems thinking, behavior change, addressing socio-cultural context and equity
- ◆ HIT for system change – the IHS experience of what is needed for system change
- ◆ Population health informatics a key driver

Lack of population informatics capacity as an organizational “deficiency” disease



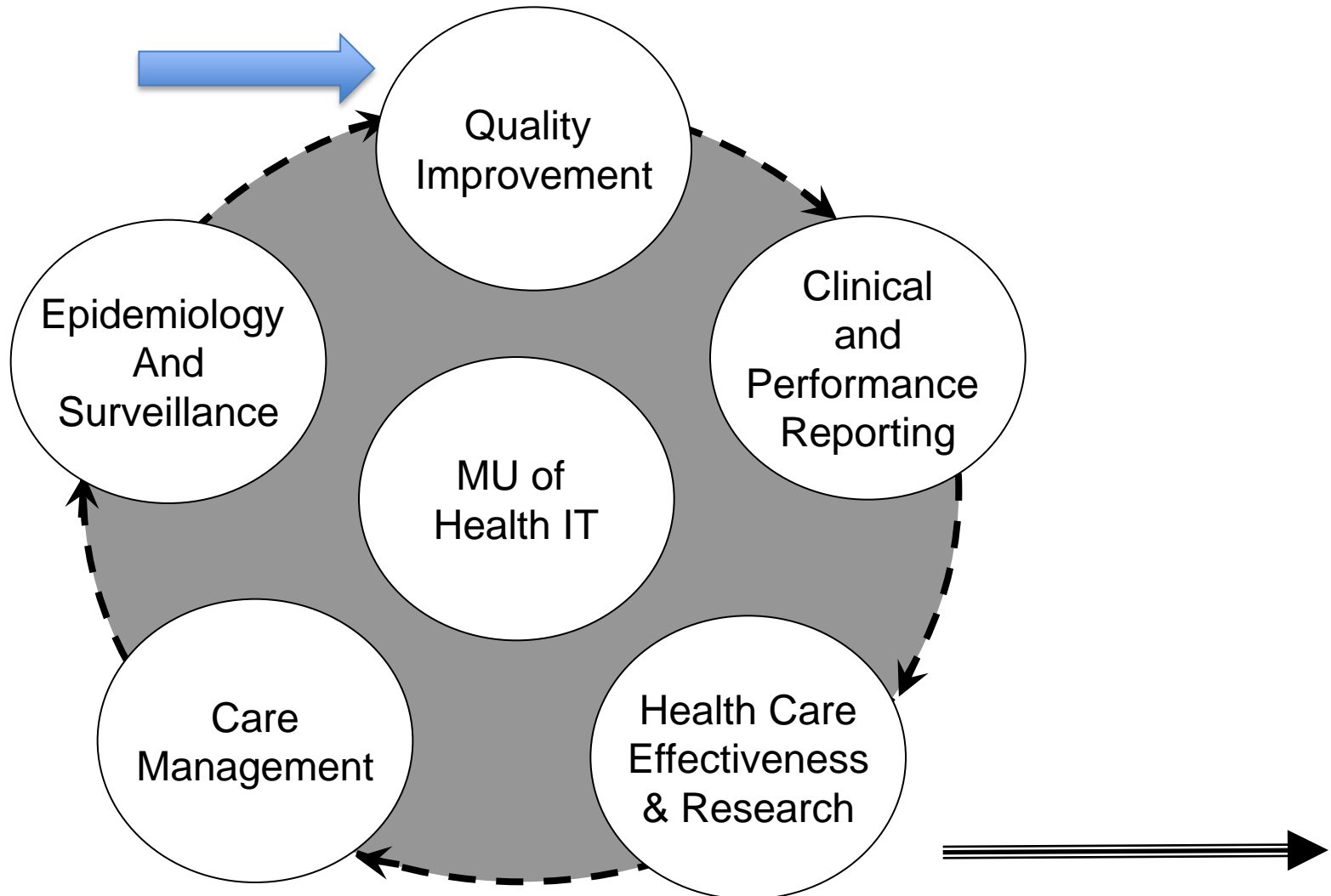
Signs and symptoms

- Data graveyards, data “black holes”
- Lots of data, little or unrelated (health system) action
- No strategic direction to leverage lots of data
- Big pipes, trickles of water
- Large amount of resource investments, little impact

Has systemic effects:


- Poor quality data fed up the chain and wreak havoc on resource allocation and decision making
- Impaired organizational sense-making
- Communities prevented from leveraging natural resource: data for decision making

IHS Population Health Informatics





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IHS Priorities

- ◆ To renew and strengthen our partnership with Tribes
- ◆ To bring reform to the IHS
- ◆ To improve the quality of and access to care,
- ◆ Ensure that our work is transparent, accountable, fair, and inclusive



IHS IPC Program

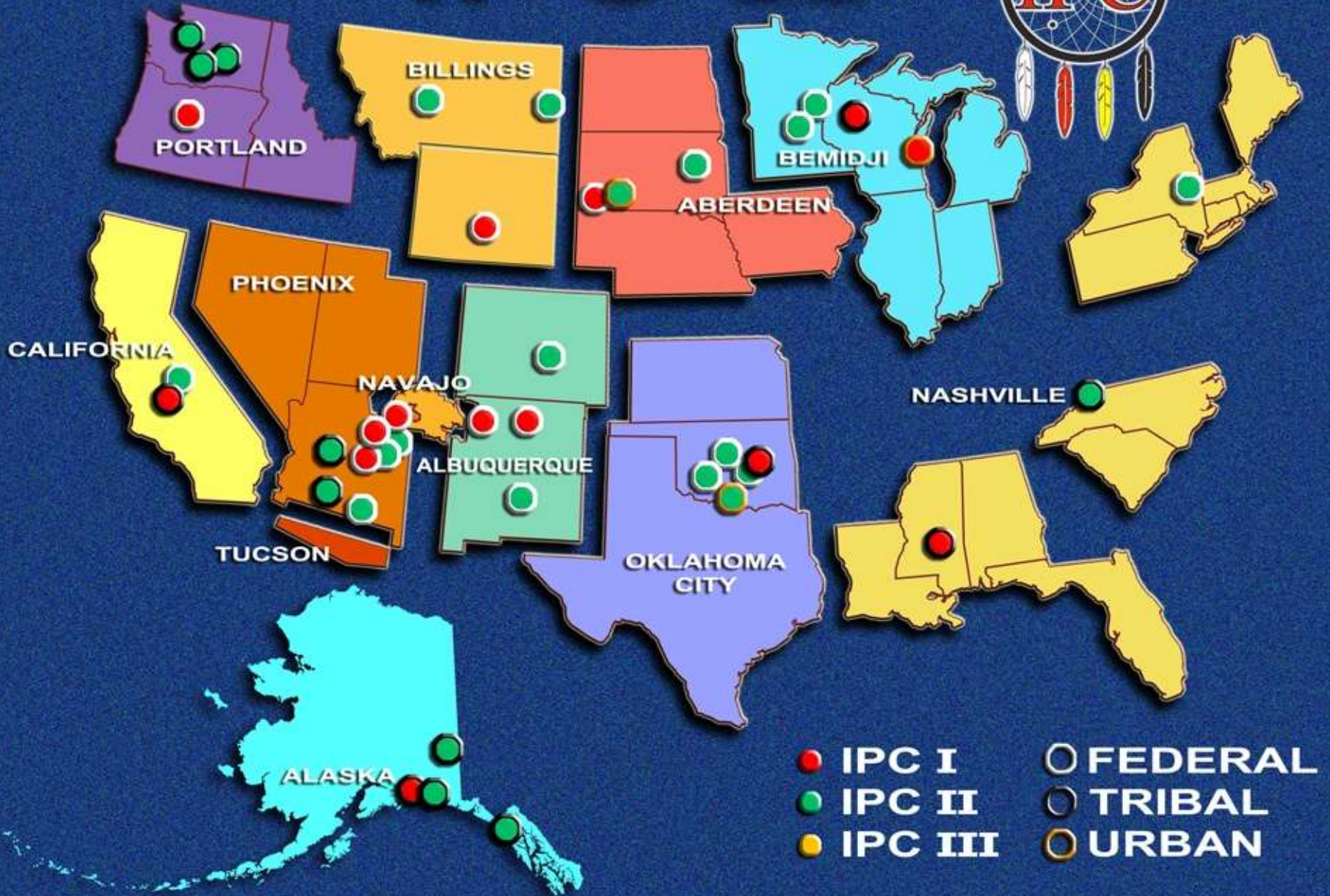


- ◆ The aim of the Improving Patient Care program is to change and improve the Indian Health system. IPC will develop high performing and innovative health care teams to improve the quality of and access to care.
- ◆ Acknowledgement – IHS National IPC Program Team led by Dr. Lyle Ignace, Director

IPC I



IPC II



- IPC I
- IPC II
- IPC III
- FEDERAL
- TRIBAL
- URBAN

IPC III



- IPC I
- IPC II
- IPC III
- FEDERAL
- TRIBAL
- URBAN

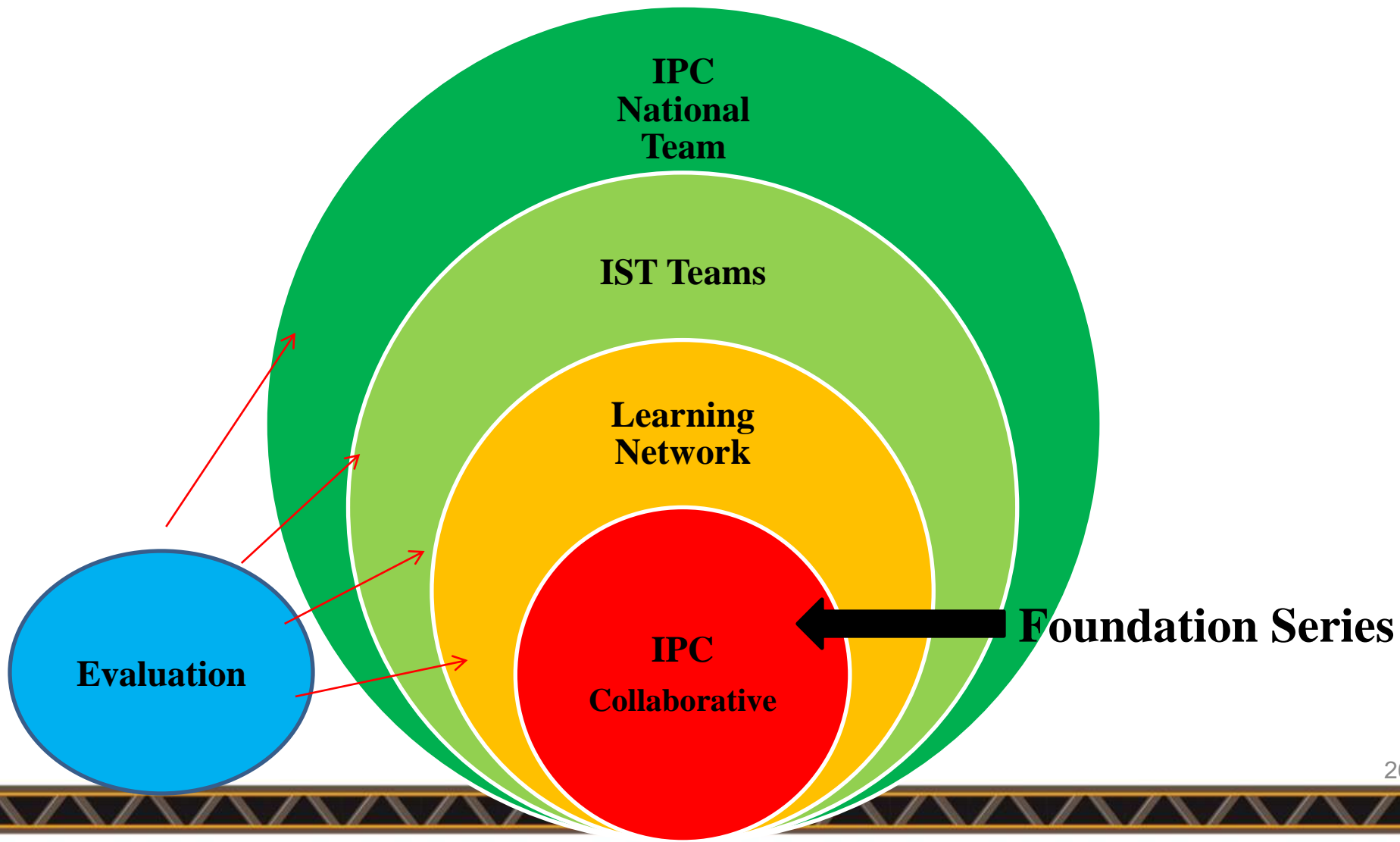


“Break Through Series” Model:

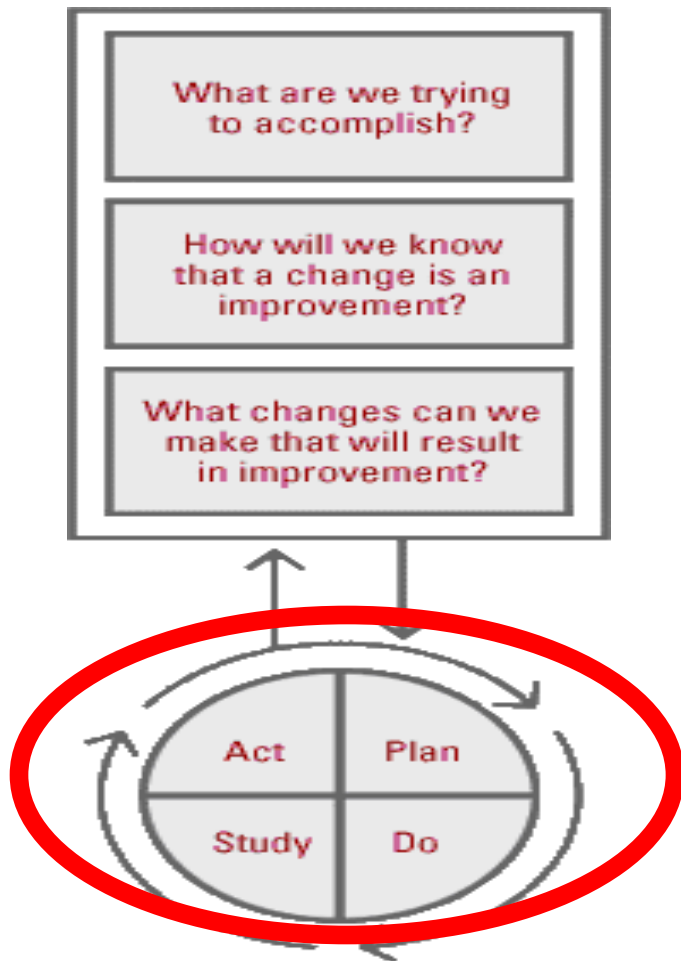
Major activities of all IPC sites:

- Teams will receive extensive training and support in attaining the skills and knowledge in applying methods for improvement.
- Five group learning sessions-
 - Two face-to-face
 - Two virtual web-ex based learning sessions
 - Knowledge gathering session
- Action orientated initiative that provides the foundation for continued improvement.

Improving Patient Care Program



Model for Improvement



The Plan-Do-Study-Act (PDSA) cycle is a process for testing a change:

(Plan) –develop a plan to test the change,

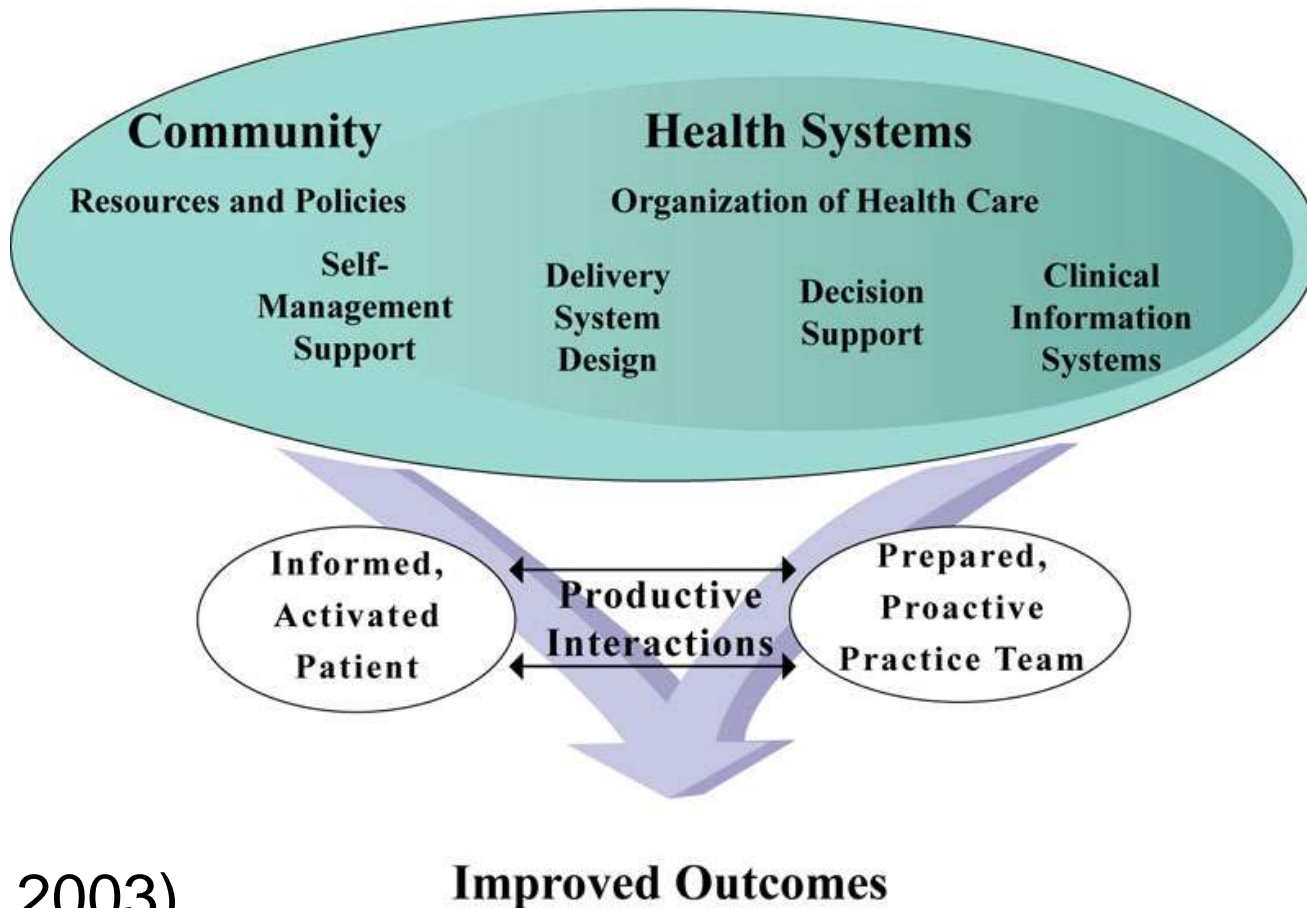
(Do)- carry out the test,

(Study) – observe and learn from the consequences,

(Act) – determine what modifications should be made to the test.

Indian Health Medical Home: based on Chronic Care Model


The Chronic Care Model



(Wagner 2003)



Assure Quality of Care

- ◆ **Health Care Organization:** Create a culture, organization and mechanisms that promote safe, high quality care among all I/T/U health programs.
 - ◆ **Community Resources and Policies:** Mobilize community resources to meet needs of patients among all I/T/U health programs.
 - ◆ **Self Management Support:** Empower and prepare patients to manage their health and health care.
 - ◆ **Delivery System Design:** Assure the delivery of care is effective, efficient for all care teams.
 - ◆ **Decision Support:** Promote clinical care that is consistent with scientific evidence and patient preferences.
 - ◆ **Clinical Information Systems:** Organize patient and population data to facilitate efficient and effective care.
- 

IPC Levels of Measurement

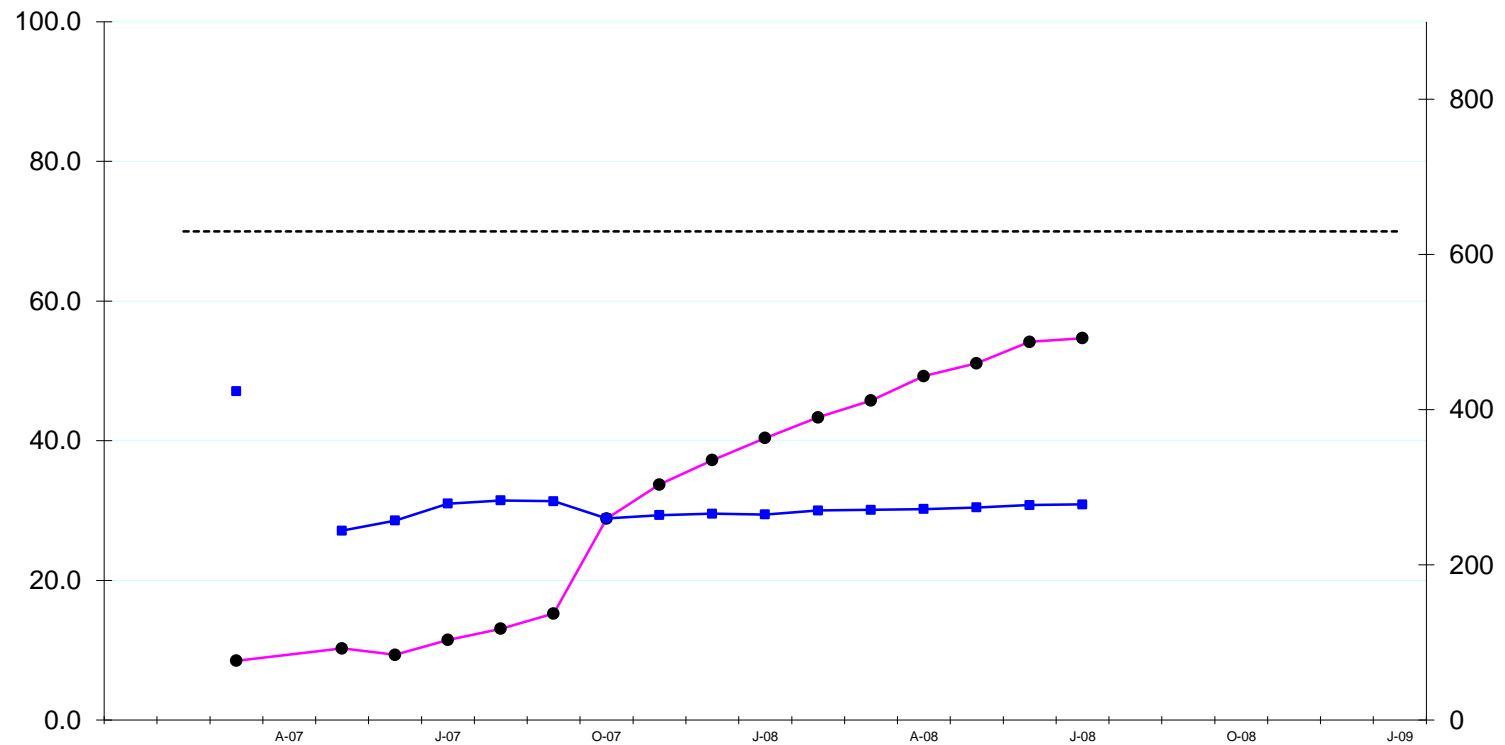
Measurement Domain	Measure Indicators
Adult: Clinical Process Measures	Adult GPRA Measures: Diabetes Comprehensive Care Cancer-related screenings Immunizations* Health Risk Assessments*
Management and Prevention of Chronic Conditions	Control Measures: Control of Blood Pressure Control of Lipids Control of A1c Tobacco Cessation Treatment* Diabetes Care Obesity assessment
Access to Care	Continuity of Care ER/UCC visits 3rd to Next Available
Patient Experience of Care	Customer/Provider/Staff satisfaction survey Single question: <i>“They give me exactly the help I want (and need) exactly when I want (and need) it.”</i>

<u>Measurement Domain</u>	<u>Areas of Focus/Coverage</u>	<u>Core Measure(s)</u>	<u>Goal</u>	<u>Notes</u>
Clinical Prevention	Keeping current on preventive screenings	Health Risk Assessment: BMI, Tobacco Screening, DV/IPV Screening, Depression Screening, Alcohol misuse screening, Blood Pressure.	80%	
	Keeping current on cancer screening	Cancer Screening: Colorectal Cancer Screening, Cervical Cancer Screening, Breast Cancer Screening.	70%	
Management and Prevention of Chronic Conditions	Control of Blood Pressure Control of Lipids Control of Diabetes	Outcomes: Control of Blood Pressure. Control of Lipids, Control of Diabetes.	70%	
	Diabetes Care	Diabetes Comprehensive Care	70%	
	Chronic illness and Cancer Prevention	Tobacco Users (18 and older)		Meaningful Use
		Tobacco Users Cessation Visit in last 2 years	70%	Meaningful Use
Costs	Workforce	Staff Satisfaction		Survey Quarterly
Patient Experience	Experience and Efficiency	Average Office Visit Cycle Time	45 minutes	
		Patient Experience: Single question with site specific questions		
	Building Relationships for Care	Percent of Patients Empanelled to a Primary Care Provider	90%	
		Number of patients in the Microsystem	See guidance	
		Continuity of Care to a Primary Care Provider	80%	
	Access	Third Next Available Appointment to a Medical Provider	0 days	Weekly
	Patient Activation	Percent of Patients with Self Management Goal	70%	

IPC "Microsystem" A

Colorectal Cancer Screening

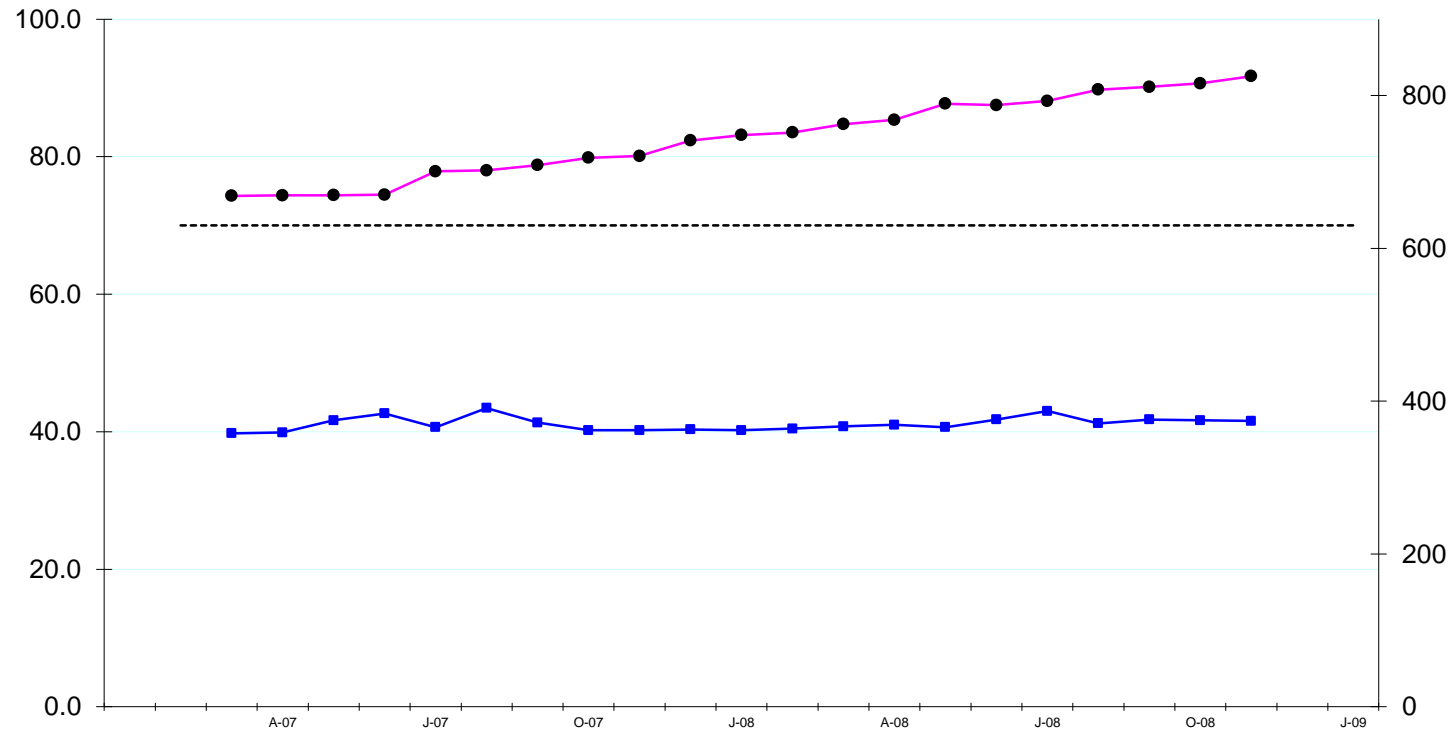
IPC II – Team A



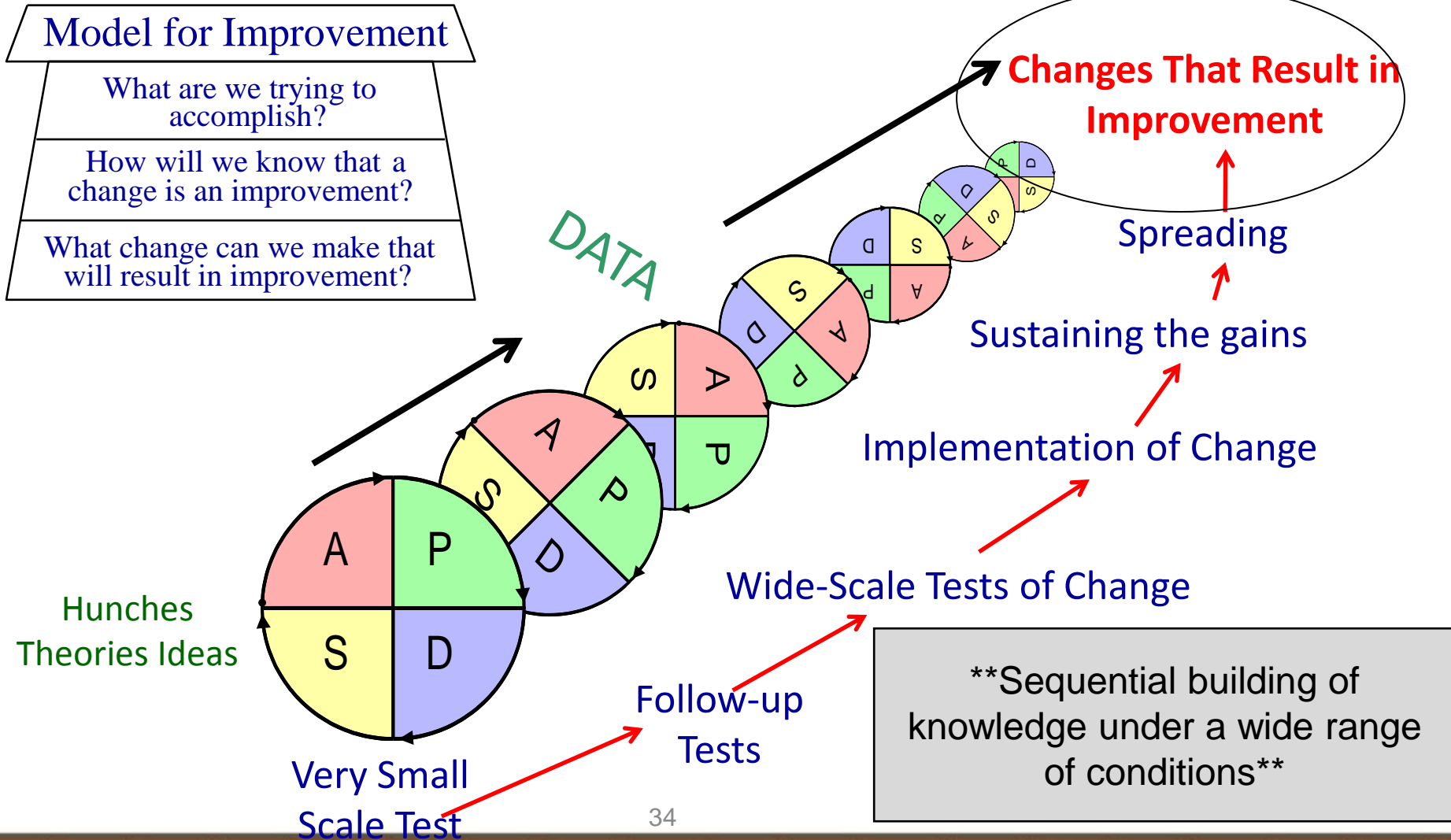
IPC "Microsystem" B

Colorectal Cancer Screening

IPC II – Team B




PDSA Cycle for Microsystems: Data is the Fuel!



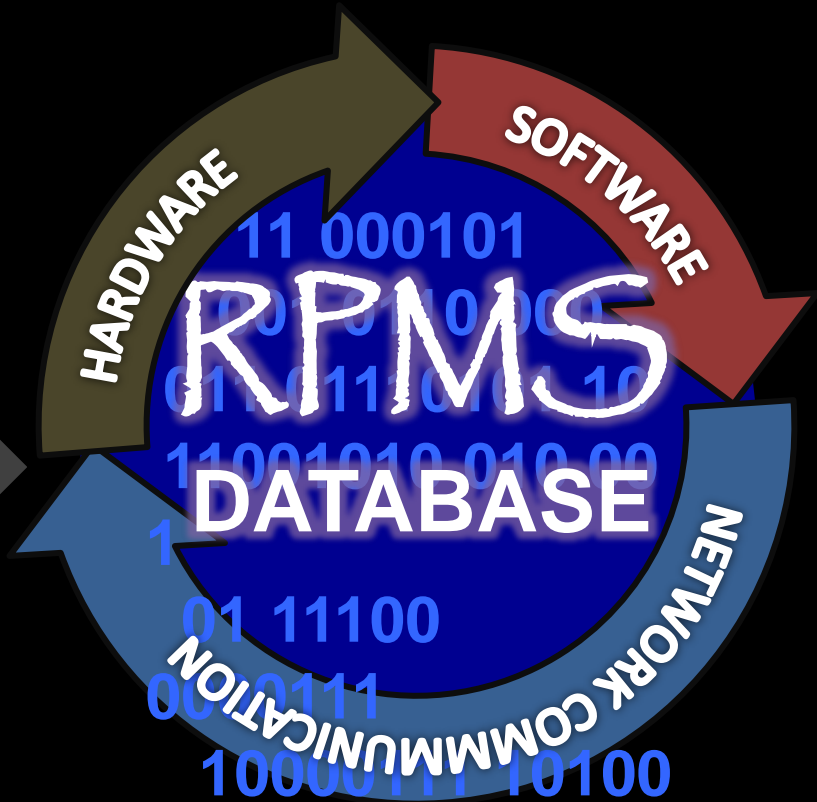


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Resource and Patient Management System




11 000101
01 10 000
01 101110 10
11001010 010 00
1
01 11100
1110111
1000111 10100
1100 0 0101 1
00 11110
00 11110



Resource & Patient Management System



- ◆ IHS Health Information Solution since 1984
 - ◆ RPMS is an integrated Public Health information system
 - iCare – Named 2011 “Laureate” by The Computerworld Honors Program
 - EHR – Certified in April of 2011 for both inpatient and outpatient
 - Award Winning - Davies Award/ Best of Government IT award
 - Composed of over 60 component applications
 - Facilitates patient, provider, community and population health perspectives
 - Patient and Population based clinical applications
 - Patient and Population based practice management applications
 - Financially-oriented administrative applications
- 

Typical RPMS Legacy Interface

RPMS Enter RPMS for username, no password.

- CIL Current Inpatient Listings
- CMS Case Management System ...
- CONS Consultation Menu ...
- DM Diabetes Management System ...
- FORM PIMC Provider Formulary Inqui
- GU Group update of consult/proce
- HS Generate Health Summary
- ICD ICD-9 Auto-Coding System ...
- LAB Laboratory Reports ...
- LWTS Print Patient List by Ward an
- MAN PCC Management Reports ...
- MEDP Medication Profile
- MINI Mini-Patient Display
- NOSH Appointment No-Show List for
- PI Patient Inquiry
- PIC Provider's Incomplete Charts
- PLS INPATIENT Listing by Service
- QMAN Q-Man (PCC Query Utility)
- RAD Radiology Look-up/Order Menu
- RCIS Referred Care Information Sys
- RPT Consult Tracking Reports ...
- SD Scheduling Menu ...

Press 'RETURN' to contin

RPMS Enter RPMS for username, no password.

RCIS REFERRAL RECORD

DATE: MAY 15, 2008 NUMBER: 6066010811131 PATIENT: DEMO, FIVE

REQUESTING FACILITY: PHOENIX INDIAN MED CTR

REQUESTING PROVIDER: HAYS, HOWARD

REFERRAL TYPE: CHS PRIMARY PAYOR: IHS

TO PRIMARY VENDOR: UNSPECIFIED

Do you wish to view a Face Sheet? N View Health Summary? N

INPATIENT/OUTPATIENT: OUTPATIENT

PURPOSE OF REFERRAL: Stress Test

PRIORITY: 1

Are You Sending Additional Medical Information With Patient? NO

ICD DIAGNOSTIC CATEGORY: CARDIOVASCULAR DISORDERS

CPT PROCEDURE CATEGORY: EVALUATION AND/OR MANAGEMENT

Notes to Appointment Scheduler:

Exit Save Refresh

Enter a command or '^' followed by a caption to jump to a specific field.

COMMAND: Press <PF1>H for help

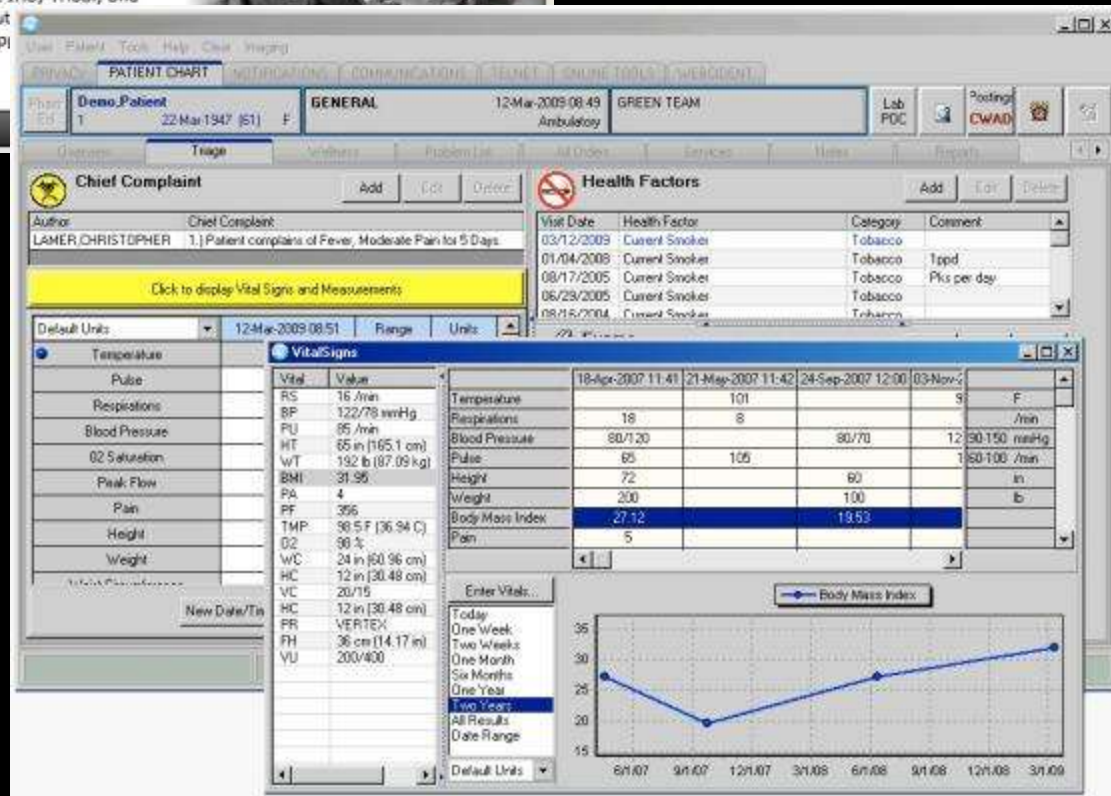
Electronic Health Record Patient Centric GUI



The RPMS Electronic Health Record is transforming health care at IHS, Tribal, and Urban Indian health facilities. Visit the EHR website to learn about technology and see how EHR and other RPMS innovations can support health care, decision support, and performance assessment.

Go To: [RPMS Electronic Health Record](#)

Diabetes Quality of Care EHR Epidemiology



PATIENT CHART

Phon: 1 Demo Patient GENERAL 12-Mar-2009 08:49 GREEN TEAM Lab POC Posting CWAD

Chief Complaint

Author: LAMER, CHRISTOPHER Chief Complaint: 1.) Patient complains of Fever, Moderate Pain for 5 Days

Health Factors

Visit Date	Health Factor	Category	Comment
03/12/2009	Current Smoker	Tobacco	
01/04/2008	Current Smoker	Tobacco	Topd
08/17/2005	Current Smoker	Tobacco	Pks per day
06/29/2005	Current Smoker	Tobacco	
08/16/2004	Current Smoker	Tobacco	

Vital Signs

Vital	Value
RS	16 /min
BP	122/78 mmHg
PU	85 /min
HT	65 in (165.1 cm)
WT	192 lb (87.09 kg)
BMI	31.95
PA	4
PF	356
TMP	98.5 F (36.94 C)
O2	98 %
wC	24 in (60.96 cm)
HC	12 in (30.48 cm)
VC	20/15
HC	12 in (30.48 cm)
PR	VERTICAL
FH	36 cm (14.17 in)
VU	200/400

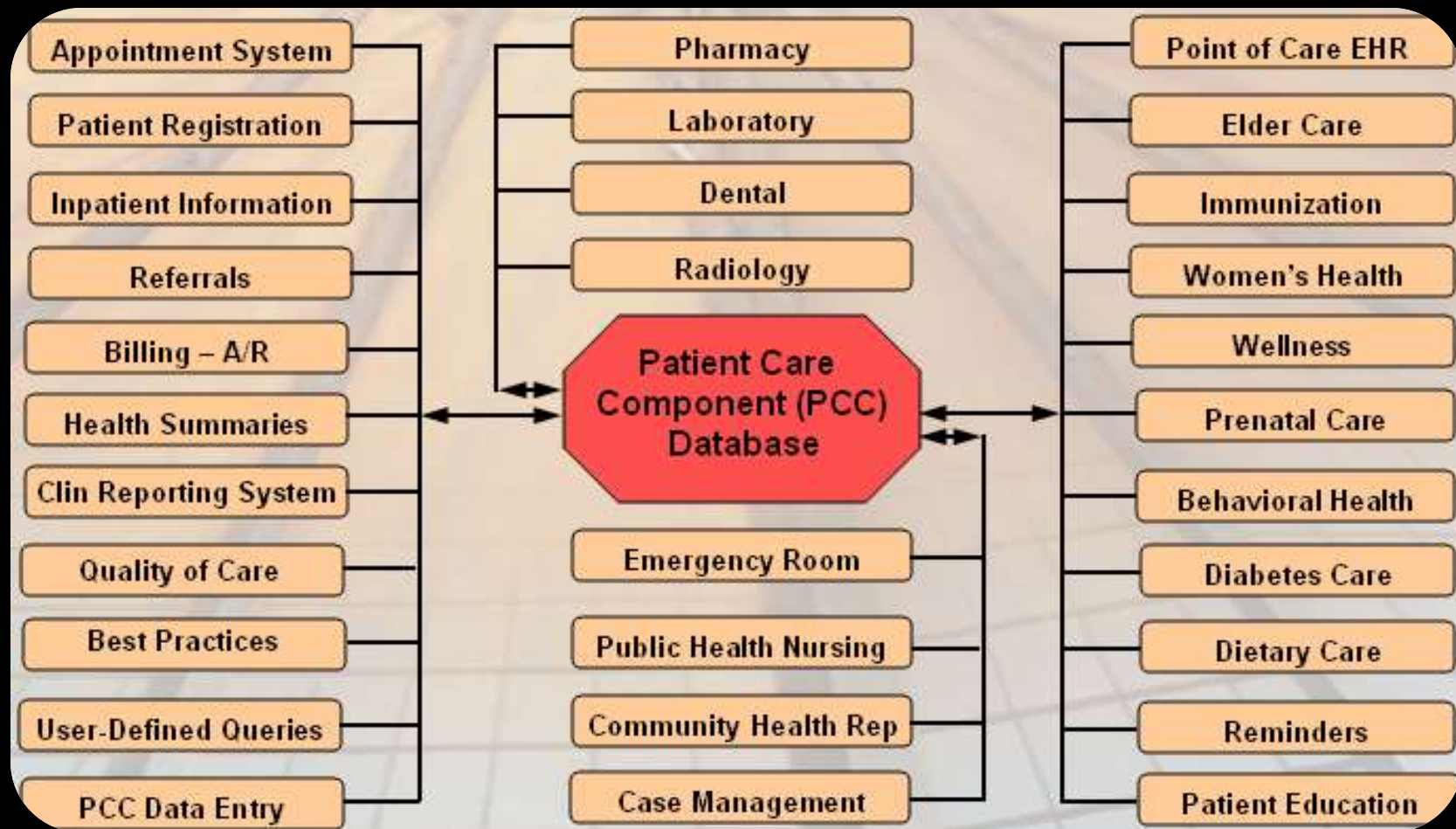
Body Mass Index Graph

Date	Body Mass Index
18-Apr-2007 11:41	27.12
21-May-2007 11:42	19.53
24-Sep-2007 12:00	27.12
03-Nov-2007	31.95

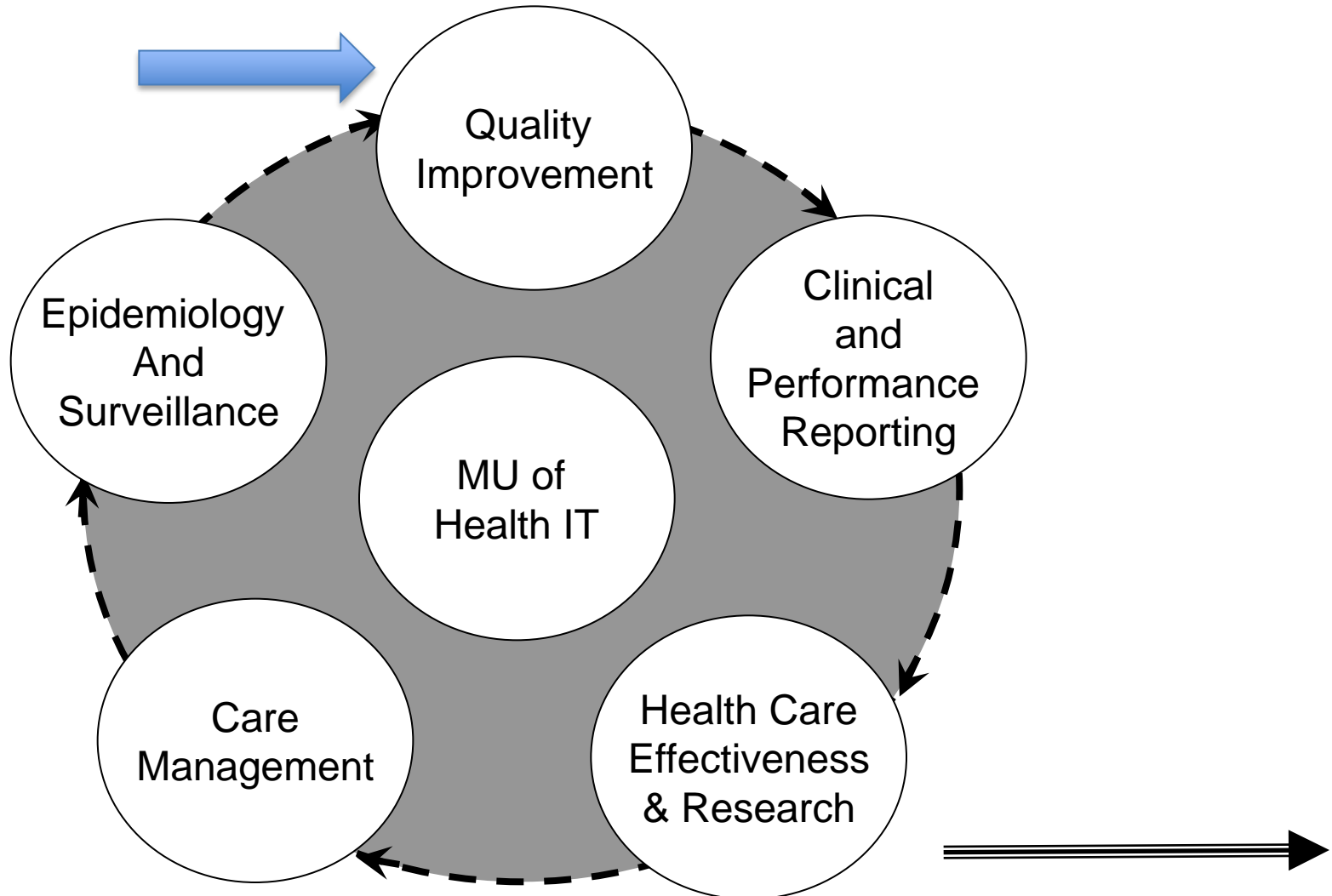
CCHIT
CERTIFIED

Ambulatory
EHR
2007

RPMS: Patient Care Component



IHS Population Health Informatics

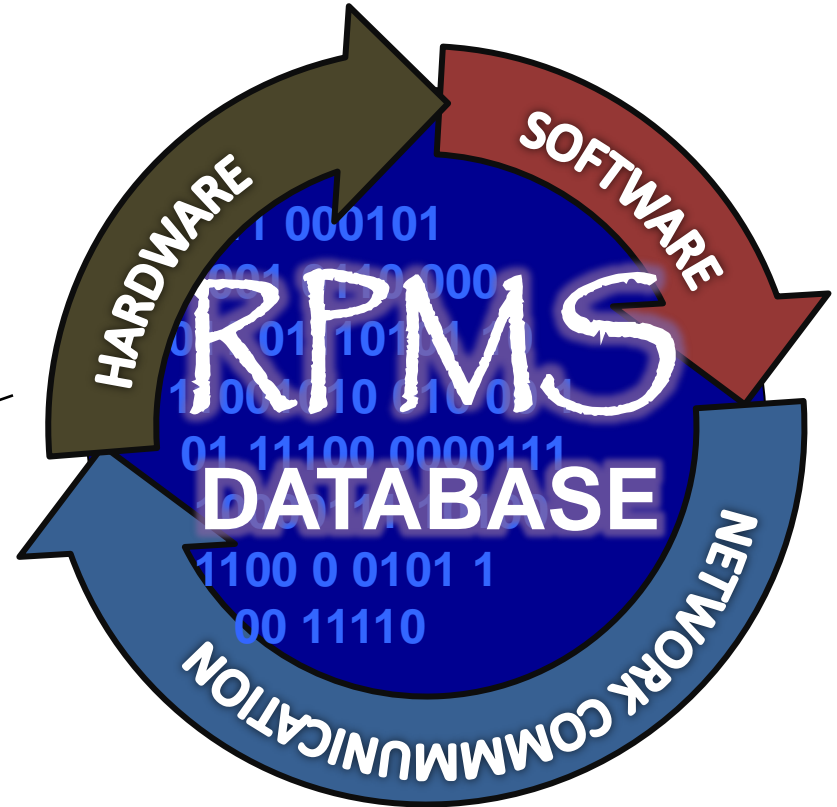


IHS Population Health Applications

Resource and Patient Management System/EHR



- ◆ iCare – PCMH, Pop Health
- ◆ Clinical Reporting System
- ◆ CANES, H1N1 Surveillance
- ◆ CMET – Event Triggers
- ◆ Immunization Module
- ◆ NDW + Clinical Repositories



iCare – The IHS Tool for Population Management

RPMS iCare - GEBREMARIAM,CINDY - 2010 DEMO HOSPITAL

File Edit View Tools Window Help Quick Patient Search:

Panel List Flag List Community Alerts CMET

New Open Delete Repopulate Modify Share Copy

Panel Name	Panel Description	# of Pts	Last Updated	Last Updated By	Owner
Active Diabetics > 50	Big Cove	146	Oct 27, 2010 10:55 AM	GEBREMARIAM,CINDY	GEBREMARIAM,C
smokers		15	Oct 27, 2010 10:55 AM	GEBREMARIAM,CINDY	GEBREMARIAM,C
asthma folks		34	Oct 27, 2010 10:55 AM	GEBREMARIAM,CINDY	GEBREMARIAM,C
babies		36	Oct 26, 2010 06:50 PM	GEBREMARIAM,CINDY	GEBREMARIAM,C
breast ultrasounds 2010	Selected patients panel created 10/13/2010 by GEBREMARIAM				
CBE folks	Selected patients panel created 10/21/2010 by GEBREMARIAM				
Copy of Sensitive patients					
CVD Known					
DM and HTN					
FOBT 2 years	Selected patients panel created 10/14/2010 by GEBREMARIAM				
general clinic	visit last 30 days				
HIV all					
HMS Register					
IXProvider, Amber	Women over 20 w/ Asthma				
Lori Provider Events2010	Selected patients panel created 10/14/2010 by GEBREMARIAM				
Obese Children	2-18				
Tracked Pap Smears	Selected patients panel created 10/7/2010 by GEBREMARIAM				

iCare Community Alerts

Community Alerts from Sep 27, 2010 to Oct 27, 2010

COMMUNITY ALERTS

Community Alerts provide deidentified visit data related to high-profile diagnoses that occurred within the past 30 days and may affect other patients in community. The Alert categories are:

1. CDC Nationally Notifiable Infectious Diseases (CDC NND)
2. Suicidal Behavior Related Incidents
3. Public Health Alerts

Community	Type	Diagnosis	Cases Past 30 Days	Cases Yesterday	Most Recent Occurrence
32-HNDRD ACR	Suicidal Behavior	Ideation	1		Oct 20, 2010
BIG COVE	CDC NND	Chlamydia	1		Sep 30, 2010
		Cholera	1		Sep 30, 2010
		Giardia	2		Oct 20, 2010
		HIV/AIDS	2		Oct 23, 2010
		Valley Fever	1		Oct 16, 2010
		ILI	3		Oct 20, 2010
		Ideation	2		Oct 20, 2010
		Botulism, foodborne	1		Sep 30, 2010
		HIV/AIDS	1		Oct 19, 2010
		Rocky Mountain Spotted	3		Oct 20, 2010
		Sunhilis: Primaru	2		Oct 20, 2010

Panel creation and population-based alerts and reasoning

Selected Rows: 1 Visible Rows: 25 Total Rows: 25

iCare Population Management

- ◆ Provides an intuitive, integrated view into diverse patient data elements for populations as well as individuals
- ◆ Facilitates the proactive identification and management of populations
- ◆ Supports easy creation and customization of panels of patients
- ◆ Nationally deployed in May 2007
- ◆ Iterative, phased development
- ◆ Active workgroup, change control board and Subject Matter Expert involvement

How iCare Fits in the RPMS World

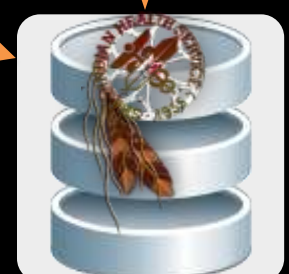
iCare

Name	Panel Description	# of Pts	Last Updated	Last Updated By	Owner
Diabetic > 50	Big Cove	14	Jul 27, 2011 11:05 AM	JARVIS.PATRICK	JARVIS.PATRICK
WH Visits in past year		7	Jul 27, 2011 11:05 AM	JARVIS.PATRICK	JARVIS.PATRICK
Active	1/1/2010 - 3/1/2010	309	Mar 17, 2011 11:40 AM	JARVIS.PATRICK	JARVIS.PATRICK
10 Inactive Female	1/1/2010 - 3/1/2010	312	Mar 17, 2011 11:31 AM	JARVIS.PATRICK	JARVIS.PATRICK
Active patients Big Cove		12	Jul 27, 2011 11:05 AM	JARVIS.PATRICK	JARVIS.PATRICK
Allergies	Dr. St. Cyr's Allergy Patients	2	Feb 15, 2011 03:56 PM	ST CYR,DONNA	ST CYR,DO
Proposed Patients		2	May 26, 2011 11:20 AM	JARVIS.PATRICK	JARVIS.PATRICK
demo		567	May 06, 2011 02:22 PM	JARVIS.PATRICK	JARVIS.PATRICK
and under		14	Jul 27, 2011 11:07 AM	JARVIS.PATRICK	JARVIS.PATRICK
Selected patients panel created on 10/27/2010 by KELSEY,JOANNA		52	Oct 27, 2010 02:45 PM	KELSEY,JOANNA	KELSEY,JOANNA
Count		25,458	May 07, 2010 03:17 PM	JARVIS.PATRICK	JARVIS.PATRICK
Diabetes	Proposed or Accepted Tag	2,221	Jun 28, 2011 12:53 PM	JARVIS.PATRICK	JARVIS.PATRICK
Elders		129	Jun 04, 2010 07:52 AM	ACORD,ARLIS L	ACORD,ARLIS L

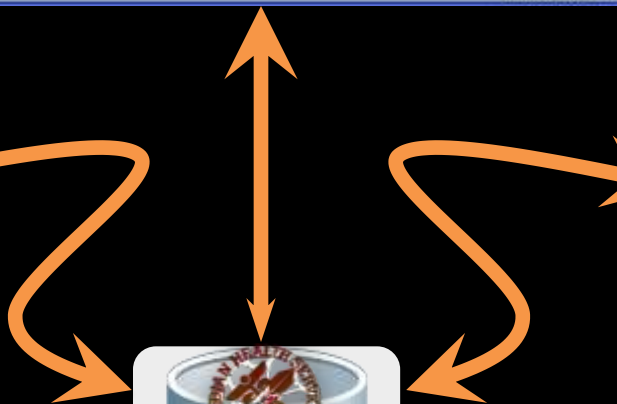
PCC



EHR



RPMS





iCare and PCMH 2011

PCMH 1: Enhance Access and Continuity

- Provides method to designate PCP
- Create care teams
- Monitor appointment wait times and office visit times

PCMH 2: Identify and Manage Patient Populations

- Create defined panel lists
- Create and distribute reminders
- Use of disease/condition-specific registries
- Use of diagnostic tags
- Provides demographic information
- Facilitates Community Health Rep outreach

PCMH 3: Plan and Manage Care

- Access to RPMS data from various system components
- Plan care through use of reminders
- Provides risk factor assessment
- Facilitation of care management
- Monitor continuity of PCP and team care
- Includes robust behavioral health care components
- Care plan functionality under development

PCMH 4: Provide Self-Care Support and Community Resources

- Provide summary care pages and reports
- Referral to IHS online resources
- Facilitates Community Health Rep outreach

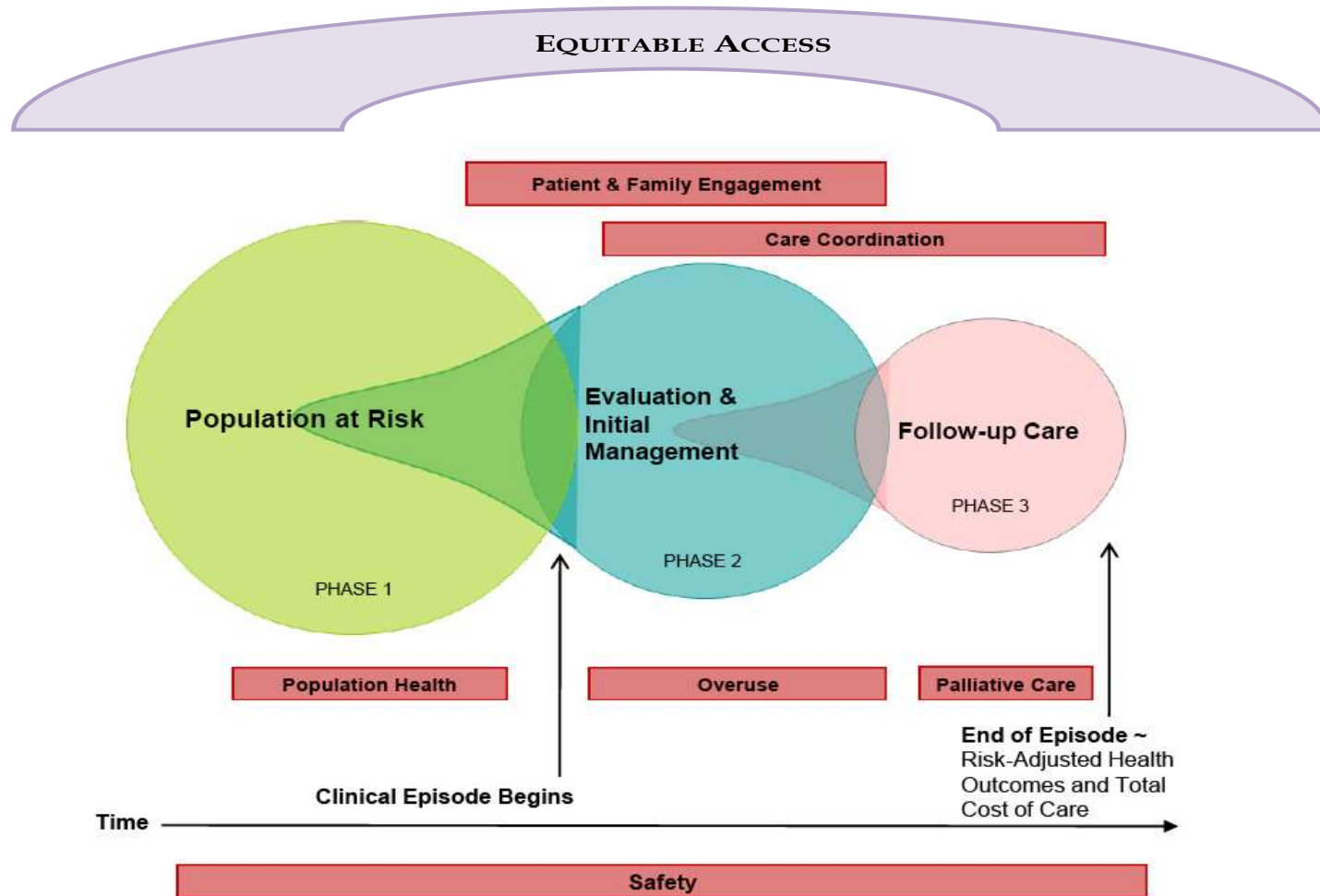
PCMH 5: Track and Coordinate Care

- Create care teams
- Create defined panel lists
- Create and distribute reminders
- Monitor continuity of PCP and team care

PCMH 6: Measure and Improve Performance

- National Measures, GPRA, MU, IPC
- Provider/team/facility-level measurements
- Monitor ER and UC usage
- Monitor local patient satisfaction

Integrated Framework for Performance Measurement





IHS Quality of Care



- ◆ The IHS posts measures of quality on its “Quality of Care” website for federally operated facilities.
- ◆ Quality measurement by health condition, facility, and overall IHS standings encourage accountability and promote patient participation.
- ◆ Current reporting streams include:
 - ACOs 65 measures, 14 measures for value-based purchasing, MU 44 EP measures + 15 hospital measures, 38 GPRA measures, UDS reporting measures, and IPC 3.0 and 4.0 quality measures



What Does IHS Measure?

- ◆ Improving Patient Care
- ◆ Meaningful Use Measures
- ◆ National Programs:
 - Diabetes
 - Dental
 - Immunizations
 - Cancer Screening
 - Behavioral Health
 - Cardiovascular Disease
 - Prenatal HIV Screening
- ◆ Composite measures, including
 - Diabetes care
 - CVD care
 - Cancer screening
 - HIV quality of care

iCare – National Measures

RPMS iCare - Active Diabetics > 50 - Panel View

File Edit Tools Window Help Quick Patient Search:

Active Diabetics > 50 Total Patients = 146
Big Cove Patient List Last Updated: Oct 27, 2010 10:55 AM
 by GEBREMARIAM, CINDY

Properties

Patient List Reminders Rem Aggregated Natl Measures **Natl Aggregated** CMET Care Mgmt Diagnostic Tags Flags

National Performance Measures data from CRS 2010 current as of: Oct 25, 2010 08:21 PM

Category	Clinical Group	Measure Name	# Patients in Denominator	# Patients in Numerator
National GPRA	Behavioral Health	Alcohol Screen Females 15-44		1
		Depression: Diagnosis Only 18+	146	13
		Depression: Screening Only 18+	146	66
		Depression: Screening or Diagnosis 18+	146	74
		IPV/DV Screen Females 15-40	1	0
	Cancer-Related	Colorectal Cancer 51-80: FOBT/FIT	112	8
		Colorectal Cancer Screen 51-80	112	29
		Mammogram Rates 52-64	31	19
		Pap Smear Rates 21-64	29	15
		Tobacco Cessation: Counseling or RX	53	3
		Tobacco Cessation: Counseling, RX or Quit	53	3
		Tobacco Cessation: Quit	53	0
		Tobacco Use 5+: ETS	6	0
		Tobacco Use 5+: Smokeless	5	0
		Tobacco Use 5+: Smokers	5	5
		Tobacco Use Prevalence 5+	6	5
		Tobacco Use/Exposure Assessment 5+	146	6
	CVD-Related	BMI Measured 2-74 (Refusals Included)	127	103
		BMI: Assessed Phase 2-74	103	67

Complex logic is executed routinely to identify status of adherence to the measure

Ready. Selected Rows: 1 Visible Rows: 56 Total Rows: 163

Direct Link to Patient Record

RPMS iCare - AYERS, EUGENE MURRAY

File Edit Tools Window Help Quick Patient Search:

Drill down to patient specific data to see their immediate needs

SSN: XXX-XX-7585 Phone: 555-555-7176
Sex: M Work Ph.:
Age: 59 YRS Alt. Phone:
DOB: Dec 19, 1950 Email:
DPCP: JCPROVIDER.ALLEN

Additional Demographics Add a Note

Care Mgmt Referrals DX Tags Family HX Notes
Cover Sheet Snapshot Flags Reminders BP Prompts **Natl Measures** CMET Summ/Supp PCC Problem List

Recalc

Patient National Performance Measures data from CRS 2010 current as of: Oct 25, 2010 10:36 PM

Category	Clinical Group	Measure Name	Performance Status	Adherence Value
National GPRA	Diabetes	DM: A1c Documented	(All)	
		DM: A1c Glycemic Control Ideal < 7	(Custom)	
		DM: A1c Glycemic Control Poor > 9.5 (GPRA)	(Blanks)	
		DM: BP Assessed	(NonBlanks)	
		DM: BP Assessed	NO	
		DM: BP Assessed	YES	138/83 UNC
		DM: BP Controlled < 130/80	NO	138/83 UNC
		DM: LDL Assessed	NO	
DM: LDL Low <=100	NO			
DM: Nephropathy Assessed	NO			

Selected Rows: 1 Visible Rows: 10 Total Rows: 163



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Team Panel Definition

Designate a panel as an “IPC” panel.

Enhanced Panel Definitions to accommodate teams and microsystems.

Additional filters will include “Labs” and “Medications”.

The screenshot shows a software interface for defining a team panel. At the top, there are tabs for 'Definition', 'Layouts', 'Sharing', 'Preview', and 'Auto Repopulate Options'. The 'Definition' tab is active. Below the tabs, there are fields for 'Panel Name' (set to 'Pats Assigned to Pink Team'), 'Category' (a dropdown menu), and a checkbox for 'Designate as IPC Panel?' which is checked. A 'Properties' link is visible on the right. Below these fields is a 'Panel Description' text area. On the left side, there is a 'Population Search Options' section with several radio button options: 'No Predefined Population Search - Add Patients manually', 'My Patients', 'Patients Assigned to' (which is selected), 'Scheduled Appts', 'QMan Template', 'RPMS Register', 'EHR Personal List', 'Ad Hoc Search', and 'Apply Additional Filters?'. The main area of the interface is titled 'Patients Assigned to Parameters' and contains several configuration options: 'Patients NOT Assigned to a DPCP' (radio button), 'Providers' (a text input field with an 'Edit' button), 'As' (checkboxes for 'DPCP' and 'Specialty Provider'), 'Specialty Type' (a text input field with an 'Edit' button), 'Min # of Visits within Timeframe' (two dropdown menus), 'Primary Visit Provider' (checkbox), 'Primary/Secondary Visit Provider' (checkbox), and 'Team' (a dropdown menu set to 'Pink Team'). Below the 'Team' dropdown is a box labeled 'Selected Team Includes:' containing the text: 'BOCIAN, MARY M', 'LEE, PHUONG-THAO T', and 'GIORDANO, TUESDAY R'. At the bottom left, there is a 'Filters - n/a' indicator.

IPC/Patient Detail

Pull "IPC" panel data. Measures divided into Core measures.

The screenshot shows a software window titled "RPMS iCare - SQUIRES SKIP - DEMO HOSPITAL - DEV2 - VDENMH50BDD1". The interface includes a menu bar (File, Edit, View, Tools, Window, Help) and a search bar for "Quick Patient Search". Below the menu is a navigation bar with tabs: "Panel List", "Flag List", "Community Alerts", "Nat'l Measures", "CNET", "Meaningful Use", and "IPC". The "IPC" tab is active, showing a "Patient Detail" view with sub-tabs for "Patient Detail", "Provider Detail", "Provider Aggregated", and "Facility Aggregated".

The main data area is titled "Panel: IPC Cancer Screening Bundle". It contains a table with columns for patient information and various screening measures. The table is divided into two sections: "Cancer Screening" and "Health Risk Screening".

DPCP	Patient Name	HRN	DOB	Last Visit Date	Cancer Screening Bundle	Colorectal Cancer Screen 51-80	Mammogram Rates 52-64	Pap Smear Rates 21-64	Health Risk Screening Bundle	20+ BP Assessed	BMI Measured 2-74
	SHEY LAURELLE A		07/23/1913	09/25/2009	N/A	N/A	N/A	N/A	NO	YES	N/A
			06/28/1938	09/25/2009	YES	YES	N/A	N/A	NO	NO	NC
			07/16/1949	10/05/2009	NO	N/A	NO	YES	NO	NO	NC
			09/07/1951	09/21/2009	NO	NO	NO	YES	NO	NO	NC
			07/30/1983	09/25/2009	YES	N/A	N/A	YES	NO	NO	YES
			05/24/1941	08/28/2008	YES	YES	N/A	N/A	NO	NO	NC
			11/24/1946	07/07/2008	NDA	NDA	NDA	NDA	NDA	NDA	NDA
			11/11/1953	09/25/2009	NO	NO	N/A	N/A	NO	NO	NC
			07/15/1952		NDA	NDA	NDA	NDA	NDA	NDA	NDA
			11/24/1955	08/31/2009	NO	NO	NO	YES	NO	NO	NC
			07/31/1961	08/14/2008	N/A	N/A	N/A	N/A	NO	NO	YES
			12/28/1963	09/25/2009	YES	N/A	N/A	YES	NO	NO	YES
			04/07/1943	10/01/2008	YES	YES	N/A	N/A	NO	NO	NC
			07/28/1965	05/26/2009	N/A	N/A	N/A	N/A	NO	NO	NC
			06/21/1966	09/30/2009	N/A	N/A	N/A	N/A	NO	NO	YES

At the bottom right of the window, it says "Total Rows: Visible Rows: Selected Rows:".

IPC/Provider Detail

RPMS iCare - SQUIRES,SKIP - DEMO HOSPITAL - DEV2 - VDENMIHSDBD01

File Edit View Tools Window Help

Quick Patient Search:

Panel List Flag List Community Alerts Nat'l Measures CMET Meaningful Use **IPC**

Patient Detail **Provider Detail** Provider Aggregated Facility Aggregated

Filters

Optional filters can be used to focus your view

Panel: IPC Cancer Screening Bundle

Category:

Provider	Category	Title	Numerator	Denominator	% Met	Total Patients	Total Deceased	
SHEY,LAURELLE A	Outcome	IHD: BP Assessed	0	0	0%	86		
		IHD: Normal BP	0	0	0%	86		
		IHD: Pre-HTN I BP	0	0	0%	86		
		IHD: Pre-HTN II BP	0	0	0%	86		
		IHD: Stage 1 HTN BP	0	0	0%	86		
		IHD: Stage 2 HTN BP	0	0	0%	86		
			Outcome Measures Bundle	0	76	0%	86	
		Supplemental	Comprehensive Cancer Screening (Dev)	21	60	35%	86	
			Continuity of Care Primary Provider			0%	86	
			DM: Comprehensive Care	0	0	0%	86	
			DM: Comprehensive Care: A1C	0	0	0%	86	
			DM: Comprehensive Care: Retinal Evaluation	0	0	0%	86	
			DM: Dental Access	0	0	0%	86	
			DM: Foot Exam	0	0	0%	86	
			Empanelled Primary Care Provider			0%	86	
			Female Patients 15-40: Comprehensive Health Screening: IPV/DV Screening	0	2	0%	86	
			Goal Setting: Goal Met	0	0	0%	86	
			Goal Setting: Goal Set	0	0	0%	86	
			Patients 12-75: Comprehensive Health Screening: Alcohol Screen	0	74	0%	86	
			Patients 18+: Comprehensive Health Screening: Depression Screen	0	76	0%	86	
			Patients 2+: Comprehensive Health Screening	0	76	0%	86	
			Patients 2+: Comprehensive Health Screening excluding Physical Activity	0	76	0%	86	
			Patients 20+: Comprehensive Health Screening: BP Assessed	21	76	28%	86	
			Patients 2-74: Comprehensive Health Screening: BMI Calculated	29	74	39%	86	
			Patients 5+: Comprehensive Health Screening: Physical Activity	0	76	0%	86	
			Patients 5+: Physical Activity Assessment	0	76	0%	86	
		Patients 5+: Comprehensive Health Screening: Tobacco Use Assessed	0	76	0%	86		
	Revenue Generated Per Visit			0%	86			
	Topical Fluoride Pts	0	76	0%	86			

Update View

Save current settings to User Preferences?

Save

Restore to User Pref

Total Rows: Visible Rows: Selected Rows:

IPC/Provider Aggregated

RPMS iCare - SQUIRES,SKIP - DEMO HOSPITAL - DEV2 - VDENMIHSDBD01

File Edit View Tools Window Help

Quick Patient Search:

Panel List Flag List Community Alerts Nat'l Measures CMET Meaningful Use **IPC**

Patient Detail Provider Detail **Provider Aggregated** Facility Aggregated

Provider	Measure Set	Measure	January	February	March	April	May	June	July	August	September	October	November	December
SILVERROSE_SCC	Cancer Screening	Mammogram Rates 52-64	N/A	N/A	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
		Pap Smear Rates 21-64	N/A	N/A	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
		Colorectal Cancer Screen 51-80	N/A	N/A	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
		Cancer Screening Bundle	N/A	N/A	N/A	N/A	N/A	33%	N/A	N/A	N/A	N/A	N/A	N/A
	Health Risk Screening	Health Risk Screening Bundle	N/A	N/A	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
		Outcome	DM: A1c Glycemic Control Ideal <7	N/A	N/A	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A
			DM: BP Controlled <130/80	N/A	N/A	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A
	Supplemental	DM: LDL Low <=100	N/A	N/A	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
		DM: Foot Exam	N/A	N/A	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
		DM: Dental Access	N/A	N/A	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
		Comprehensive Cancer Screening (Dev)	N/A	N/A	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
		Patients 5+: Physical Activity Assessment	N/A	N/A	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
		Patients 2+: Comprehensive Health Screening	N/A	N/A	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
		Patients 2+: Comprehensive Health Screening excluding Physical Activity	N/A	N/A	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
		Patients 12-75: Comprehensive Health Screening: Alcohol Screen	N/A	N/A	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
		Patients 18+: Comprehensive Health Screening: Depression Screen	N/A	N/A	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
		Female Patients 15-40: Comprehensive Health Screening: IPV/DV Screening	N/A	N/A	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
	Patients 5+: Comprehensive Health	N/A	N/A	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A	

IPC/Facility Aggregated

RPMS iCare - SQUIRES,SKIP - DEMO HOSPITAL - DEV2 - VDENMIHSDBD01

File Edit View Tools Window Help

Quick Patient Search:

Panel List Flag List Community Alerts Nat'l Measures CMET Meaningful Use **IPC**

Patient Detail Provider Detail Provider Aggregated **Facility Aggregated**


Measure Set	Measure	March	April	May	June	July	August	September	October	November	December
Cancer Screening	Mammogram Rates 52-64	N/A	N/A	N/A	7%	N/A	N/A	N/A	N/A	N/A	N/A
	Pap Smear Rates 21-64	N/A	N/A	N/A	68%	N/A	N/A	N/A	N/A	N/A	N/A
	Colorectal Cancer Screen 51-80	N/A	N/A	N/A	26%	N/A	N/A	N/A	N/A	N/A	N/A
	Cancer Screening Bundle	N/A	N/A	N/A	22%	N/A	N/A	N/A	N/A	N/A	N/A
Health Risk Screening	Health Risk Screening Bundle	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
Outcome	DM: A1c Glycemic Control Ideal <7	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
	DM: BP Controlled <130/80	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
	DM: LDL Low <=100	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
Supplemental	DM: Foot Exam	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
	DM: Dental Access	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
	Comprehensive Cancer Screening (Dev)	N/A	N/A	N/A	35%	N/A	N/A	N/A	N/A	N/A	N/A
	Patients 5+: Physical Activity Assessment	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
	Patients 2+: Comprehensive Health Screening	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
	Patients 2+: Comprehensive Health Screening excluding Physical Activity	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
	Patients 12-75: Comprehensive Health Screening: Alcohol Screen	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
	Patients 18+: Comprehensive Health Screening: Depression Screen	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
	Female Patients 15-40: Comprehensive Health Screening: IPV/DV Screening	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
	Patients 5+: Comprehensive Health Screening: Tobacco Use Assessed	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
	Patients 2-74: Comprehensive Health Screening: BMI Calculated	N/A	N/A	N/A	43%	N/A	N/A	N/A	N/A	N/A	N/A
	Patients 20+: Comprehensive Health Screening: BP Assessed	N/A	N/A	N/A	26%	N/A	N/A	N/A	N/A	N/A	N/A
	Patients 5+: Comprehensive Health Screening: Physical Activity	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
	Goal Setting: Goal Set	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
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Topical Fluoride Pts	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A	
DM: Comprehensive Care: A1C	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A	
DM: Comprehensive Care: Retinal Evaluation	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A	
DM: Comprehensive Care	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A	
Revenue Generated Per Visit		\$101.57	\$97.27	\$96.91	\$85.39	N/A	N/A	N/A	N/A	N/A	N/A



Patient-Centered Medical Home

- ◆ Joint Principles 2007
- ◆ Key HIT Drivers and Functions 2010*:
 - Clinical Decision Support
 - Registries
 - Team Care
 - Care Transitions
 - Personal Health Records
 - Telehealth
 - Measurement and Performance Reporting

◆ (*) Reference: Bates, D.W. and Bitton, A. "The Future Of Health. Information Technology In The Patient-Centered Medical Home," *Health Affairs* <<http://content.healthaffairs.org/>>, 29, no. 4 (2010): 614-621. (<http://content.healthaffairs.org/cgi/content/abstract/29/4/614>)





The IHS Experience: HIT and PCMH



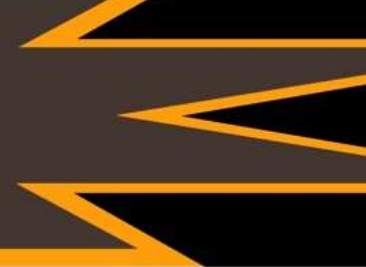
- ◆ Long-standing drivers in the care model for over 40 years that are now affecting general health system
- ◆ Community as patient means population health IT is integral to daily clinical work
- ◆ Close collaboration between clinical and national programs for HIT development
- ◆ PDSA for HIT: Iterative cycle of development, with modeling and coding choices entering multiple phases of clinical quality measure development
- ◆ Evaluation should be a constant feature of all program and HIT deployments



Acknowledgements

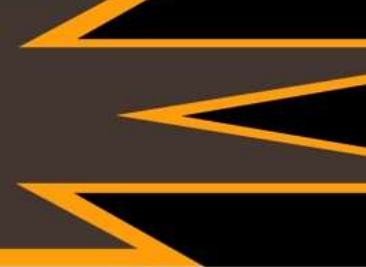


- ◆ National RPMS Program Team
- ◆ National iCare and Population Health Team
- ◆ National IPC Program Team
- ◆ DHHS collaborators and VA CPRS developers
- ◆ IHS innovators through the years



Questions ?






Extra Slides





iCare – Background Processes

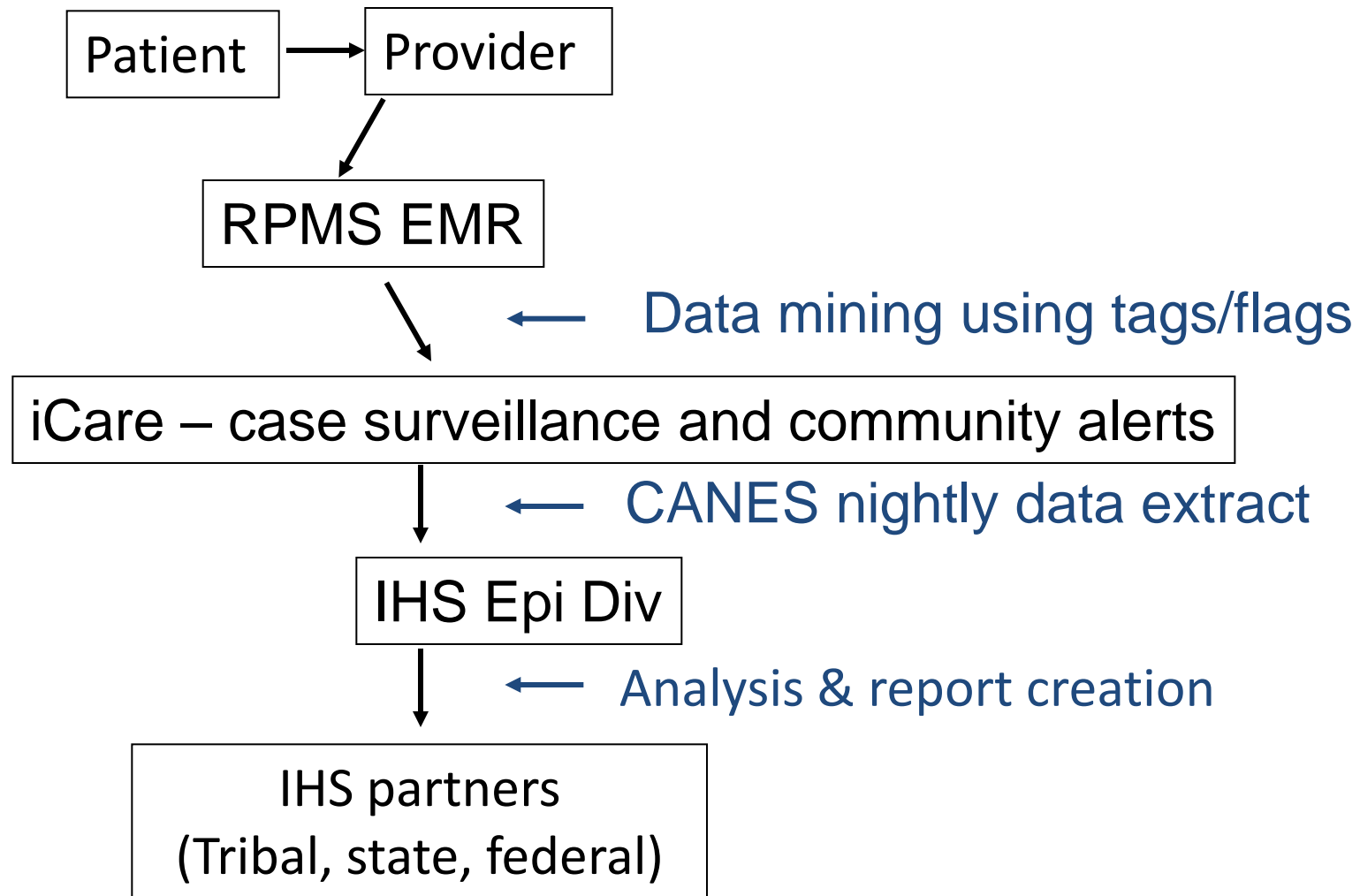
- ◆ Test
 - ◆ Performed routinely - both nightly and weekly
 - ◆ Allows for quick panel creation and data display
 - ◆ Provides Clinical Decision Support
 - Community Alerts
 - Flags
 - Reminders
 - Performance Measures
 - Best Practice Prompts
 - Care Management Event Tracking
 - Meaningful Use
- 

iCare – Community Alerts

- ◆ Splash Screen at first login of the day
- ◆ Anonymous
- ◆ Related to Community of Residence
- ◆ Ready Access from many views: Opening View; Panel View; Patient Record
- ◆ User-defined display

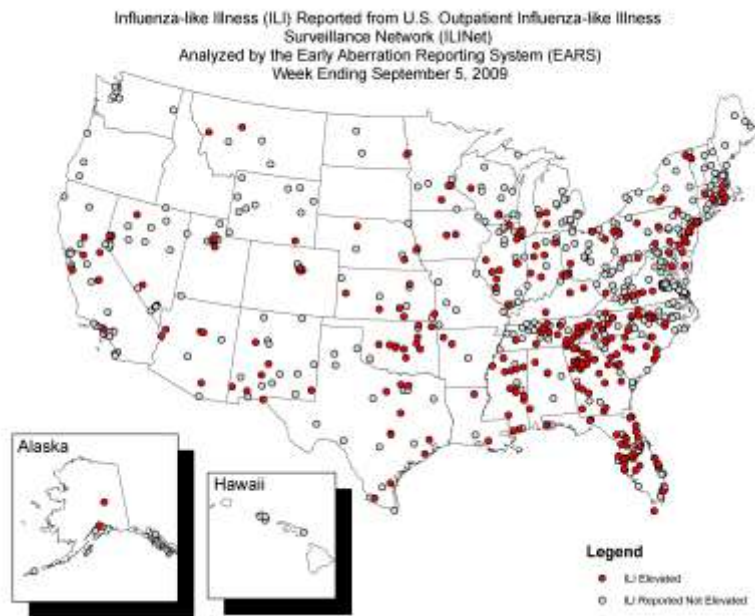
Community	Type	Diagnosis	Number of Cases	Most Recent Occurrence
32 HINDOR ACR	CDC NND	Chlamydia		1 Jul 01, 2009
		Measles		2 Jun 25, 2009
		Q Fever		2 Jun 26, 2009
		Toxic Shock Syndrome, Non-Strap		1 Jun 26, 2009
		West Nile Virus		2 Jun 25, 2009
BIG COVE	Suicidal Behavior	Completion		1 Jun 14, 2009
BIRDTOWN	CDC NND	Botulin, Ixoderm		1 Jul 01, 2009
		Gonorrhea		1 Jun 14, 2009
BRYSON CITY	Suicidal Behavior	Completion		1 Jun 11, 2009
GEORGIA UNK	CDC NND	Measles		1 Jul 01, 2009
PAINTTOWN		Chlamydia		1 Jun 13, 2009
ROBBINSVILLE		Syphilis, Primary		1 Jun 29, 2009
ROBBINSVILLE		Measles, unatt		1 Jun 24, 2009
ROBBINSVILLE		Chlamydia		1 Jun 27, 2009
ROBBINSVILLE		Measles		1 Jun 24, 2009
ROBBINSVILLE	CDC NND	Measles		1 Jun 24, 2009
ROBBINSVILLE	Suicidal Behavior	Completion		1 Jun 24, 2009

iCare CANES – Community Alerts for National Epidemiologic Surveillance



EHRs and Public Health Challenges: Sentinel vs. Large-Scale Surveillance

- ◆ Status quo: Manual sentinel providers; long-standing relationships
- ◆ EHRs: “Large-scale surveillance” – high fractions of total healthcare transactions available
- ◆ Issues: indicators vs. raw data, (cross)-validation, signal-to-noise; analytics capacity; semantic heterogeneity; causal chains; visualization;
- ◆ level of aggregation = state and local vs. federal needs



Source: CDC Influenza Division