IHS Health Information Technology and the Medical Home

September 22 2011

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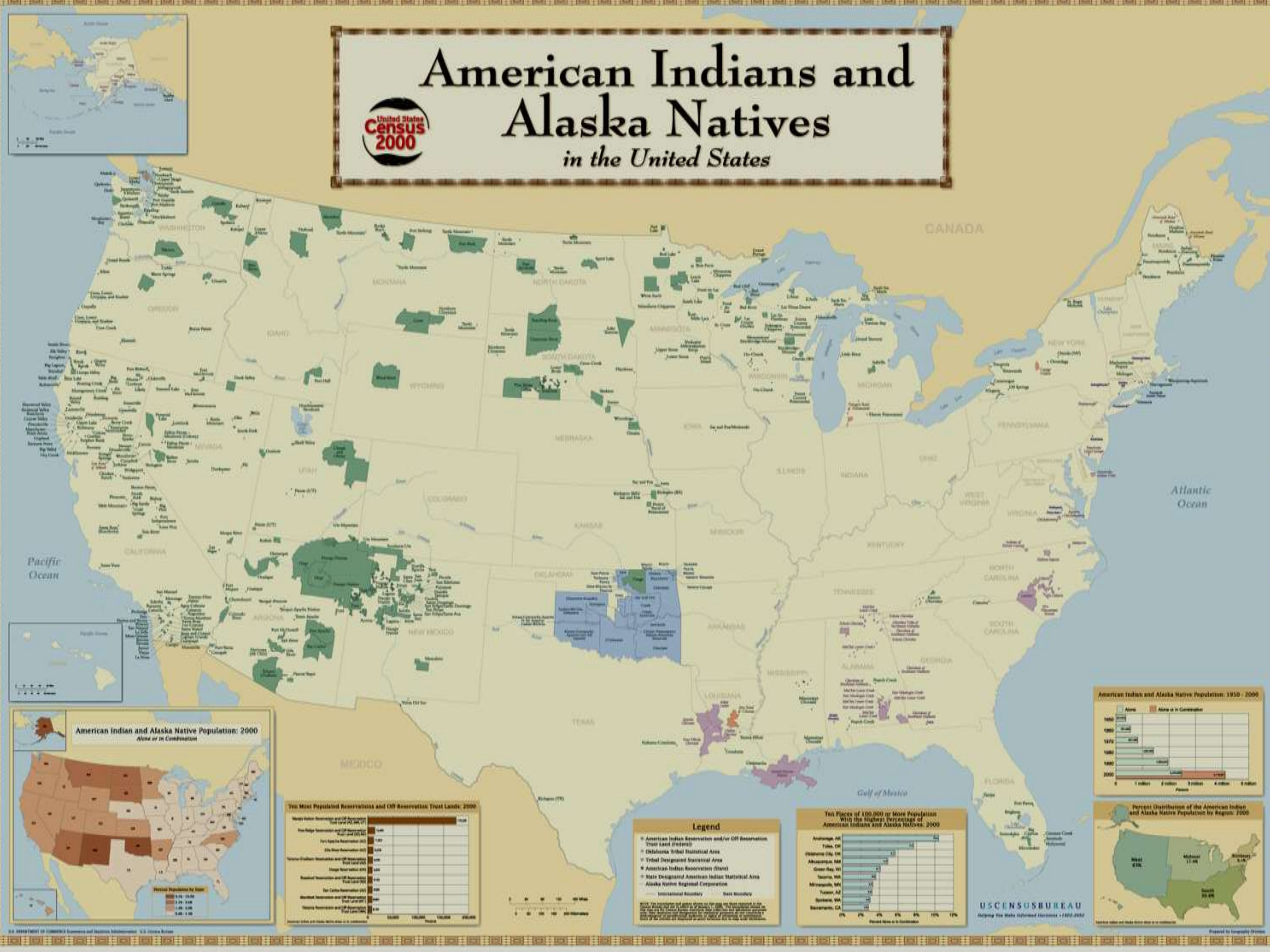
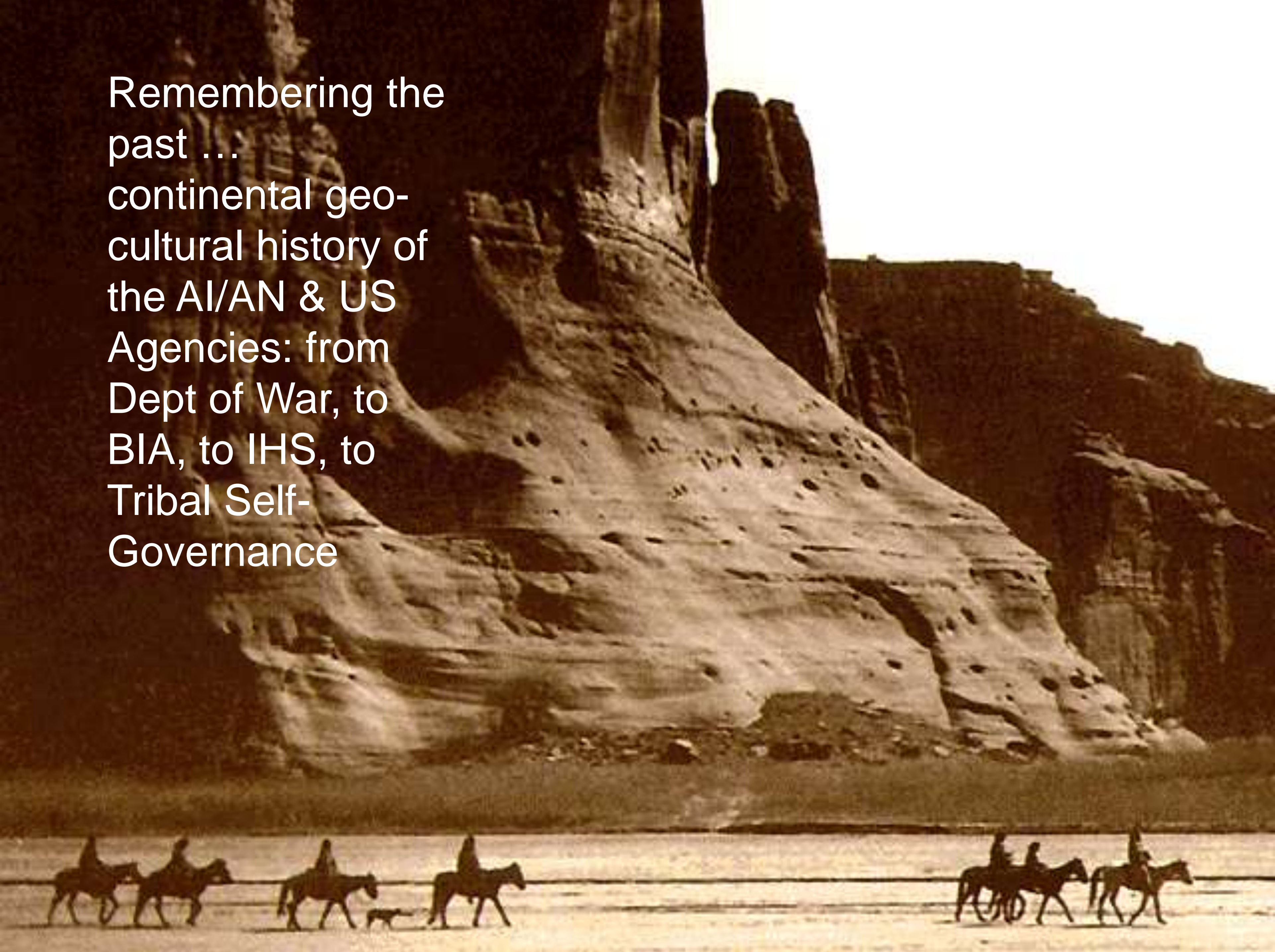
Office of Information Technology
Indian Health Service, DHHS

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
United States Census 2000
CANADA
Atlantic Ocean
Pacific Ocean
Gulf of Mexico
MEXICO
American Indian and Alaska Native Population: 2000
Alone or in Combination
Ten Most Populated Reservations and Off-Reservation Trust Lands: 2000
Legend
American Indian Reservation and/or Off-Reservation Trust Land (Federal)
Oklahoma Tribal Statistical Area
Tribal Designated Statistical Area
American Indian Reservation (State)
State Designated American Indian Statistical Area
Alaska Native Regional Corporation
International Boundary
State Boundary
Ten Places of 100,000 or More Population With the Highest Percentage of American Indians and Alaska Natives: 2000
American Indian and Alaska Native Population: 1950 - 2000
Percent Distribution of the American Indian and Alaska Native Population by Region: 2000
USCENSUSBUREAU


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

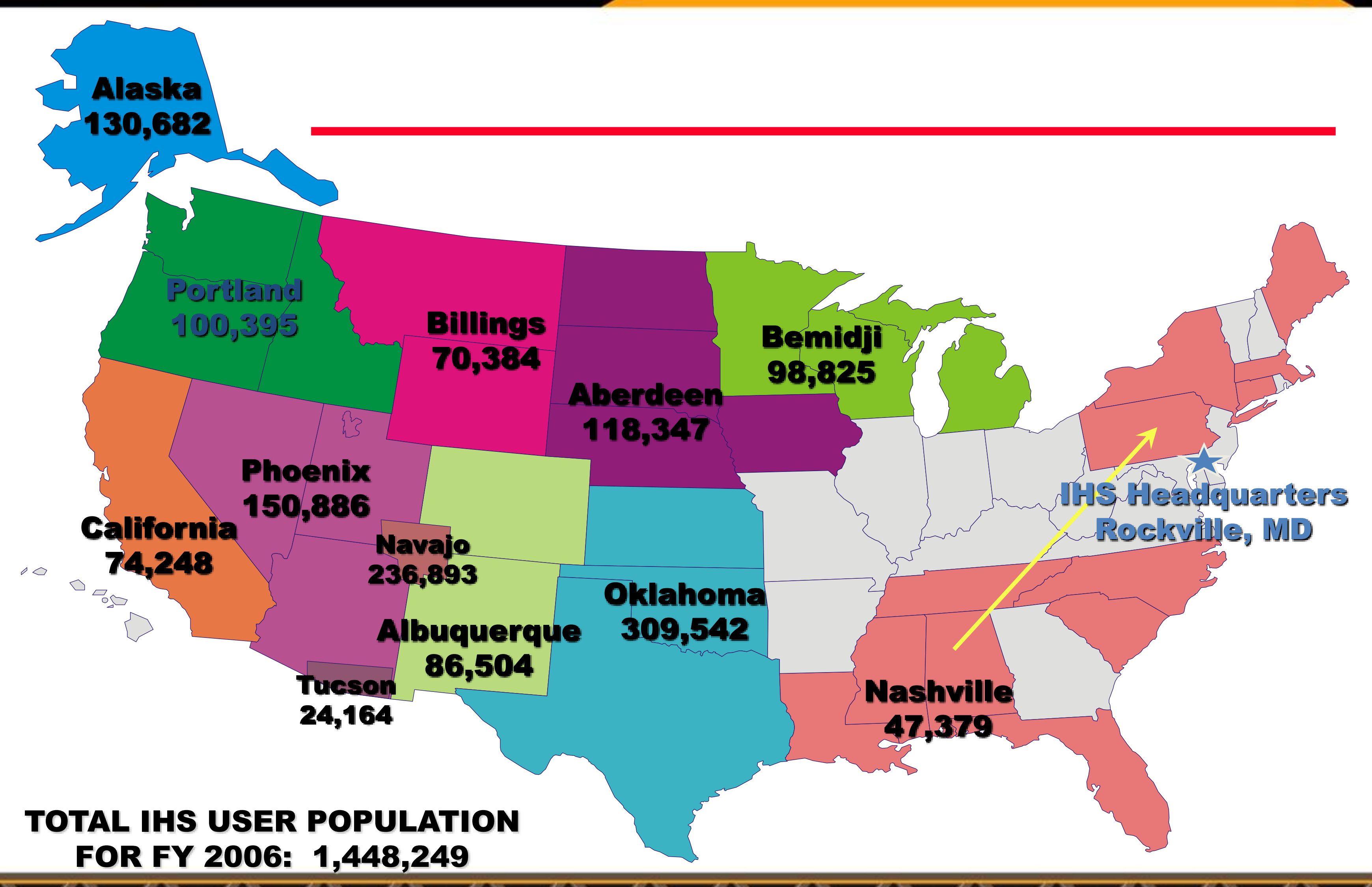
American Indian Health

"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

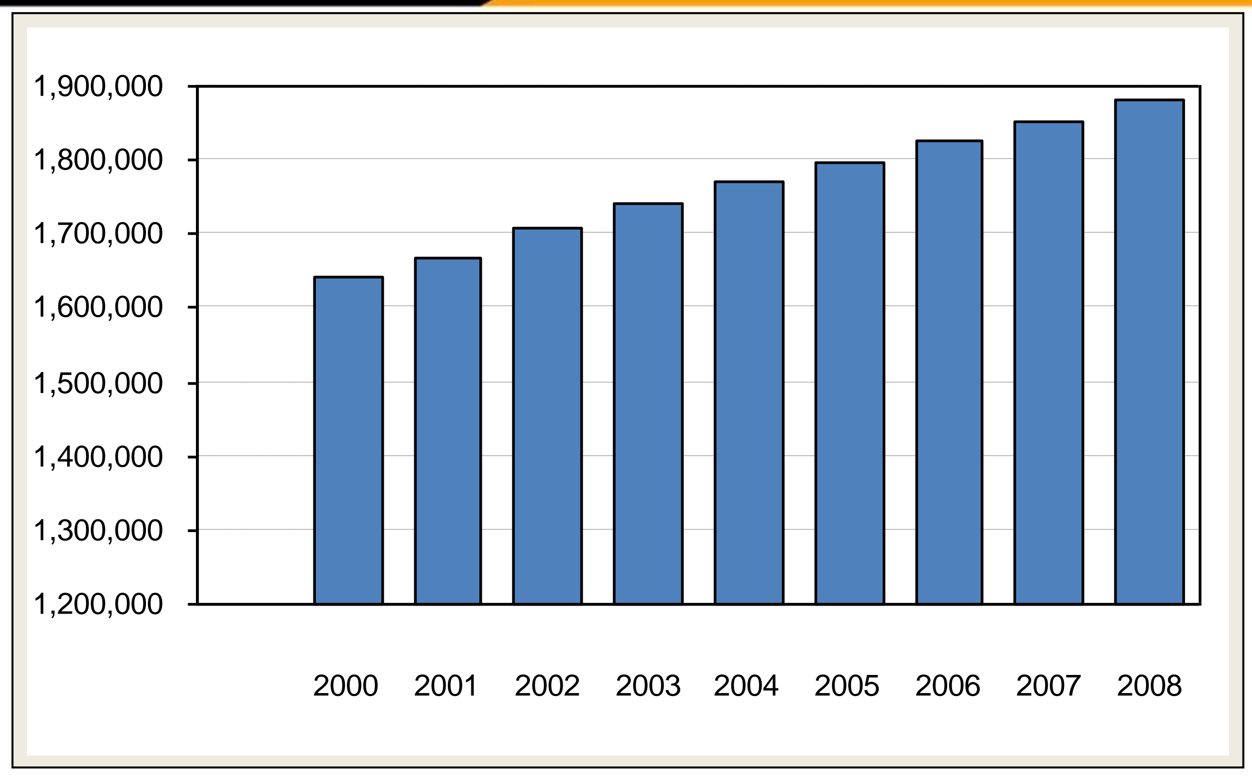
U.S. Commission on Civil Rights, 2003

IHS User Population By Area



TOTAL IHS USER POPULATION
FOR FY 2006: 1,448,249

IHS Service Population Growth



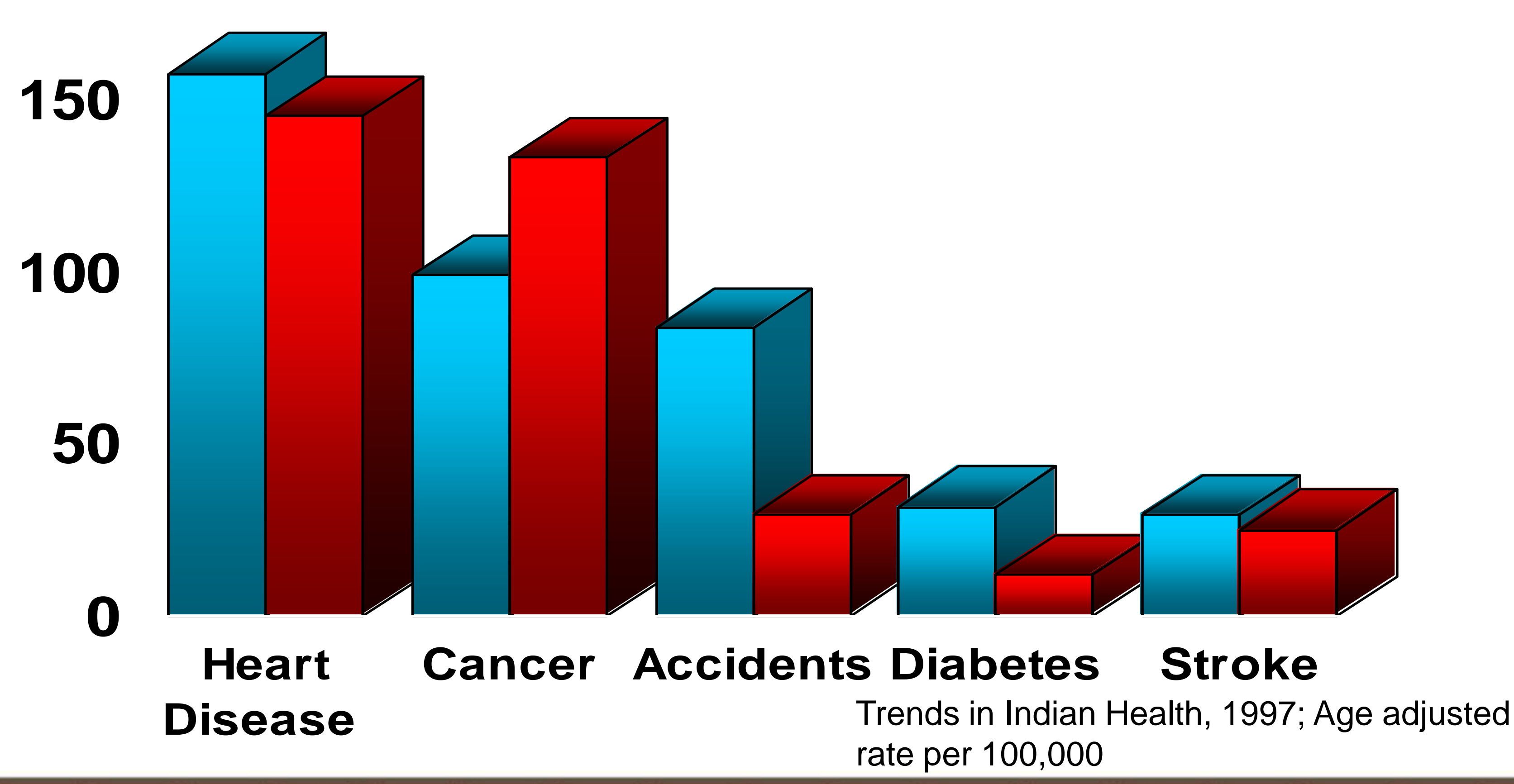
- **Average population growth rate since 2000 is 1.8% per year**
- **71% high school graduates (80% U.S.) & 10% college graduates (24% U.S.)**
- **29% of AI/ANs fall below poverty standard**
- **Unemployment is 4.0 times the US rate for males and females**
- **Less than 22% with self reported access 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	Tribal	Urban
• 33 Hospitals • 49 Health Centers • 46 Health Stations	• 15 Hospitals • 198 Health Centers • 121 Health Stations • 180 Alaska Village Clinics	• 34 Urban Indian Health Programs

Mortality Rates in American Indians & Alaska Natives



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

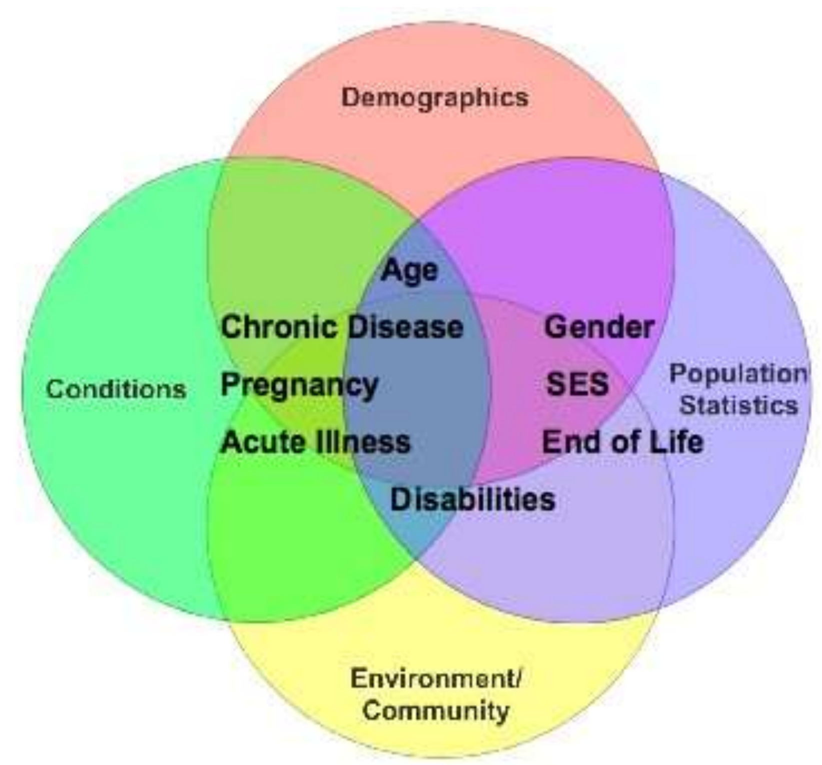
IHS Challenges

- 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:

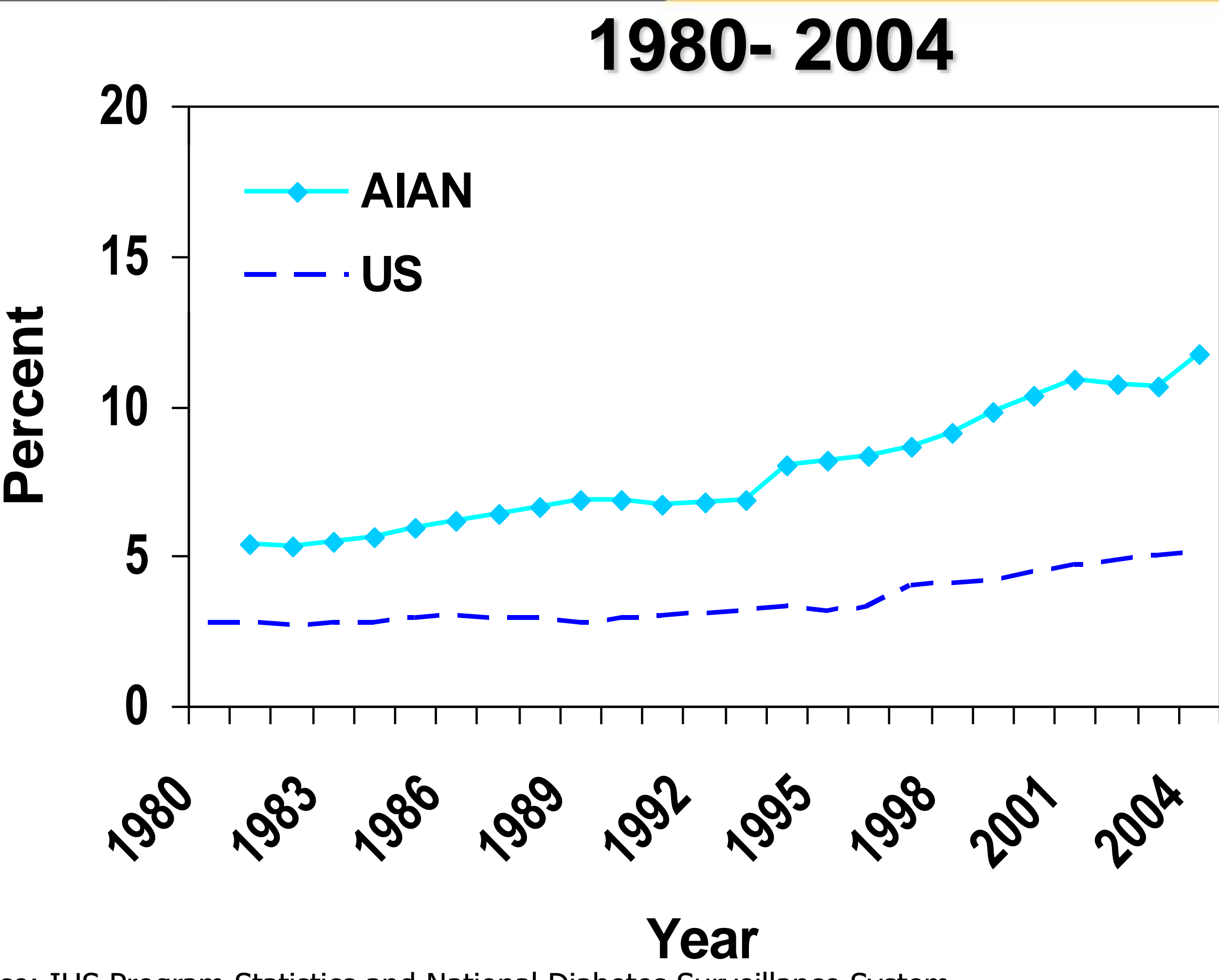
- Personal Health
- Family Health
- Public Health
- Population Health
- Self-governance
- Transparency of Data



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

Prevalence of Diagnosed Diabetes

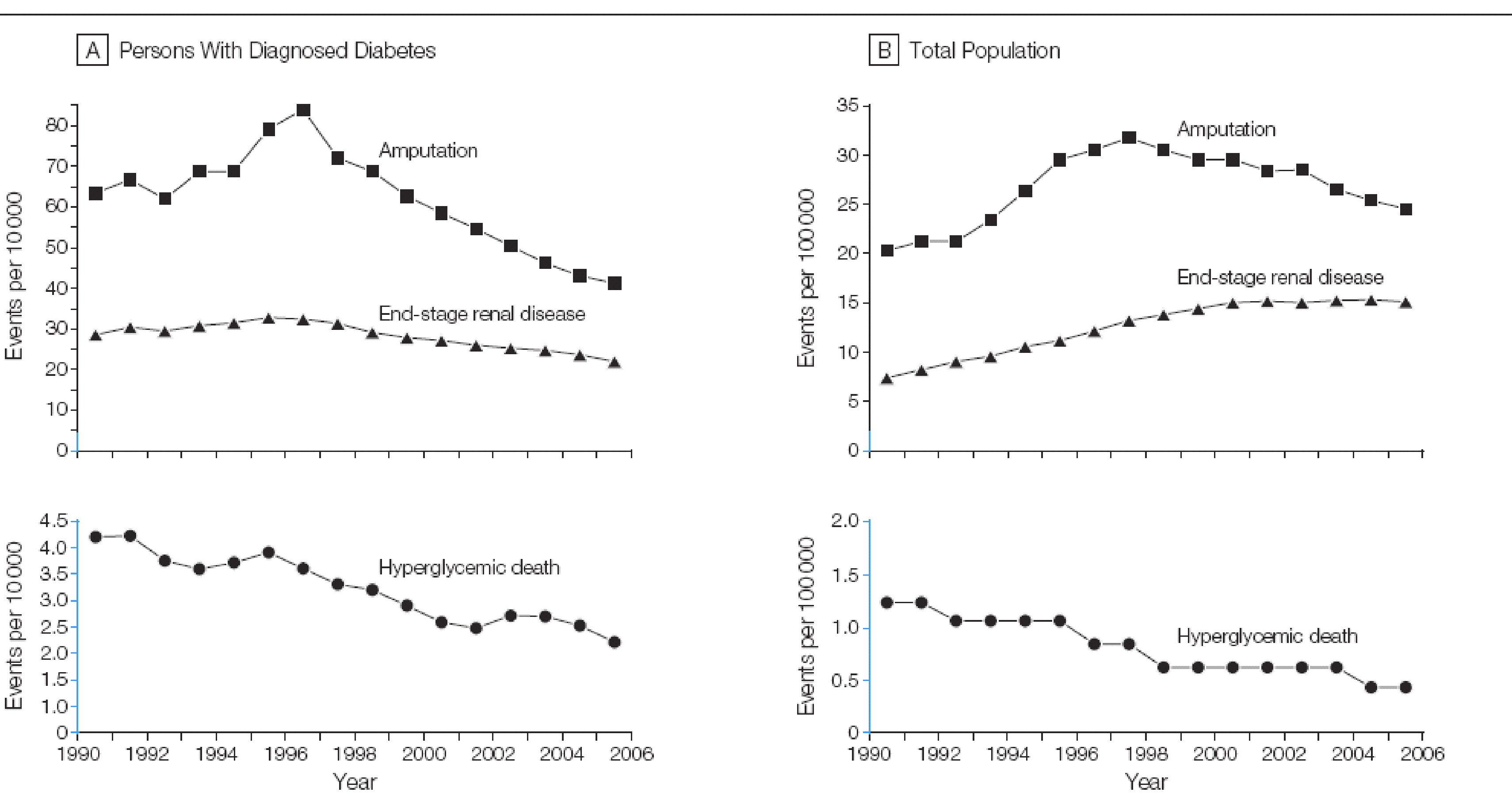
AI/ANs compared to U.S. population



Source: IHS Program Statistics and National Diabetes Surveillance System.

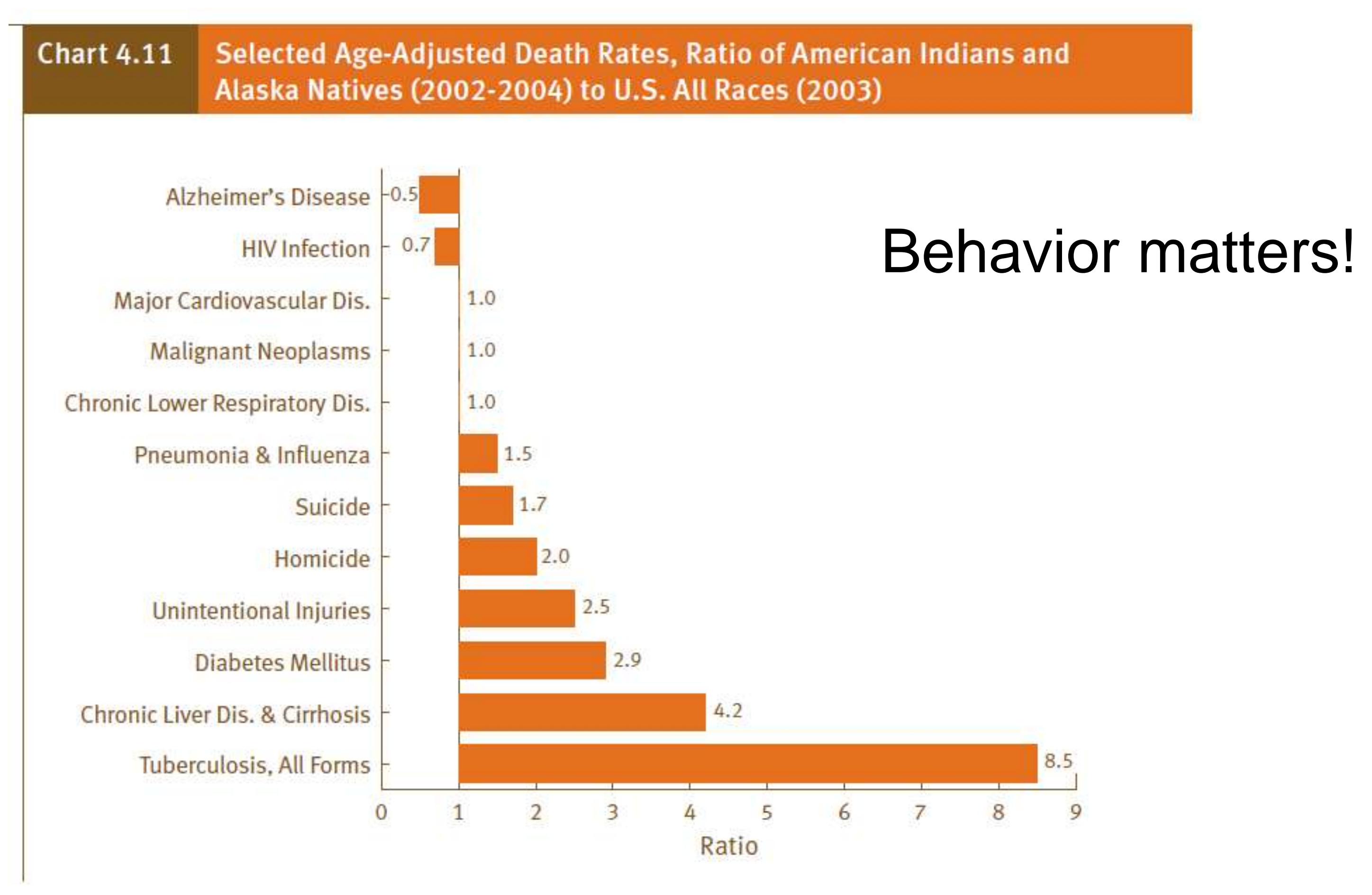
Age-adjusted to the 2000 US standard population with the exception of 1981–1993 data for AIAN, which was age-adjusted to the 1980 US standard population.

Diabetes - Translational Population Perspective



Gregg and Albright, JAMA 2009

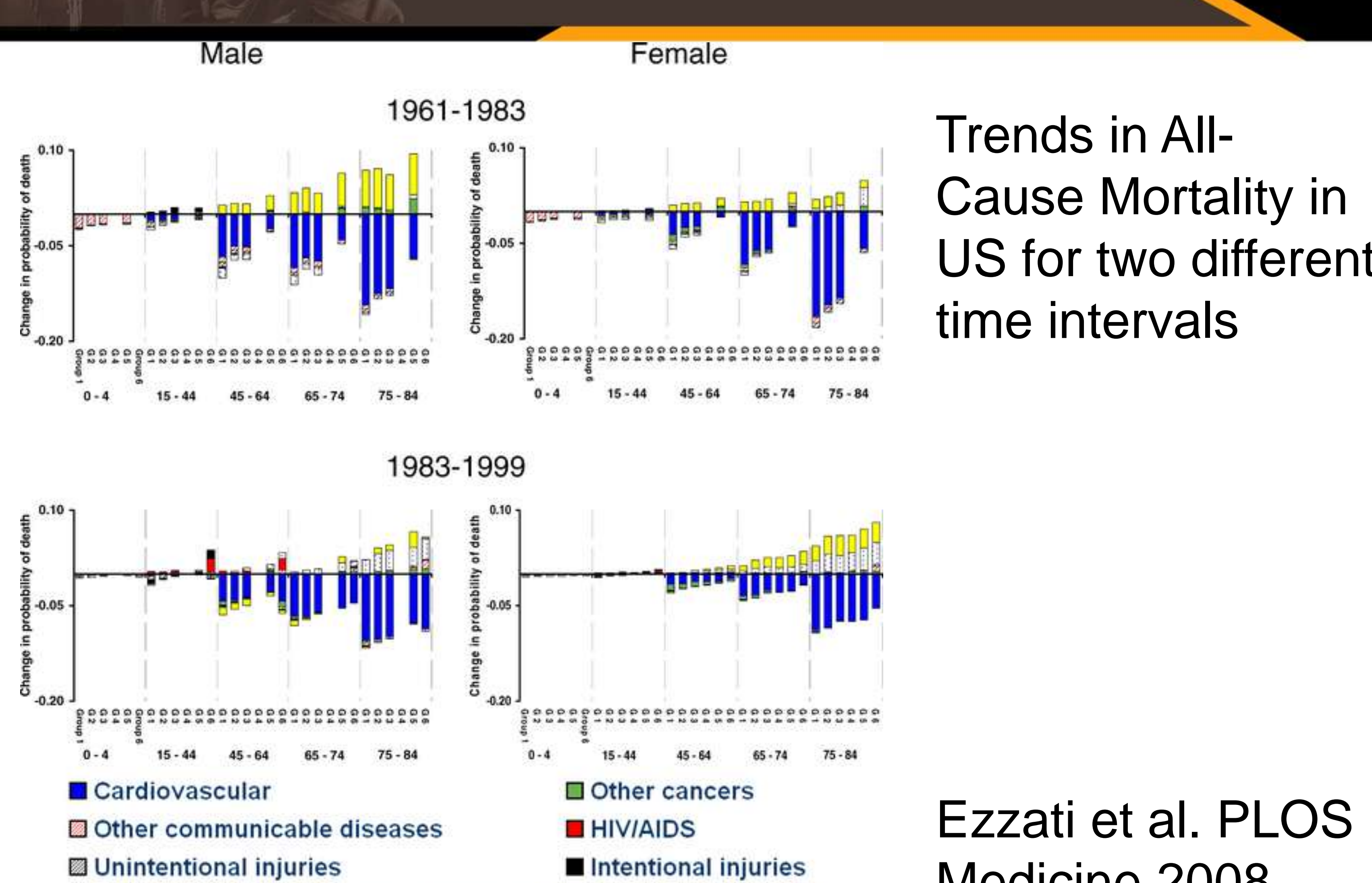
AI/AN Relative Mortality Rates



Behavior matters!

Trends in Indian Health, 2003

Community as the Patient



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

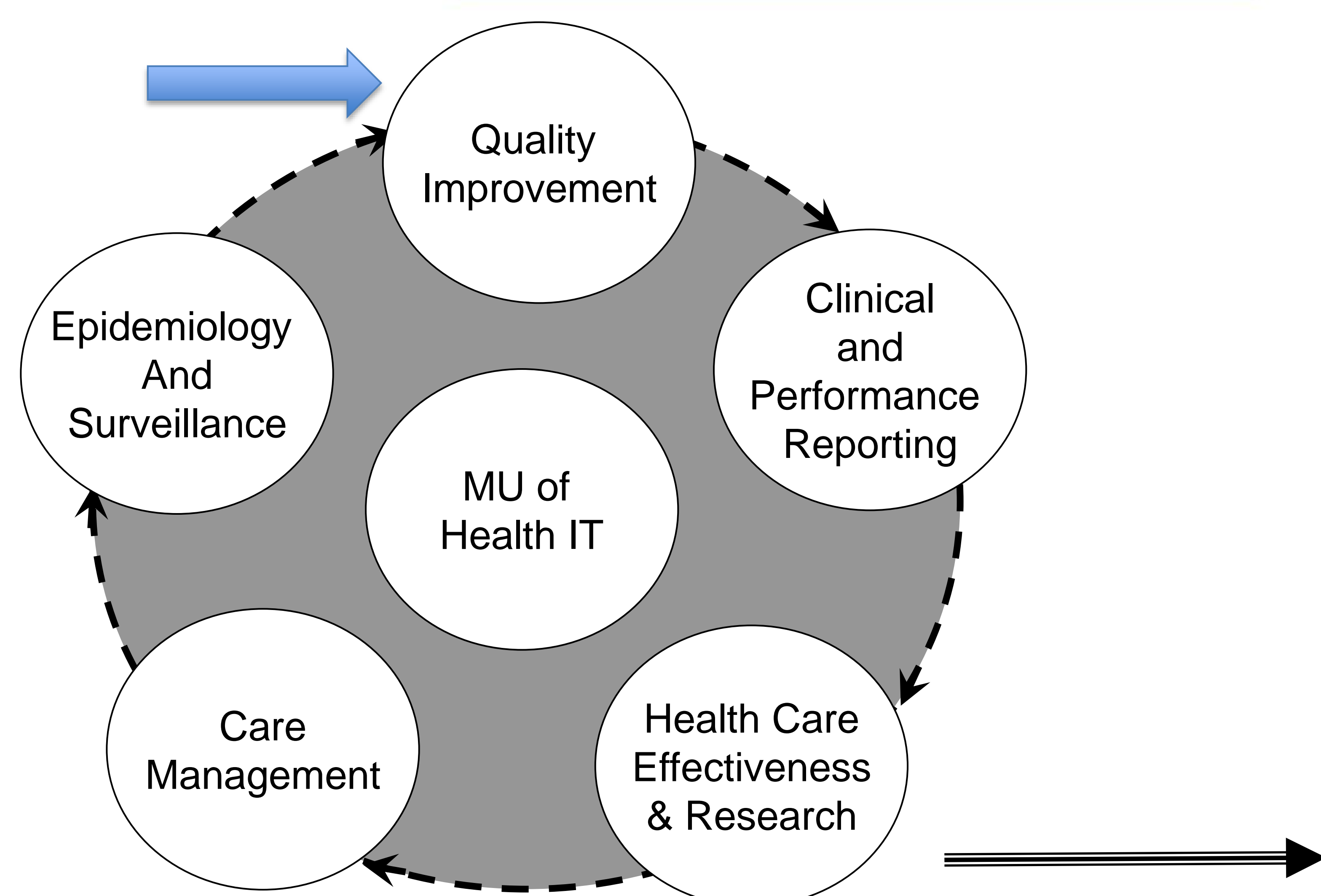
Signs and symptoms

- 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
BILLINGS
PORTLAND
BEMIDJI
ABERDEEN
PHOENIX
CALIFORNIA
NAVAJO
NASHVILLE
ALBUQUERQUE
TUCSON
OKLAHOMA
CITY
ALASKA
IPC I
IPC II
IPC III
FEDERAL
TRIBAL
URBAN

IPC III
IPC
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CALIFORNIA
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ALBUQUERQUE
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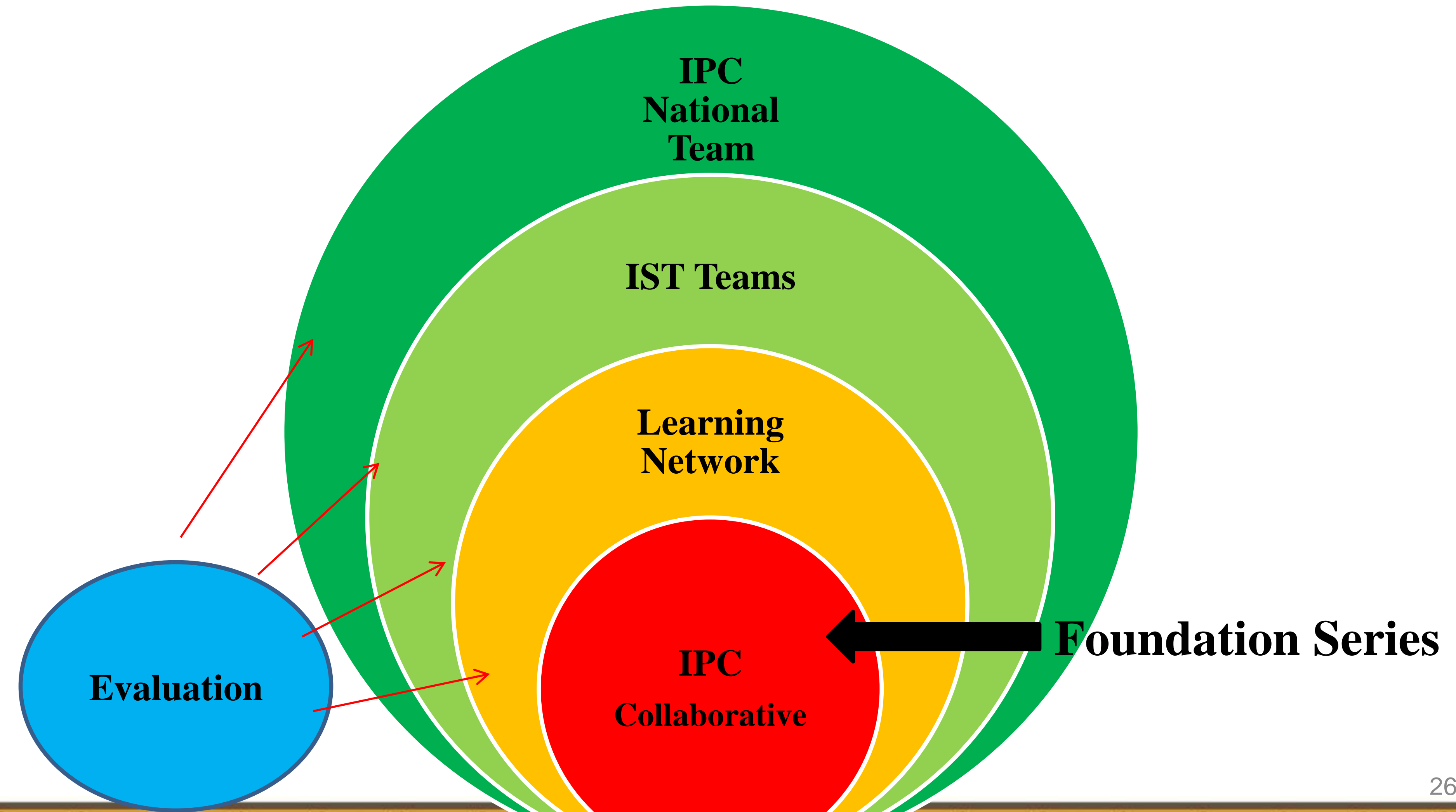
OKLAHOMA CITY
ALASKA
IPC I
IPC II
IPC III
FEDERAL
TRIBAL
URBAN

"Break Through Series" Model:

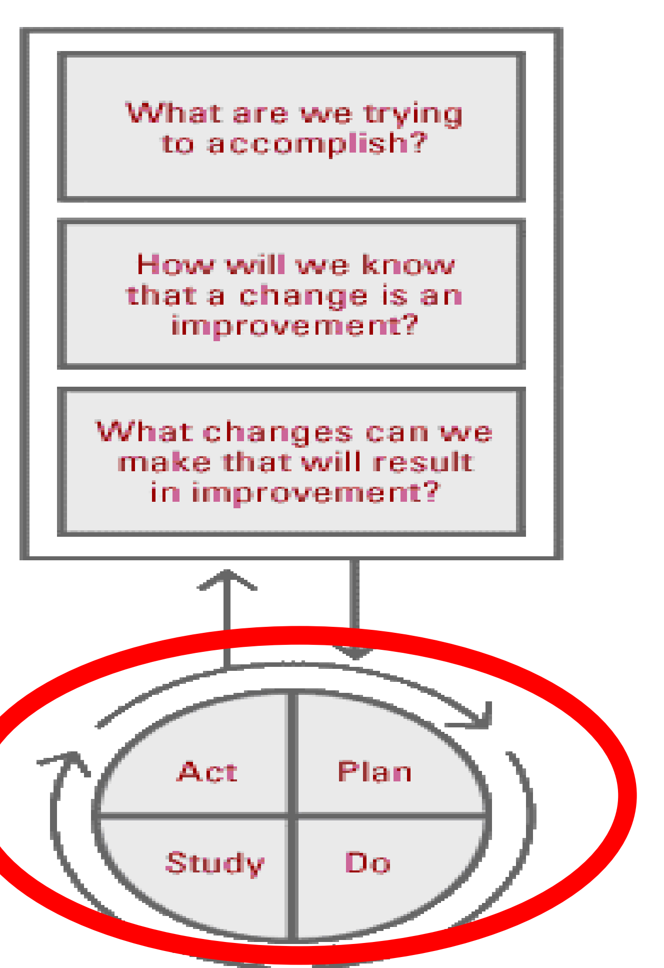
Major activities of all IPC sites:

- 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

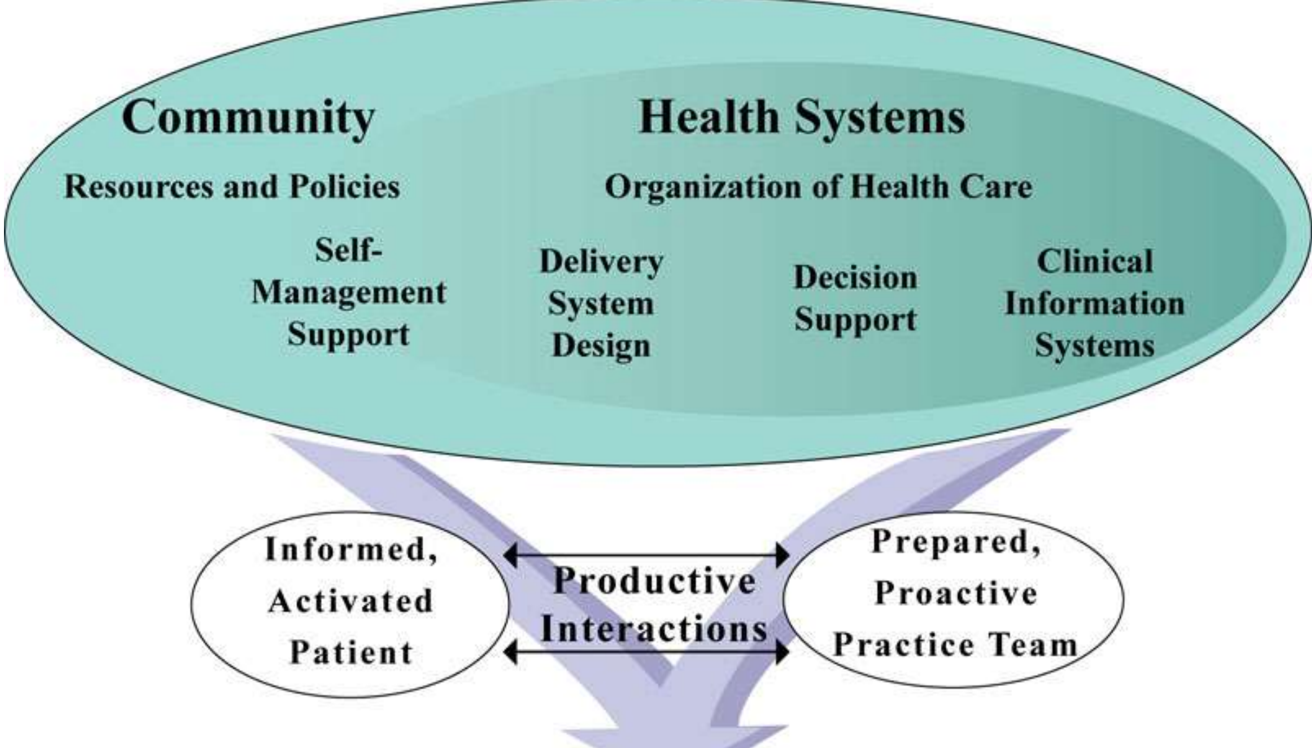


The Plan-Do-Study-Act (PDSA) cycle is a process for testing a change:

(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.

Langley GL, Nolan KM, Nolan TW, Norman CL, Provost LP. The Improvement Guide: A Practical Approach to Enhancing Organizational Performance.

Indian Health Medical Home: based on Chronic Care Model



(Wagner 2003)

Assure Quality of Care

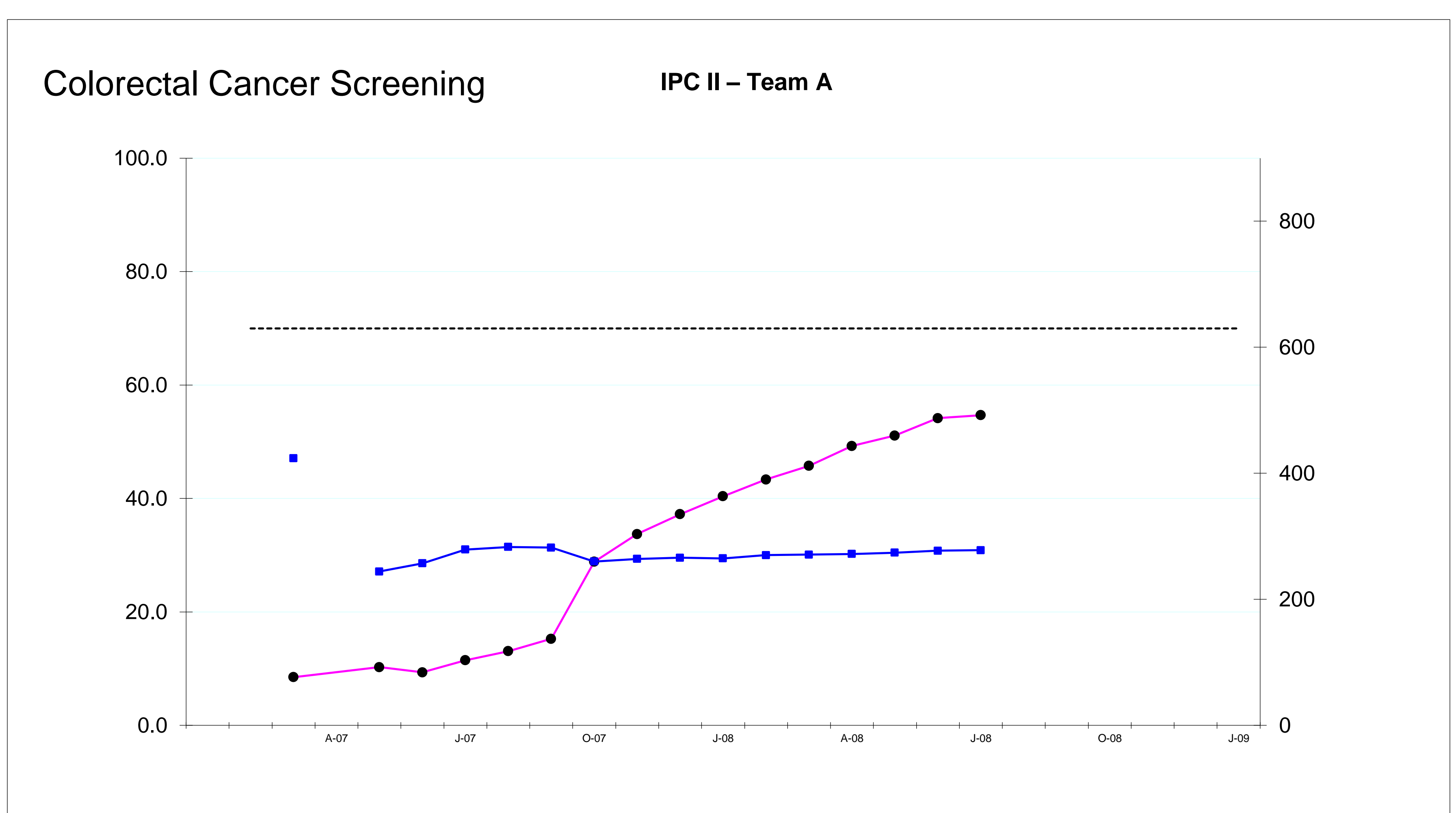
- **Health Care Organization:** Create a culture, organization and mechanisms that promote safe, high quality care among all I/T/U health programs.
- **Community Resources and Policies:** Mobilize community resources to meet needs of patients among all I/T/U health programs.
- **Self Management Support:** 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

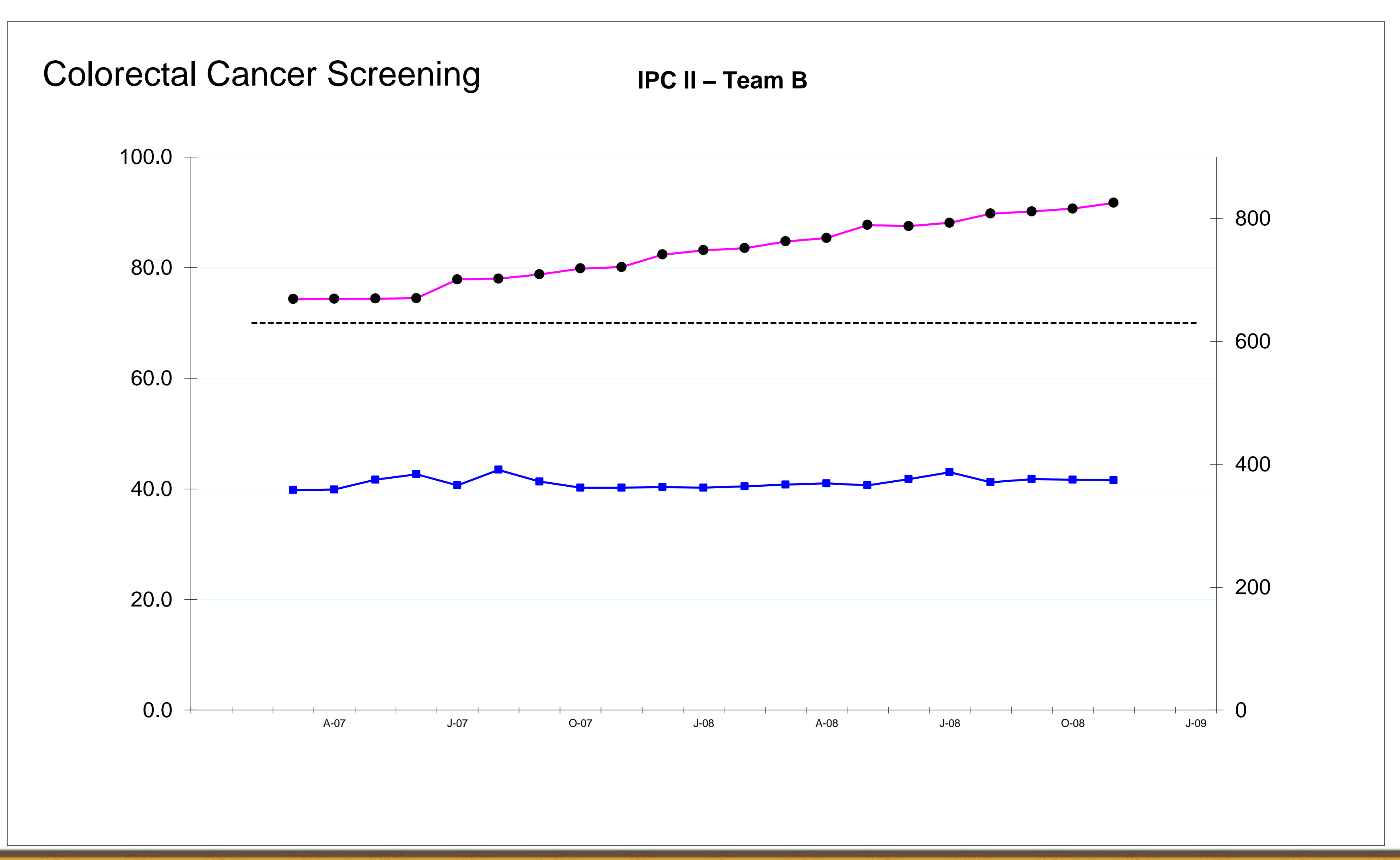
Measurement Domain	Measure Indicators
Adult: **Clinical Process Measures**	**Adult GPRA Measures:** Diabetes Comprehensive Care Cancer-related screenings Immunizations* Health Risk Assessments*
Management and Prevention of Chronic Conditions	**Control Measures:** Control of Blood Pressure Control of 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: *"They give me exactly the help I want (and need) exactly when I want (and need) it."*

Measurement Domain	Areas of Focus/Coverage	Core Measure(s)	Goal	Notes
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%	

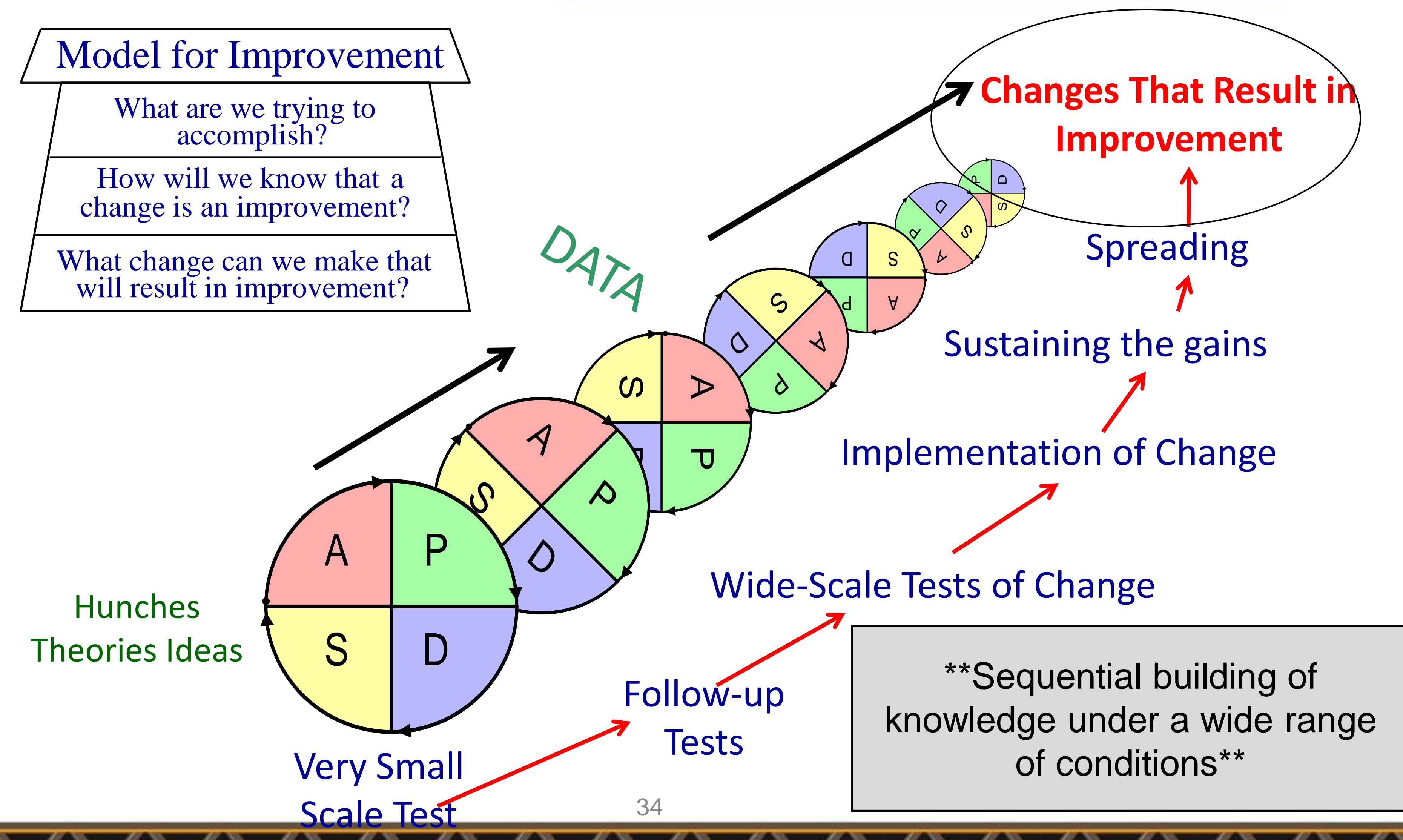
IPC “Microsystem” A



IPC “Microsystem” B



PDSA Cycle for Microsystems: Data is the Fuel!



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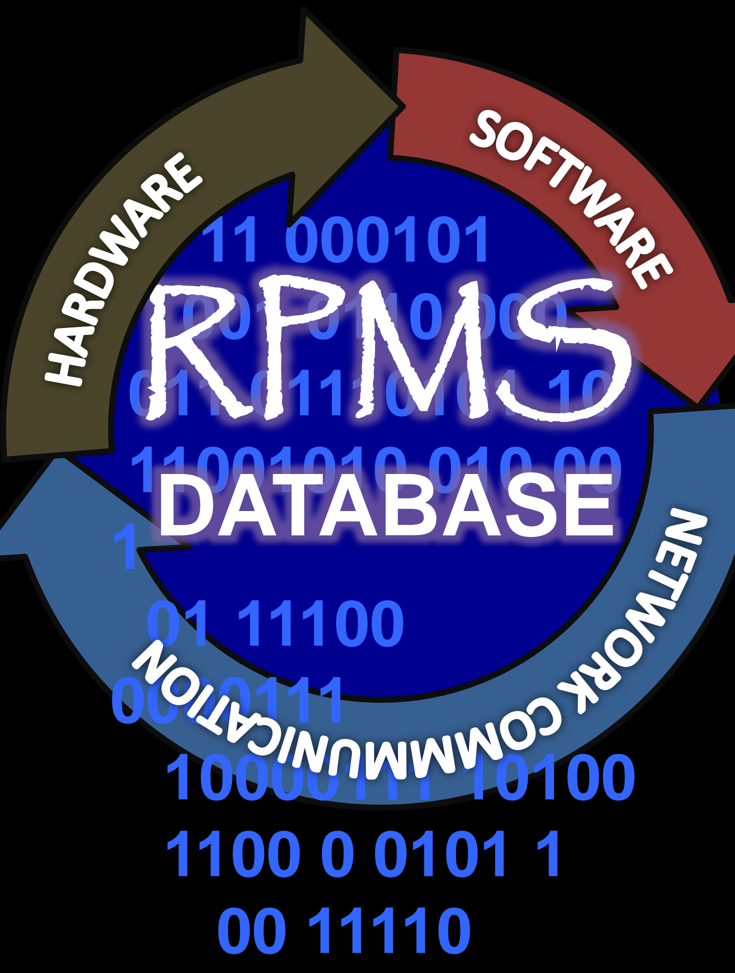
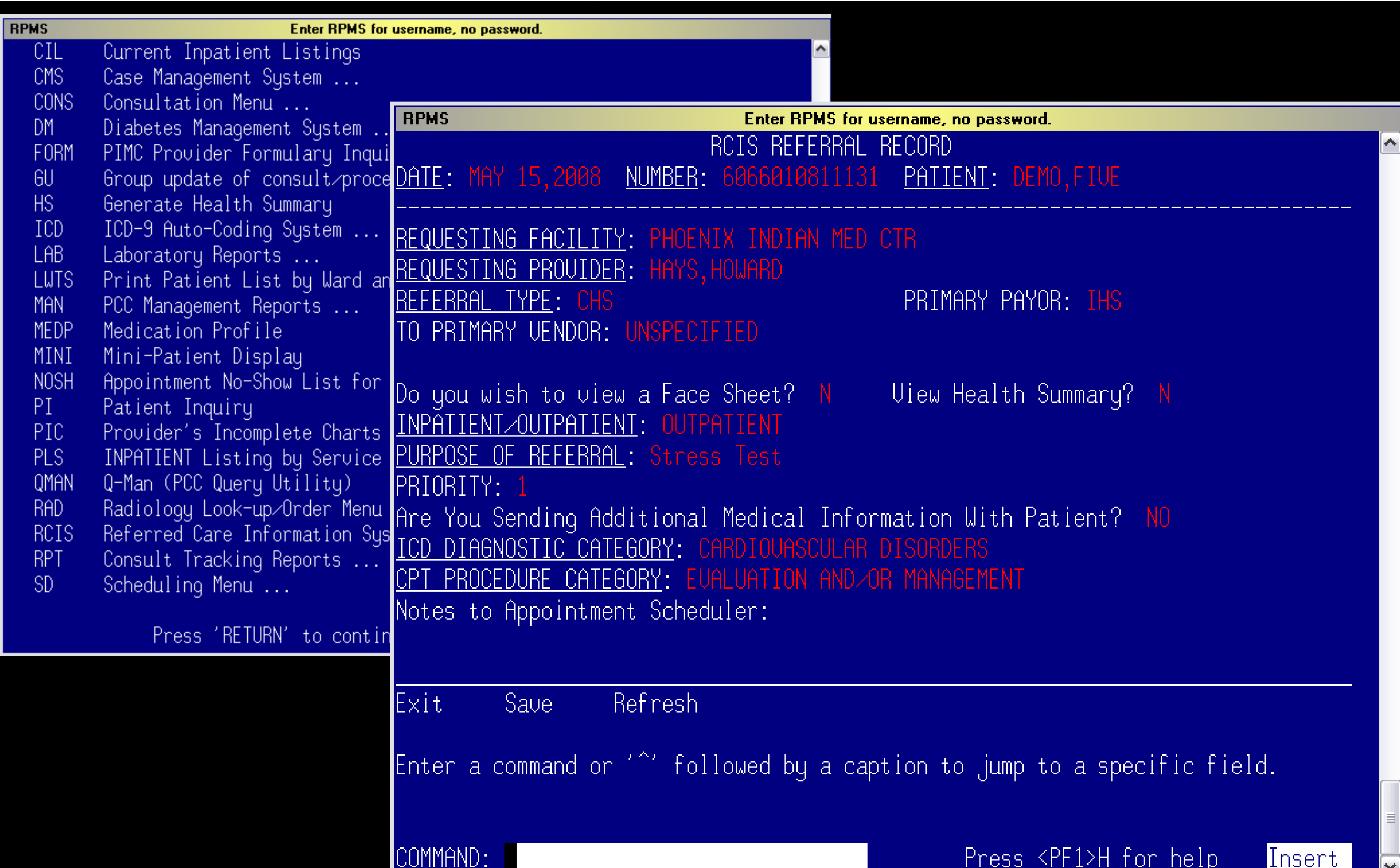
Resource and Patient Management System



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

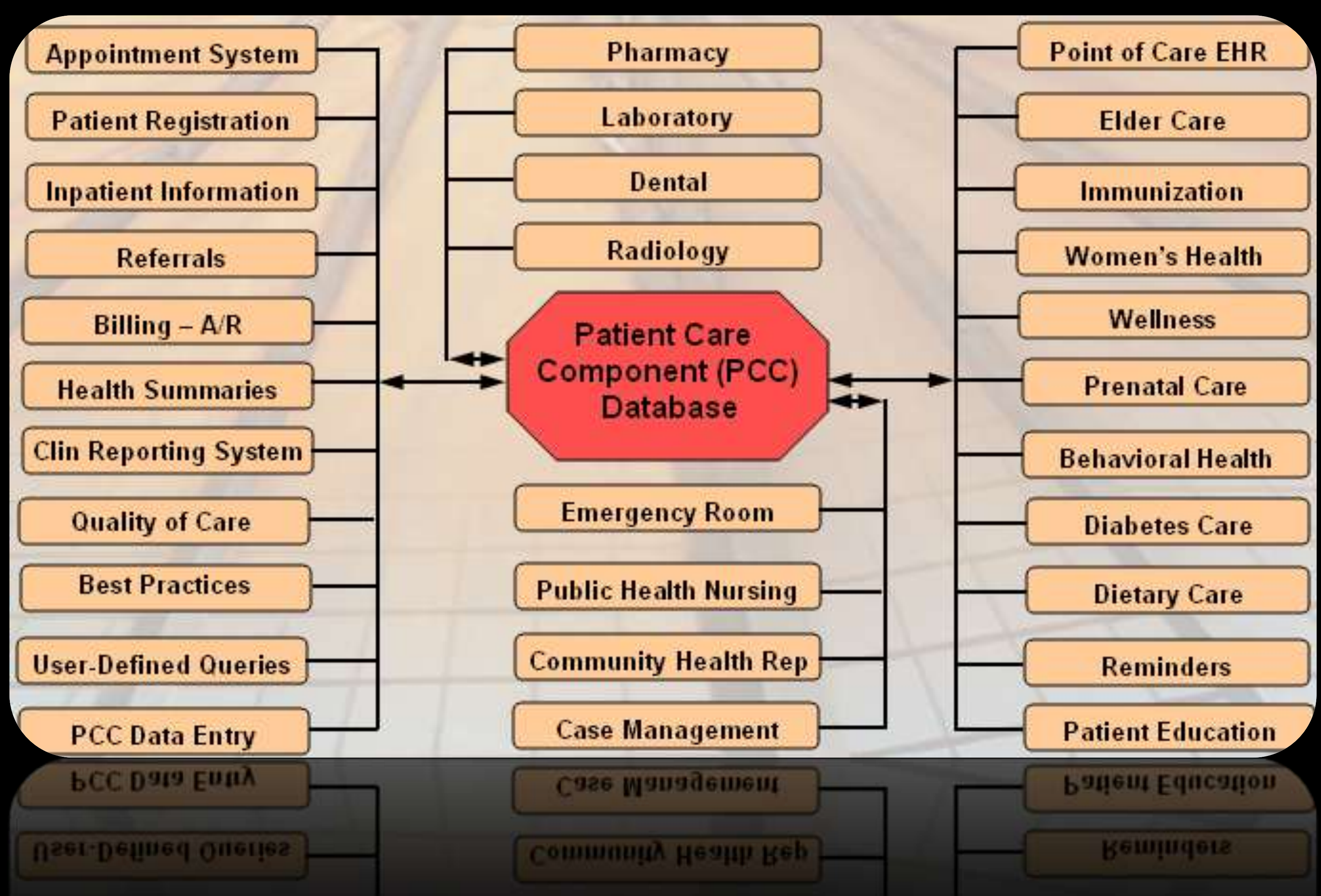
Typical RPMS Legacy Interface



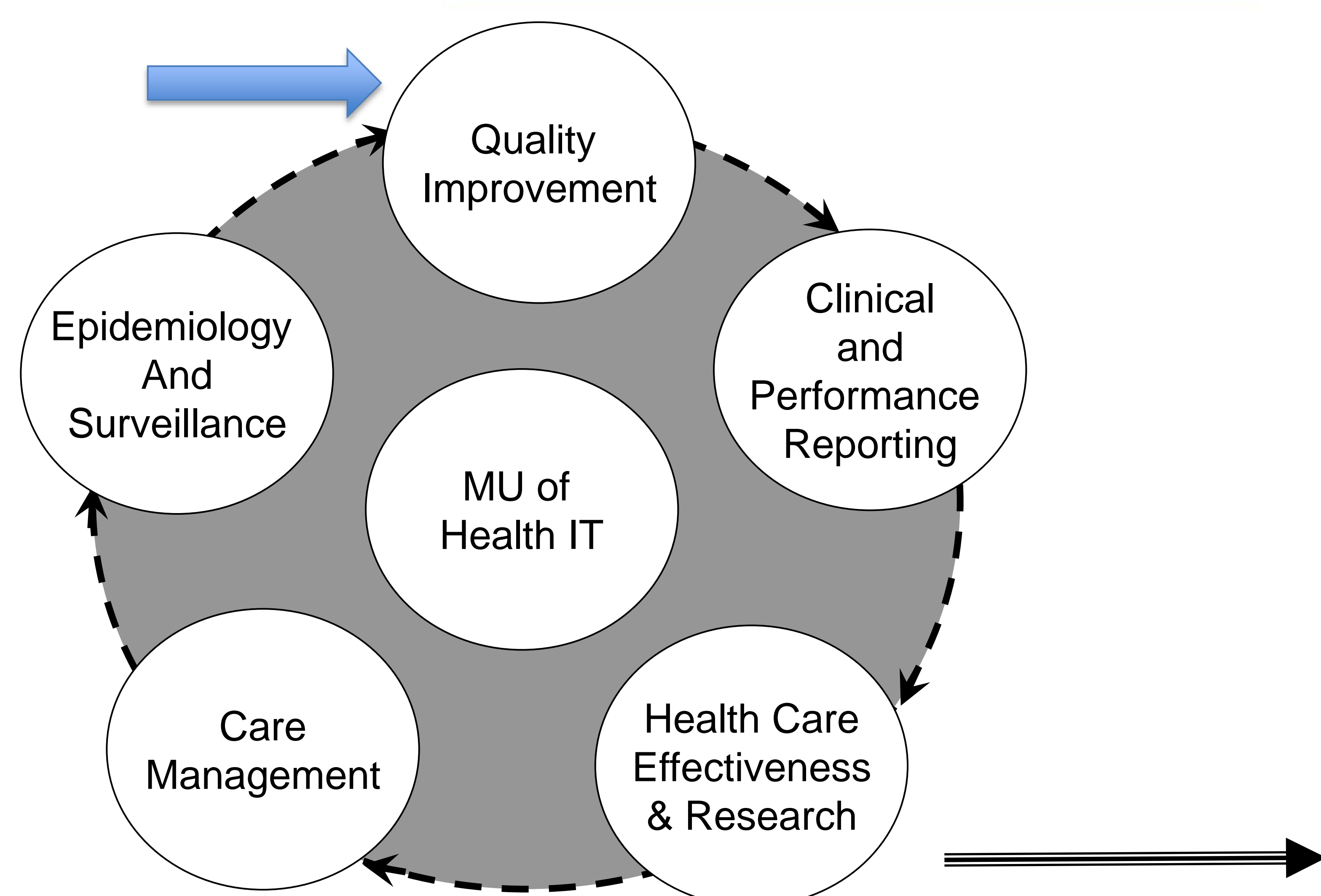
Electronic Health Record
Patient Centric GUI

CCHIT CERTIFIED
Ambulatory EHR
2007

RPMS: Patient Care Component

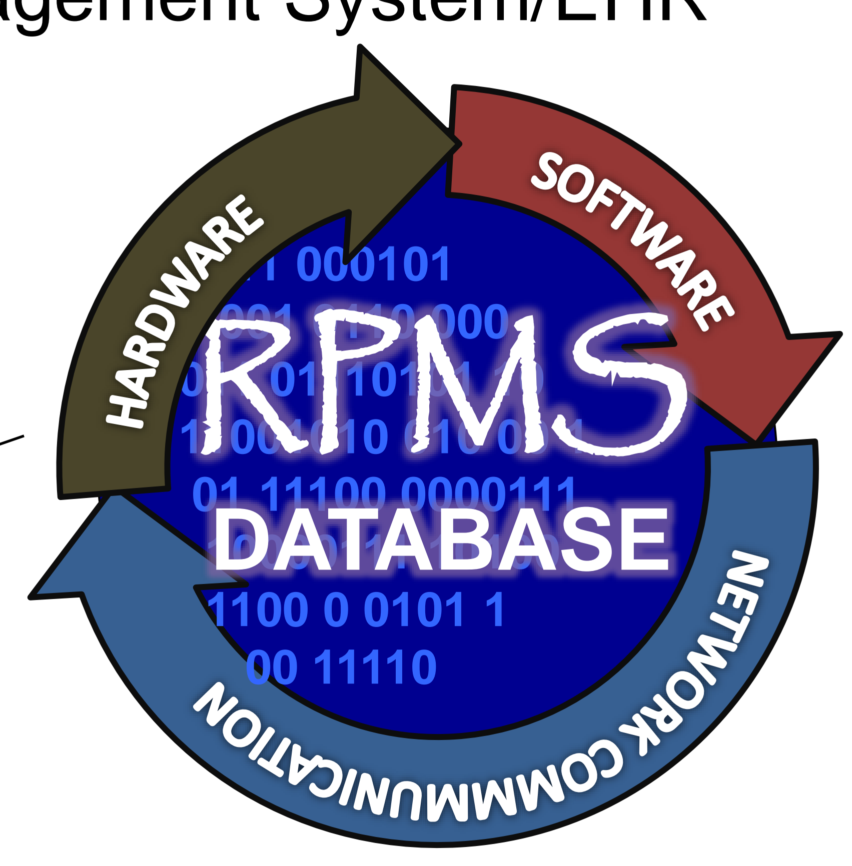


IHS Population Health Informatics



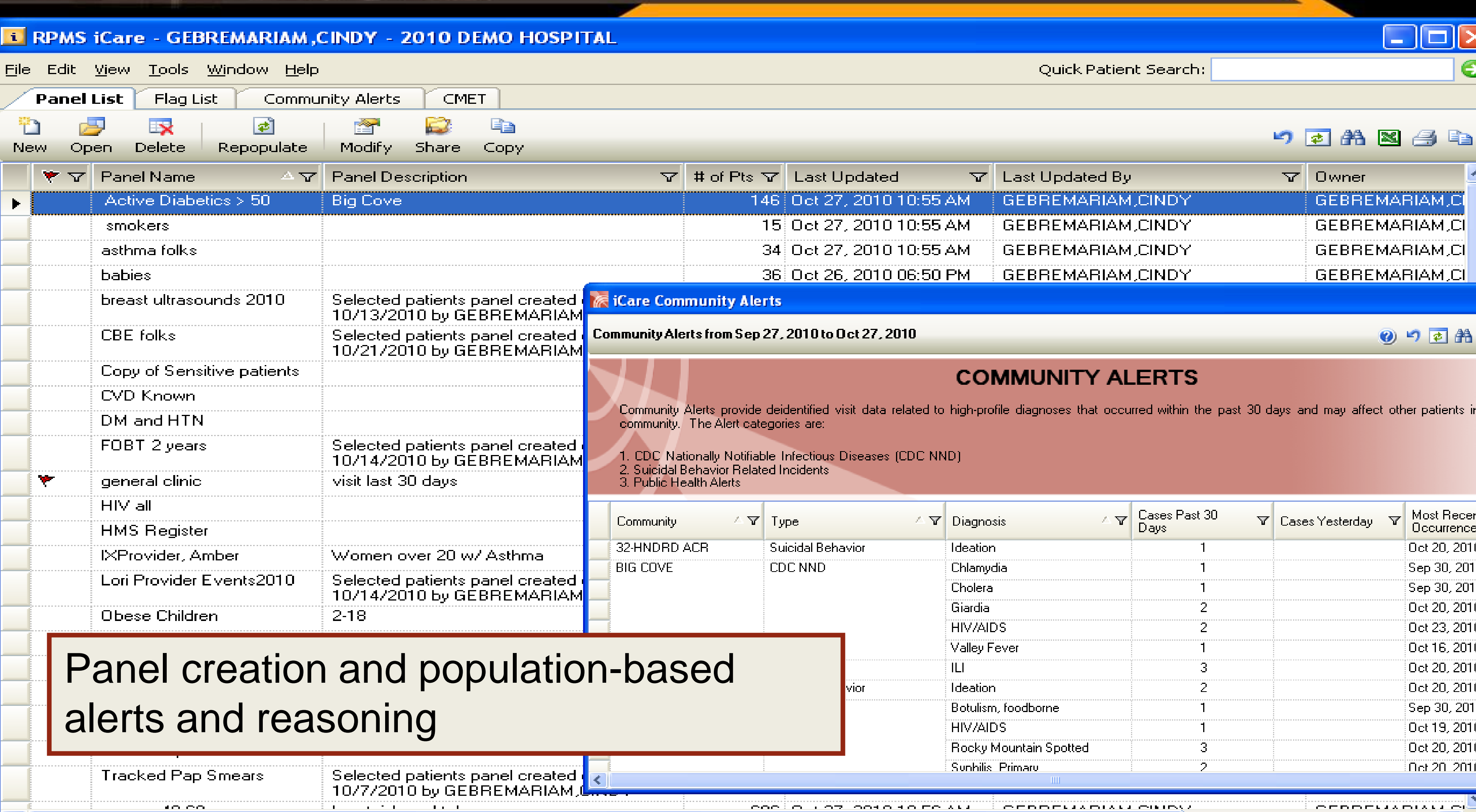
IHS Population Health Applications

Resource and Patient Management System/EHR



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

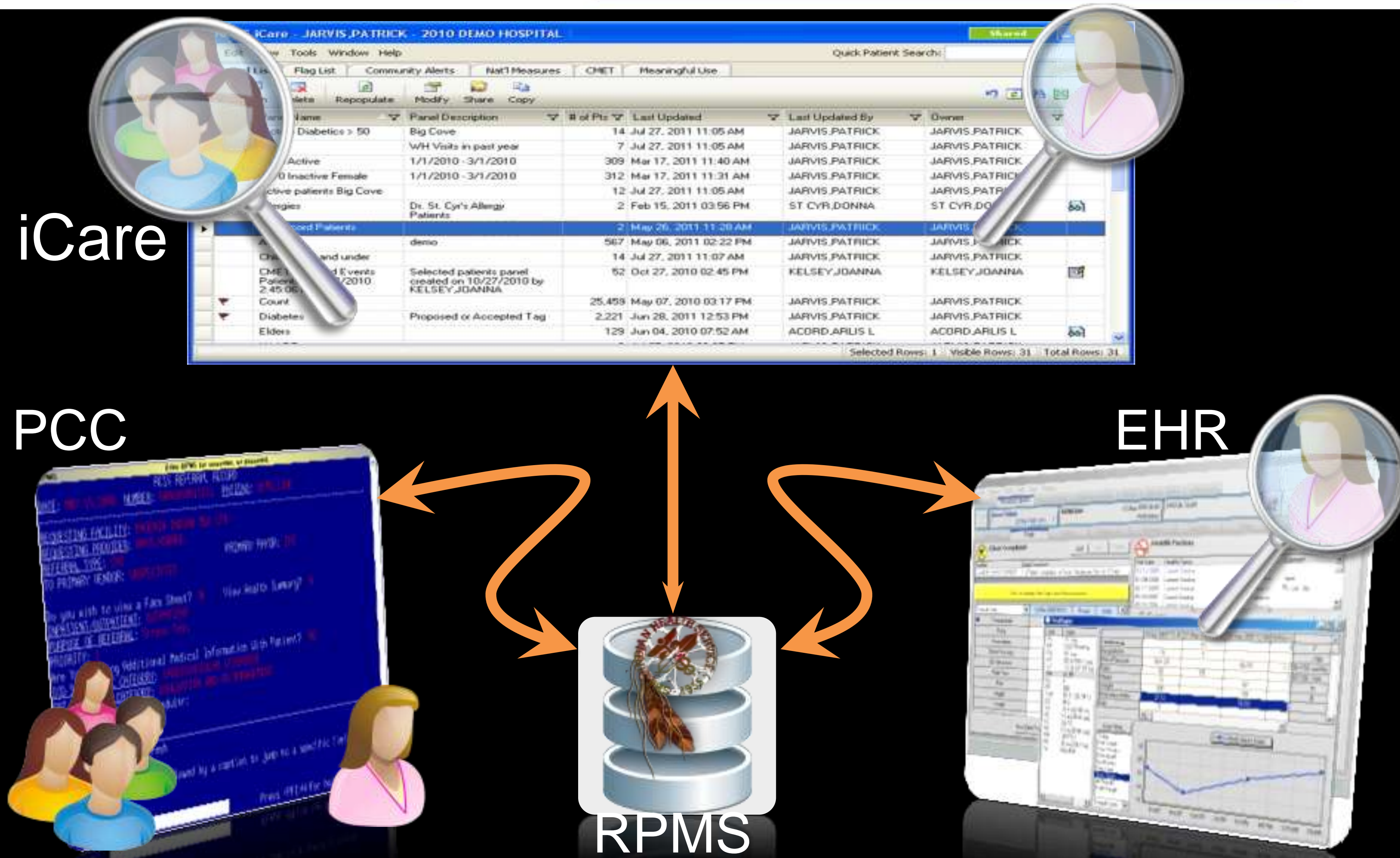
iCare – The IHS Tool for Population Management



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 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

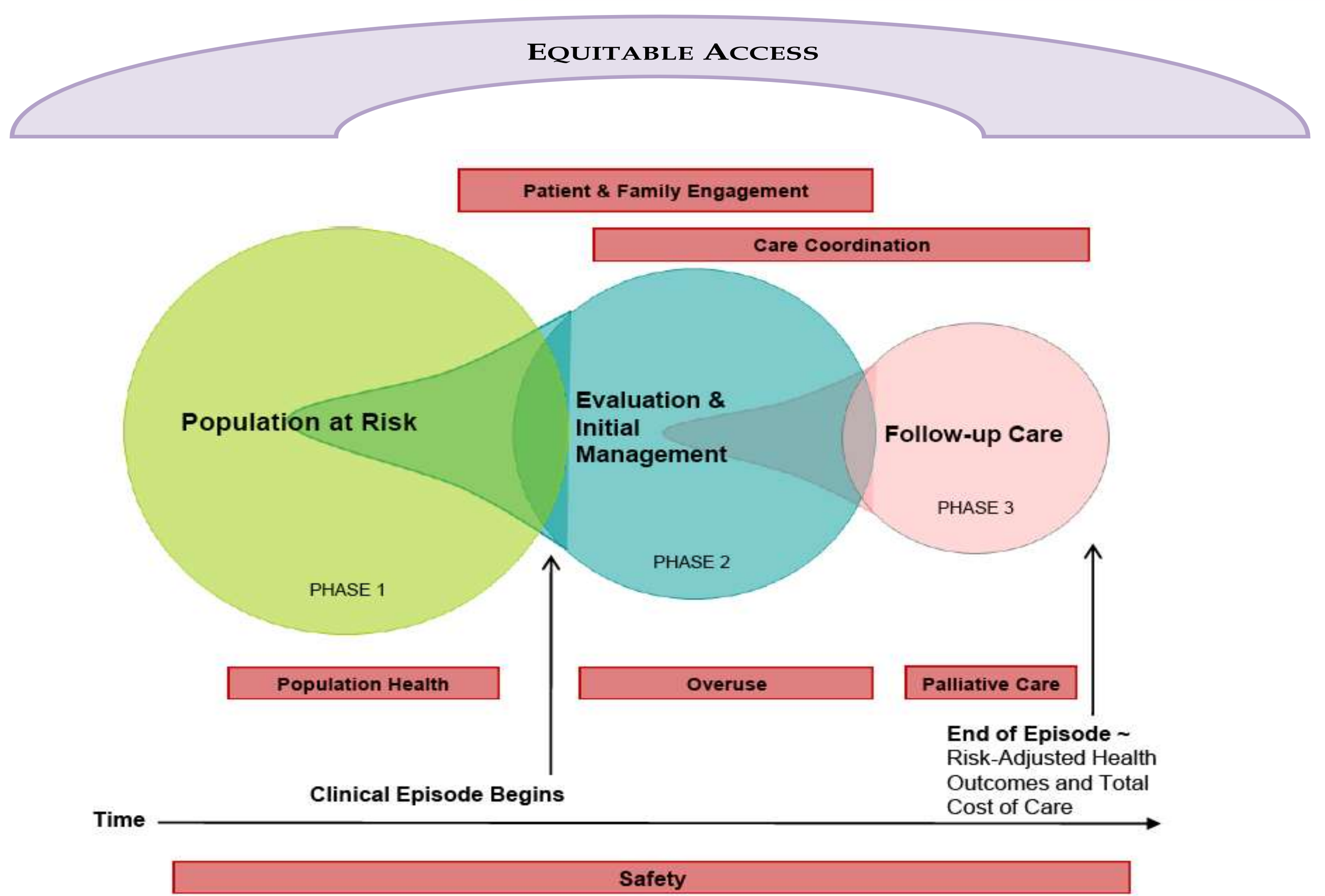
PCMH 5: Track and Coordinate Care

- 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



© National Priorities Partnership

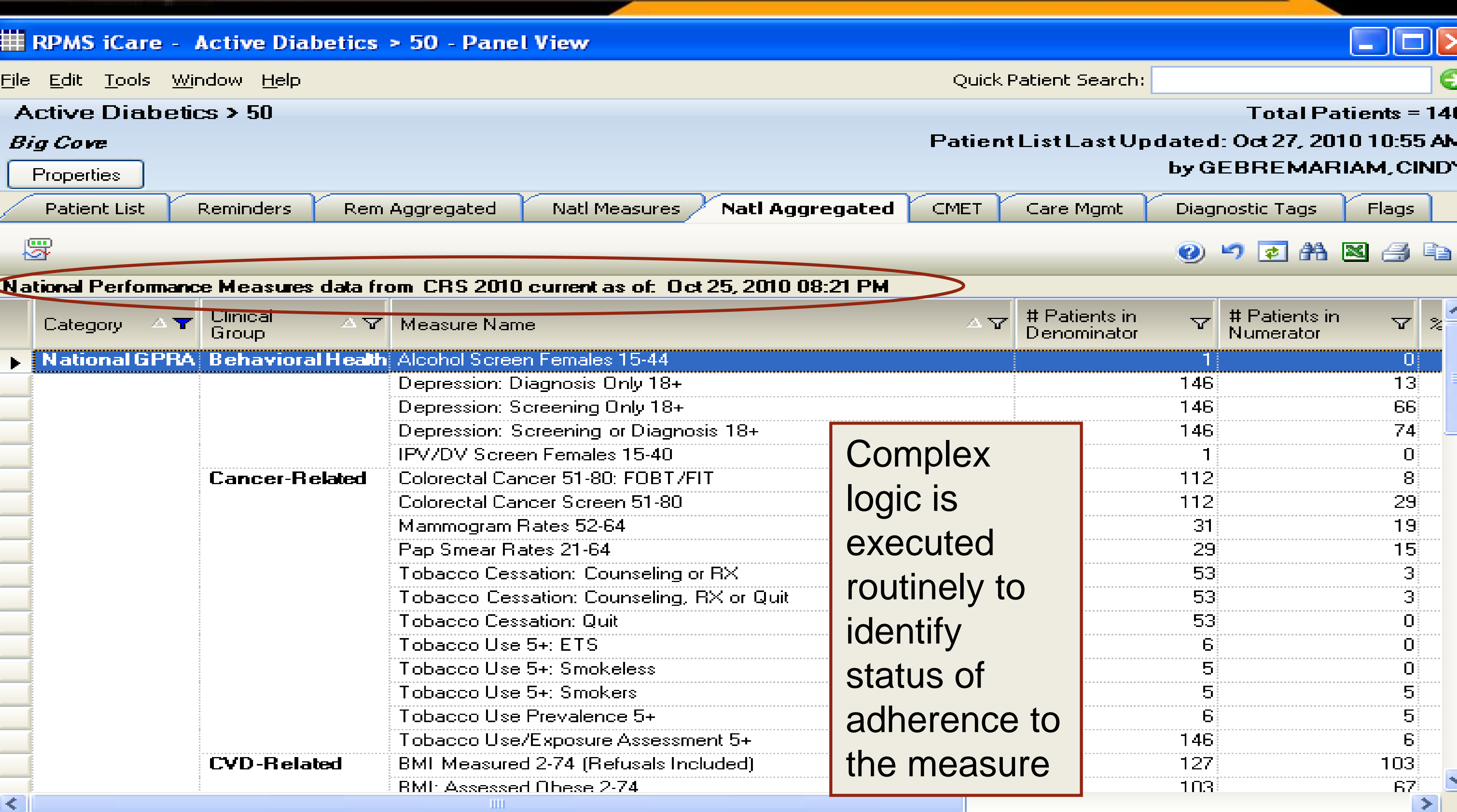
IHS Quality of Care

- 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?

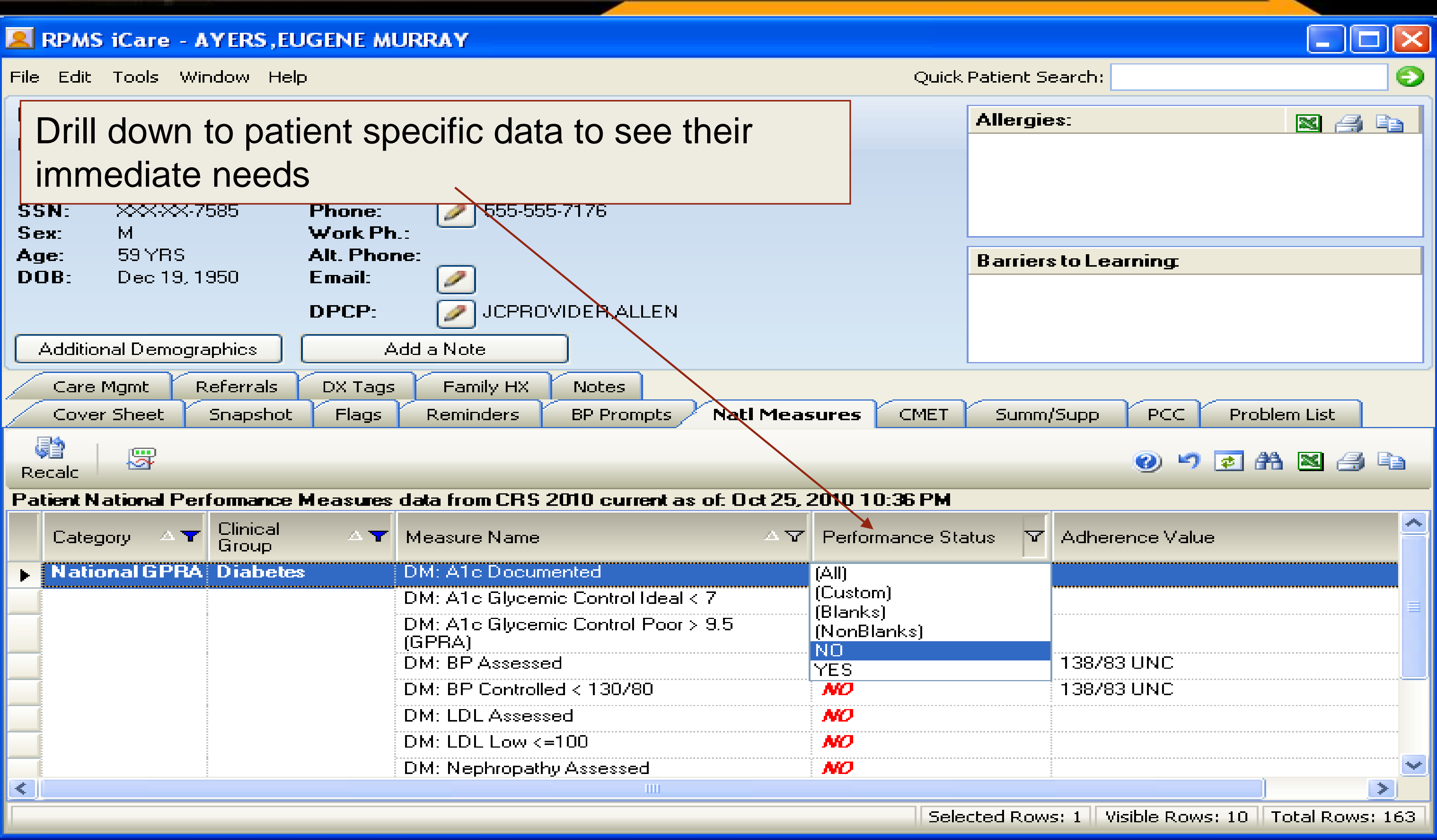
- Improving Patient Care
- Meaningful Use Measures
- National Programs:
  - Diabetes
  - Dental
  - Immunizations
  - Cancer Screening
  - Behavioral Health
  - Cardiovascular Disease
  - Prenatal HIV Screening
- Composite measures, including
  - Diabetes care
  - CVD care
  - Cancer screening
  - HIV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

iCare – National Measures



Category	Clinical Group	Measure Name	# Patients in Denominator	# Patients in Numerator
National GPRA	Behavioral Health	Alcohol Screen Females 15-44	1	0
		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 Obese 2-74	103	67

Direct Link to Patient Record



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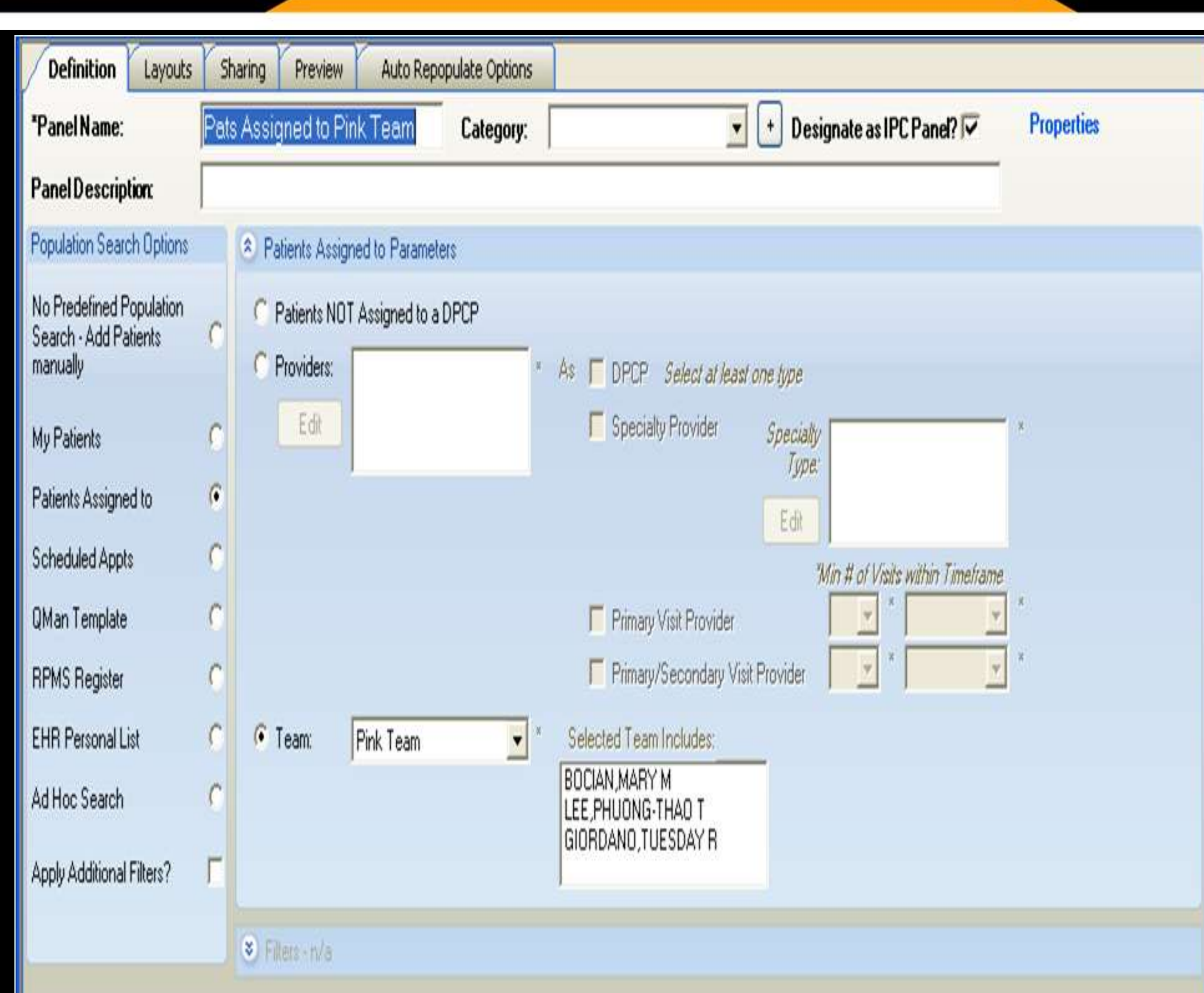
Team Panel Definition

Designate a panel as an "IPC" panel.

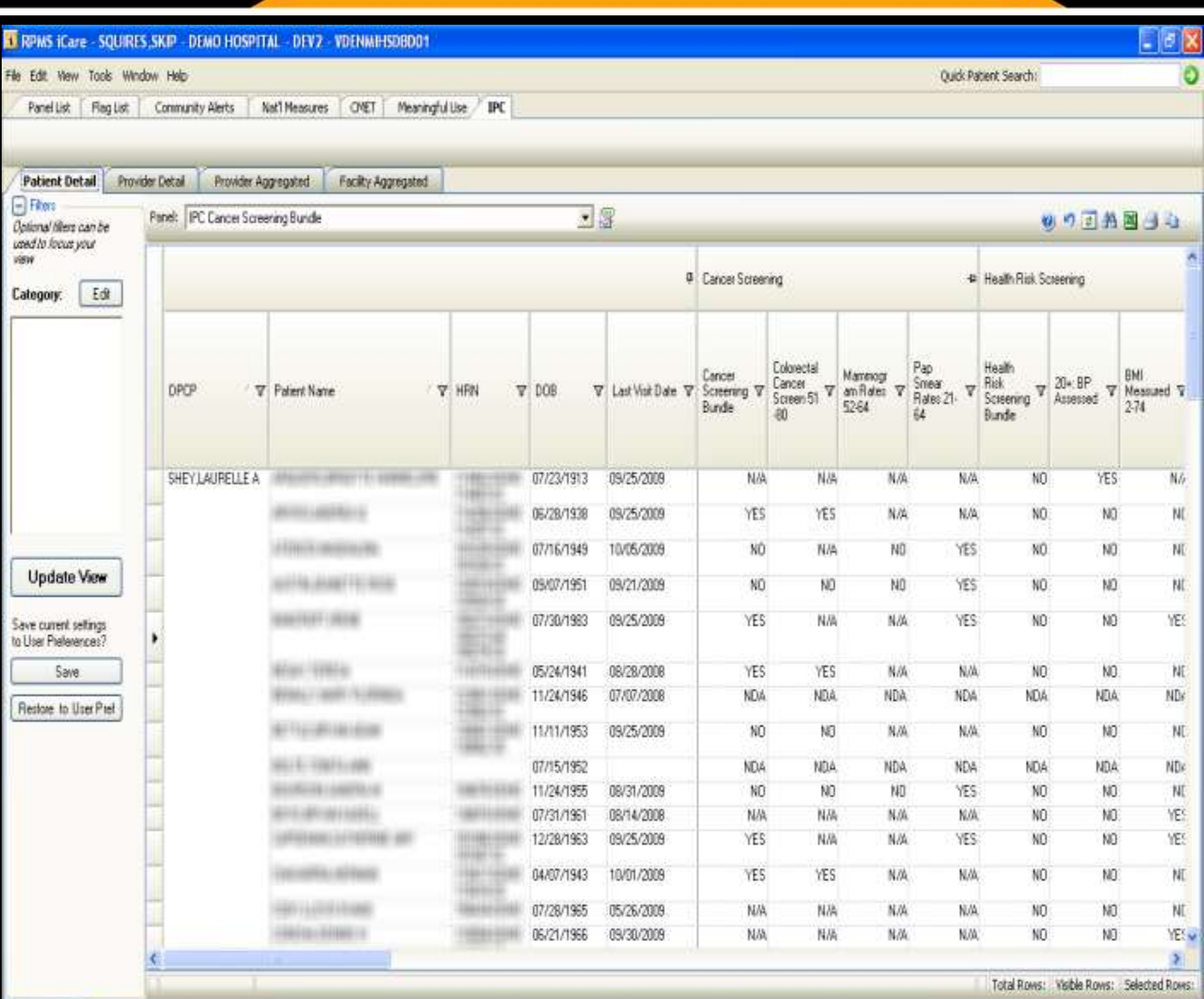
Enhanced Panel Definitions to accommodate teams and microsystems.

Additional filters will include "Labs" and "Medications".



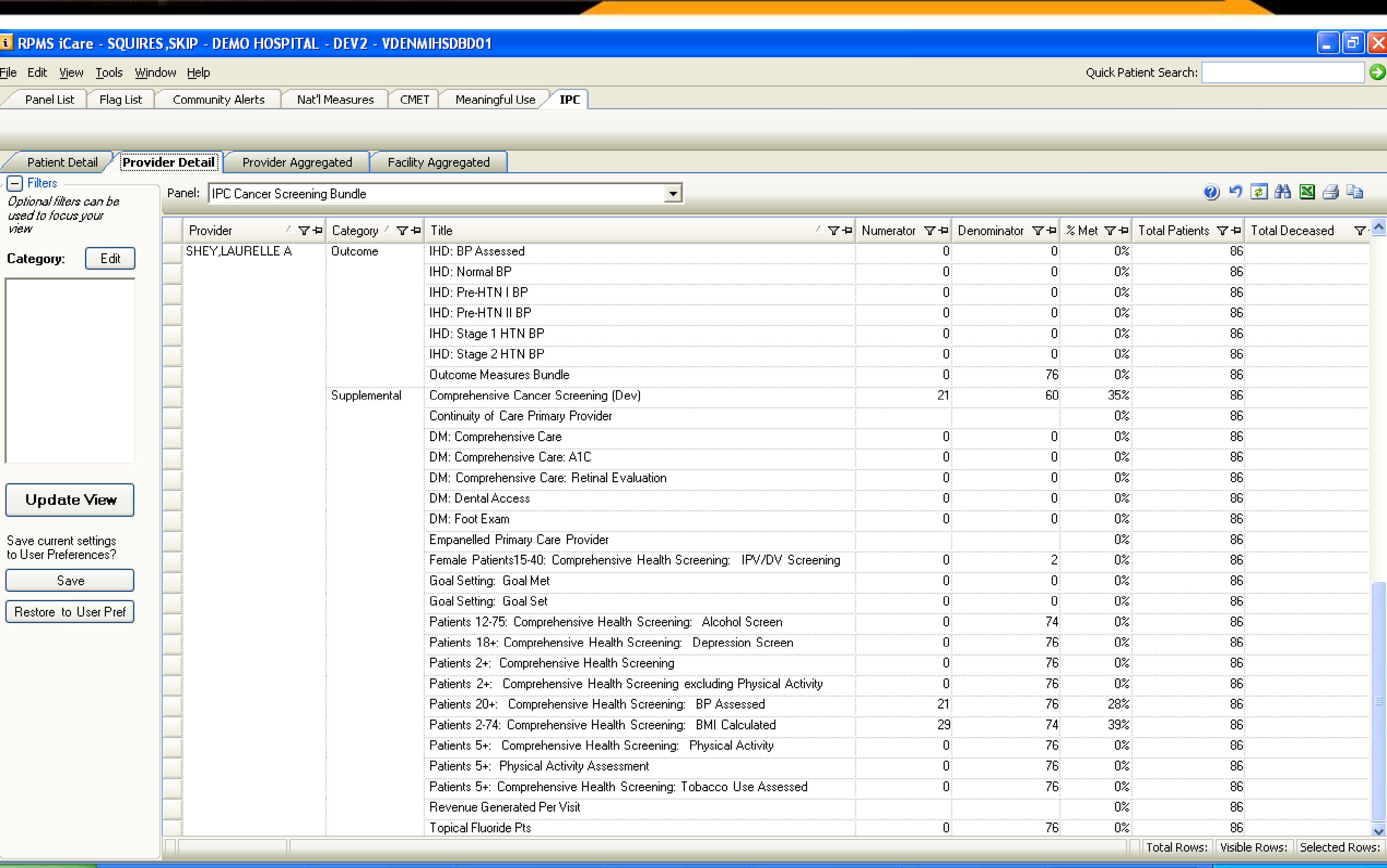
IPC/Patient Detail

Pull “IPC” panel data. Measures divided into Core measures.



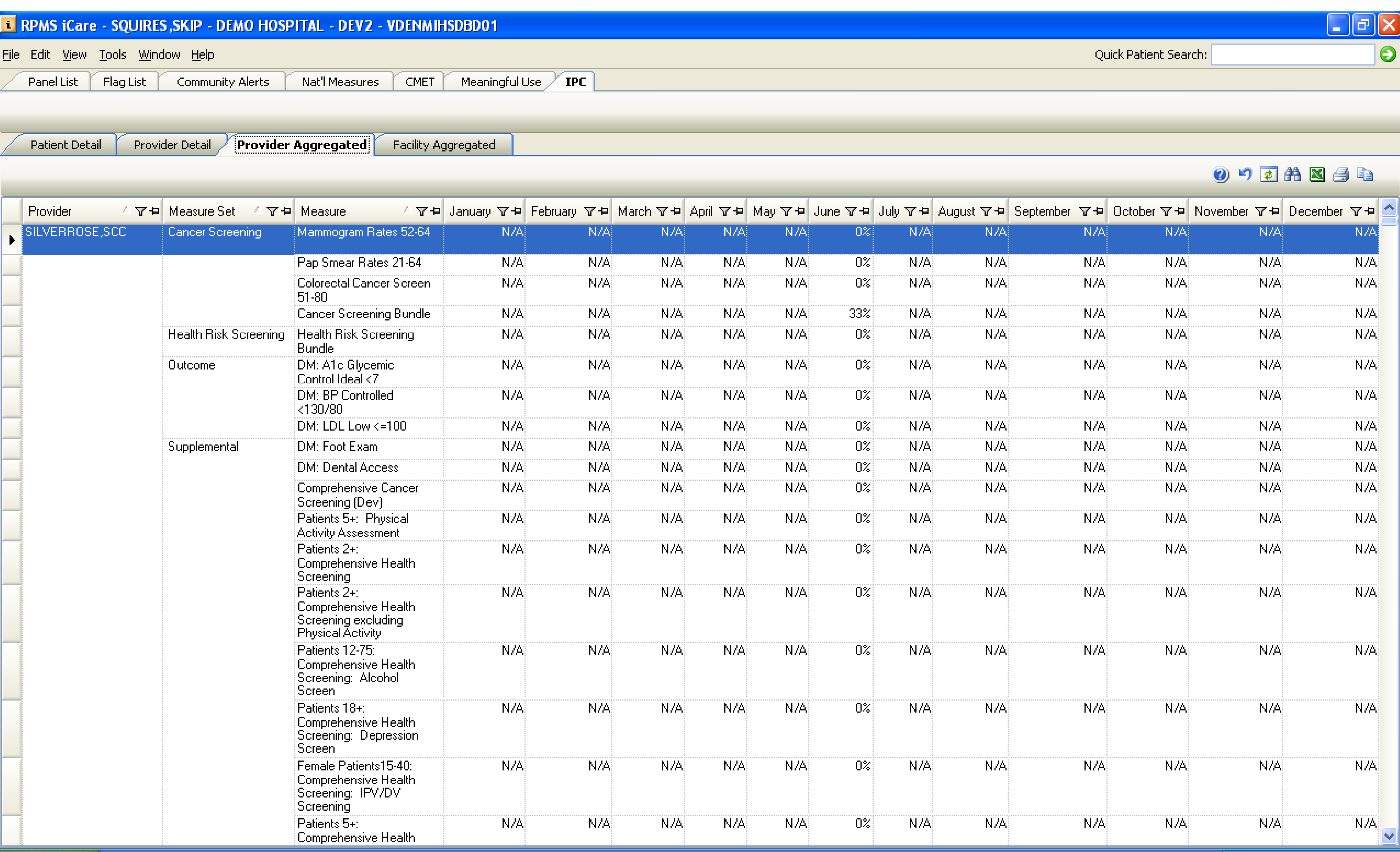
DPCP	Patient Name	HRN	DOB	Last Visit Date	Cancer Screening Bundle	Colorectal Cancer Screen 51-80	Mammogram Rates 52-64	Pap Smear Rates 21-64	Health Risk Screening Bundle	20+ BP Assessed	BMI Measured 2-74
SHEY,LAURELLE A			07/23/1913	09/25/2009	N/A	N/A	N/A	N/A	NO	YES	N/
			06/28/1938	09/25/2009	YES	YES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

IPC/Provider Detail



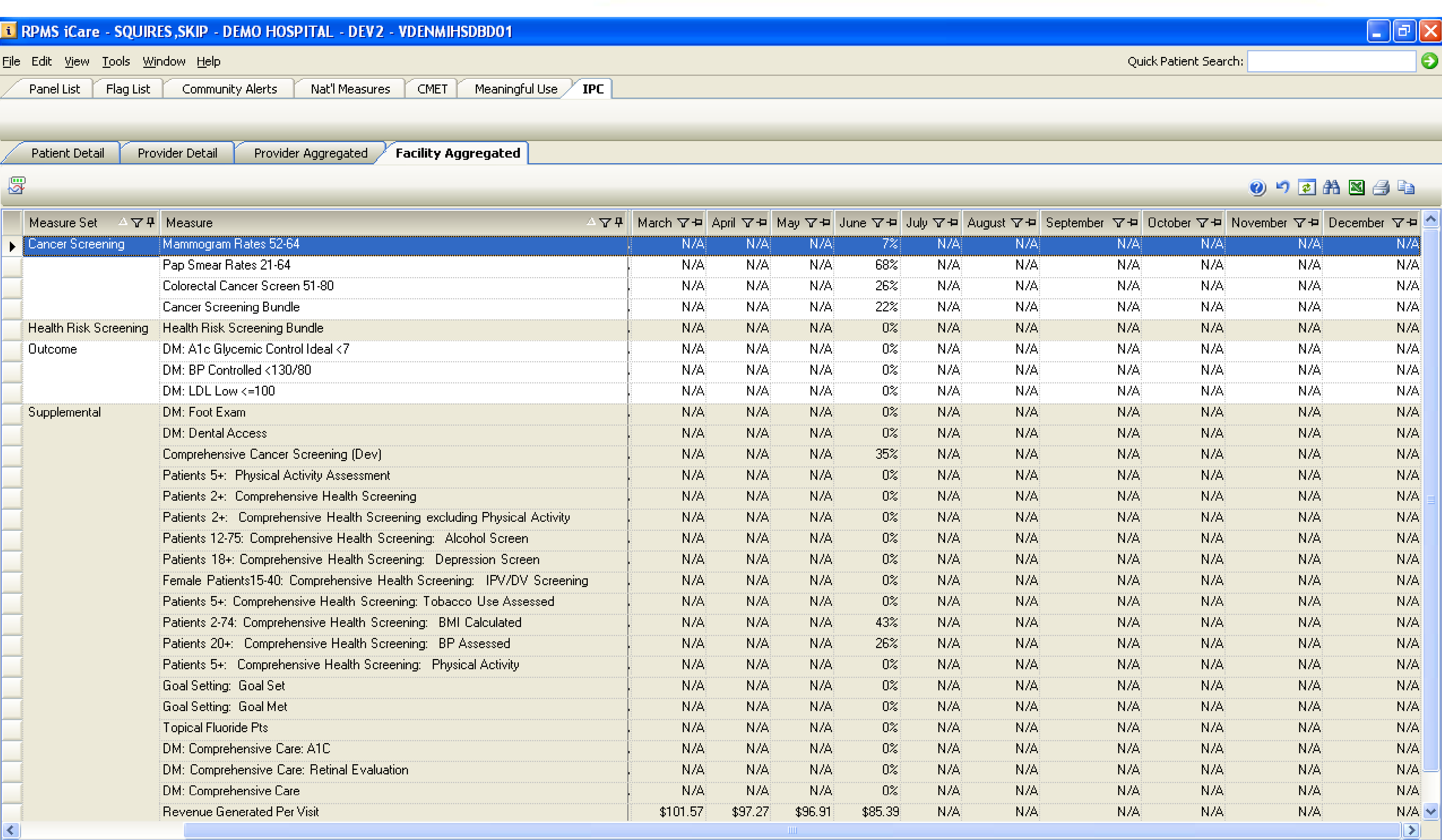
Provider	Category	Title	Numerator	Denominator	% Met	Total Patients	Total Deceased
SHEY,LAURELLE A	Outcome	IHD: BP Assessed	0	0	0%	86	
		IHD: Normal BP	0	0	0%	86	
		IHD: Pre-HTN I BP	0	0	0%	86	
		IHD: Pre-HTN II BP	0	0	0%	86	
		IHD: Stage 1 HTN BP	0	0	0%	86	
		IHD: Stage 2 HTN BP	0	0	0%	86	
		Outcome 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 Patients15-40: 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	

IPC/Provider 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	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	N/A
		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
	Supplemental	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 Patients15-40: 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



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 Patients15-40: 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
	Goal Setting: Goal Met	N/A	N/A	N/A	0%	N/A	N/A	N/A	N/A	N/A	N/A
	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

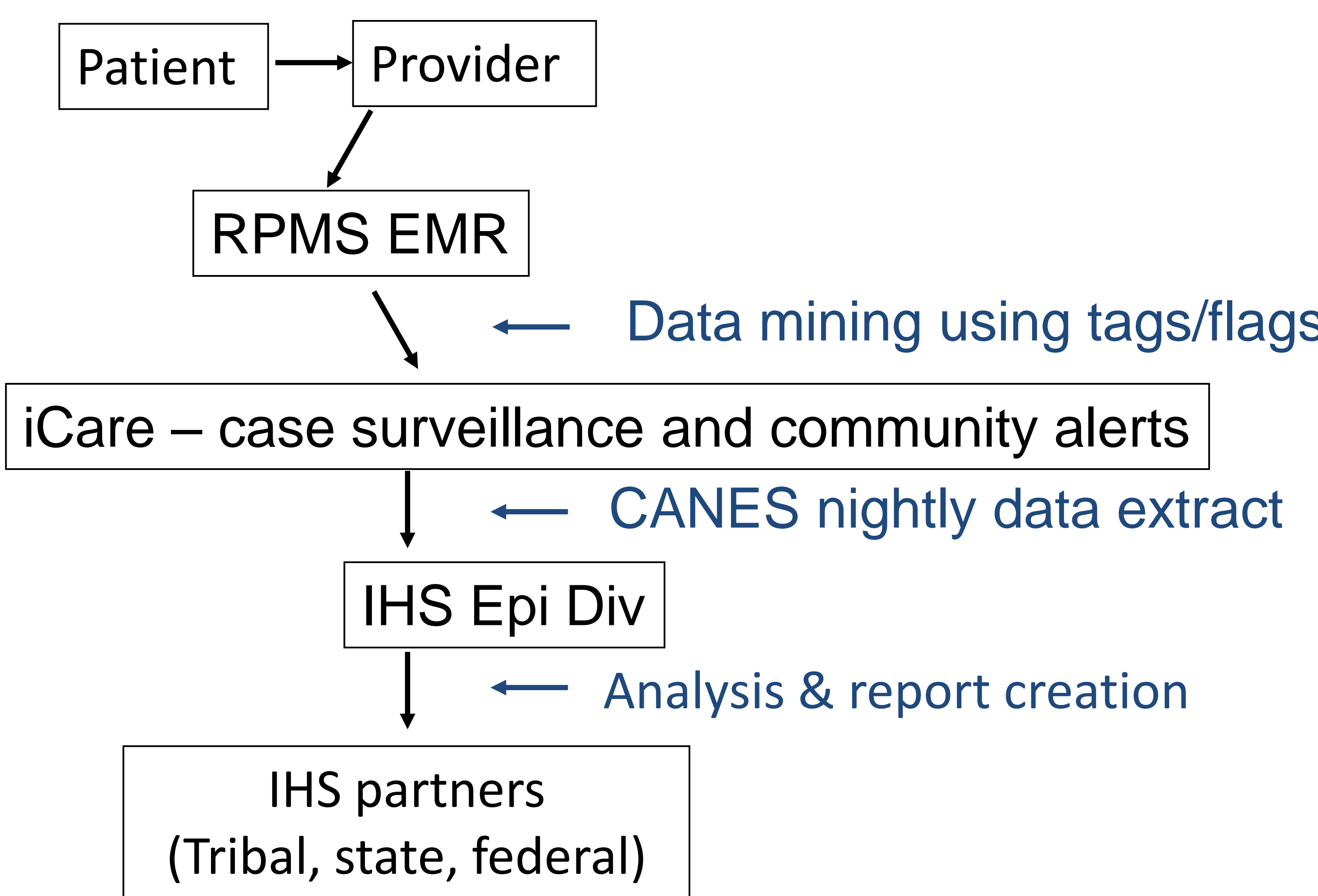
iCare – Background Processes

- 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

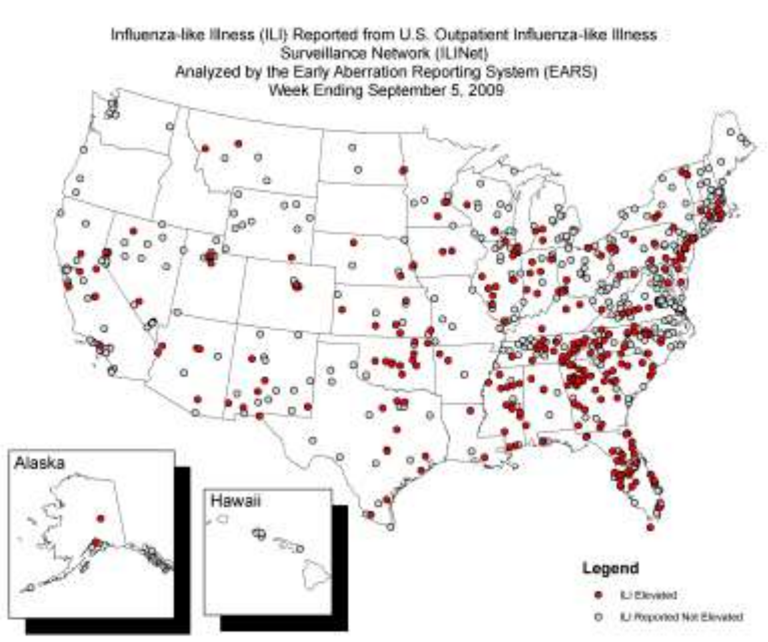
- Splash Screen at first login of the day
- Anonymous
- Related to Community of Residence
- Ready Access from many views: Opening View; Panel View; Patient Record
- User-defined display

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