

Promoting the advancement of the Health, Safety, and Well-Being of the American People

The Role of Informatics in New Healthcare Delivery Organizations: Medical Home and ACOs

MEBI 590 - Autumn 2011 Biomedical and Health Informatics Lecture Series December 6, 2011 Theresa Cullen, MD, MS HHS IT Doman PMO HHS

DISCUSSION

- Developing a health informatics road map to support redesigned delivery models is essential to achieving the goal of health equity.
- The success of Patient Centered Medical Homes and Accountable Care Organizations is dependent upon appropriate information technology support.
- Further assessment is needed to determine what program needs and functions are currently met as well as what is needed to transform and increase meaningful use, improve quality, and further overall community health.

Health Care Action Imperative

- Usual approaches to change are inadequate
 - Current health care model is unsustainable
 - High innovation and success in scientific advances
 - Little innovation and success in transforming care delivery model
 - Most HIT only mimics what you used to do, not what we should do
 - Technology doesn't match workflow
 - Technology doesn't augment workflow
 - Workflow may be the problem
- Little innovation and success in care delivery model
- Historically limited success in health care delivery demonstration models
 - Difficult to isolate predictors for success from medical home pilots
 - Relationship to underutilizing IT infrastructure
 - Is it the right infrastructure
- Proposed New Models- Medical Home/ Accountable Care Organizations
 - Novel? New? Old model with new name?



Why do we do this?

FOR THE PATIENT
FOR THE FAMILY
FOR THE COMMUNITY
FOR THE POPULATION



Health and HIT

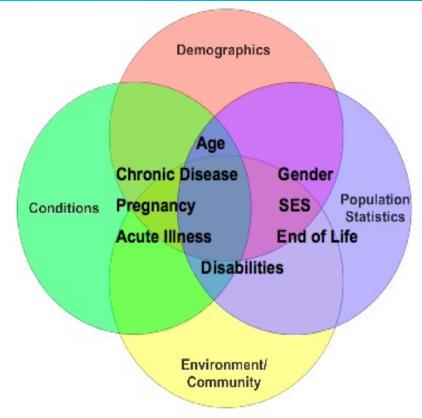
THERE IS MAGIC HERE!

- This is a long, arduous journey
- Innovative HIT makes a difference
- Key Elements of Success in HIT system
 - Broad Picture of Health
 - Clinical Voice at the Table
 - Attention to the Family and Community
 - Making it Work



A Broader Picture of Health

- > Personal Health
- > Family Health
- Community Health
- > Public Health
- Population Health
- > Transparency of Data



Patient and community sharing of informationdemographics, environment, population data, and health conditions

Henry Ford Moment

- True innovation of a new model of care
 - Lots of people doing innovation
 - Need high velocity change
 - Need art
- What is/are the new delivery model(s)
 - Patient
 - Provider
 - Family
 - Community



What do we know is required to change the outcome?

- Access to primary care
- Access to specialists
- Access to medications
- Sharing of information with providers
- Electronic health records
- Registries (or equivalent functionality)
- Performance measures
- Electronic reminders



All required but insufficient

- Radical Change
 - Go beyond tweaks
 - Innovation muted due to systemic flaws, slow cycle of development, wrong people at the table, suboptimal implementation and operation
- What do you really need to transform outcomes?
 - What is the right question to ask
- Systematized way of recording, aggregating and integrating health records
 - Inclusion of narrative medicine
- Scientific and humanistic decision making
- Care manager
- Sense of stability; piece of mind; optimism; touch



Key IT Questions For Programs

- What are the priorities that would change our investment goals?
- What are the program needs and functions that are not being met?
 - Can you standardize the question and the response?
- Which systems need to work better together?
 - What is the mechanism to share the data between and within
- What do we need to communicate better to make our systems or processes more useful?
 - What 'data' needs to be shared and how
- How to improve our systems? What should we add, what should we remove?
- What can we do to transform and increase meaningful use, improve quality, and further overall community health?



Principles of the PCMH

- Personal physician (or health care team)
- Physician / Team directed medical practice
- Whole person/family/ community orientation
- Care is coordinated and/or integrated
- Quality and safety
 - Practices advocate appropriately for their patients
 - Evidence-based medicine and clinical decision-support tools guide decision making.
 - Continuous quality improvement
 - Patients and families actively participate in decision-making
 - Information technology supports optimal patient care, performance measurement, patient education, and enhanced communication..
 - Patients and families participate in quality improvement activities at the practice level.
- Enhanced access to care
- **Payment** recognizes the value provided to patients who have a patientcentered medical home



Using IT to Support PCMH Resources that Matter

- Workflow and care must drive HIT
 - Ideal workflow and care
- Systems that support Redesign
 - For access, delivery, assessment, continuity
- Access to care
 - Mobile applications, telemedicine, changes in data access for decision making
- Health Information System
 - Robust, point of care, ability to on the fly assess data sets and return results
- Decision Support
 - At point of care, timely, comprehensive
- Self Management and Care Planning
 - Of patient, family and community



PCMH 2011

PCMH 1: Enhance Access and Continuity

- · Provide method to designate primary provider
- Create care teams
- · Monitor appointment wait times and office visit times
- Monitor access to specialists

PCMH 2: Identify and Manage Patient Populations

- Create defined panel lists
- Create and distribute reminders
- · Use of diagnostic tags to monitor disease/conditions
- Use of disease/condition-specific registries equivalents
- Provide demographic information
- · Facilitate Community outreach

PCMH 3: Plan and Manage Care

- Access to Health IT data from various system components
- Plan care through use of reminders
- Provide risk factor assessment, including falls
- · Facilitation of care management
- Monitor continuity of PCP and team care
- Include 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 online resources, health promotion and education
- Facilitate 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, MU, Improving Patient Care, ACO
- Patient, provider, facility and community level measurements
- Monitor ER and UC usage; readmission
- Monitor local patient/caregiver experience



Accountable Care Organizations

- Approach that embodies the triple aim
 - improvements in patient outcome/ quality
 - Improvements in population health
 - Cost efficiency
- Virtual integration through information
- Primary care/specialty/ sub-specialty/ hospital
- Integrated with medical home
- Shared financial risk
- Transformation to integrated care model



ACO challenges

- Incent by value
- Focus on individual as well as population (not a secondary use of data)
- Level of integration
- FFS to ACO: Cultural transformation of delivery model as well as payment model
- Shared savings distribution



What do you need for ACO

- ACO requirements based on final rule
 - HIT system is a weighted quality metric
 - 33 measures in 4 domains
 - Flexible start date in 2012
- HIT system needs
 - Clinical Information and POC information
 - Identify management/ MDM
 - HIE
 - Patient engagement
 - Care management and coordination
 - Performance management



Salient Points



- Connecting IT to the patient and the community requires IT that is pertinent to the patient and the community
- Once a need is identified, IT must respond quickly to these needs of the patient and community
- Understanding context and integrative effects is necessary for impact, change, and improving equity

One example: IHS Patient Centered Medical Home

- Elements of the Indian health medical home:
 - Care is centered on the patient and family health programs design their services to put the patient and family at the center of care.
 - A "care team" approach applies to highly functioning teams coordinating care to meet the needs of the patient.
 - Access and continuity of care Every patient has a relationship with a provider and care team, and has consistent and reliable access to that provider and care team.
 - A community focus guides all activities.



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



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

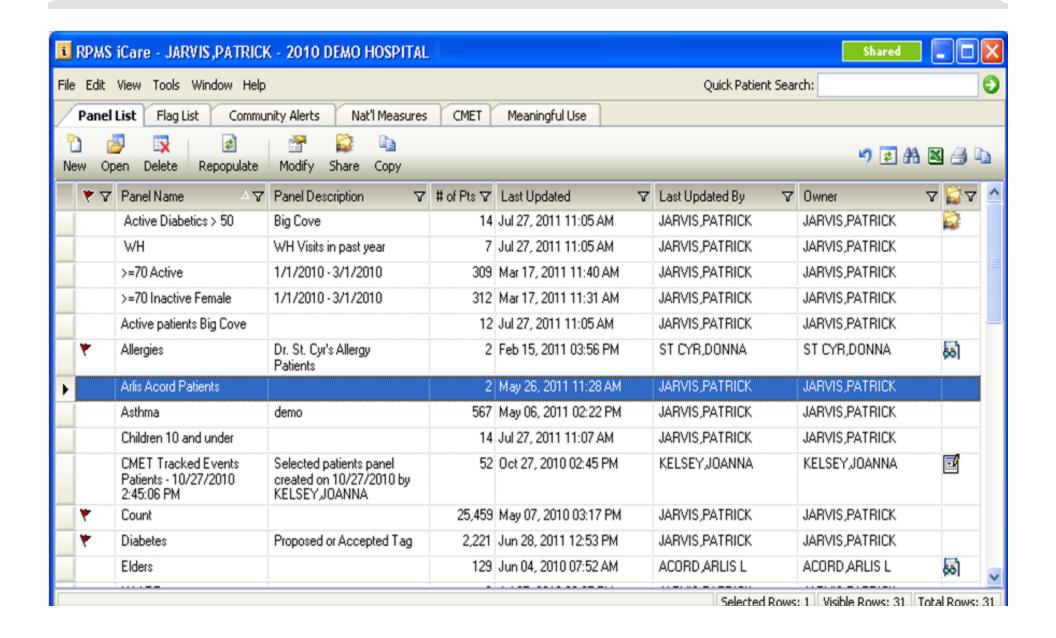


iCare - Community Alerts

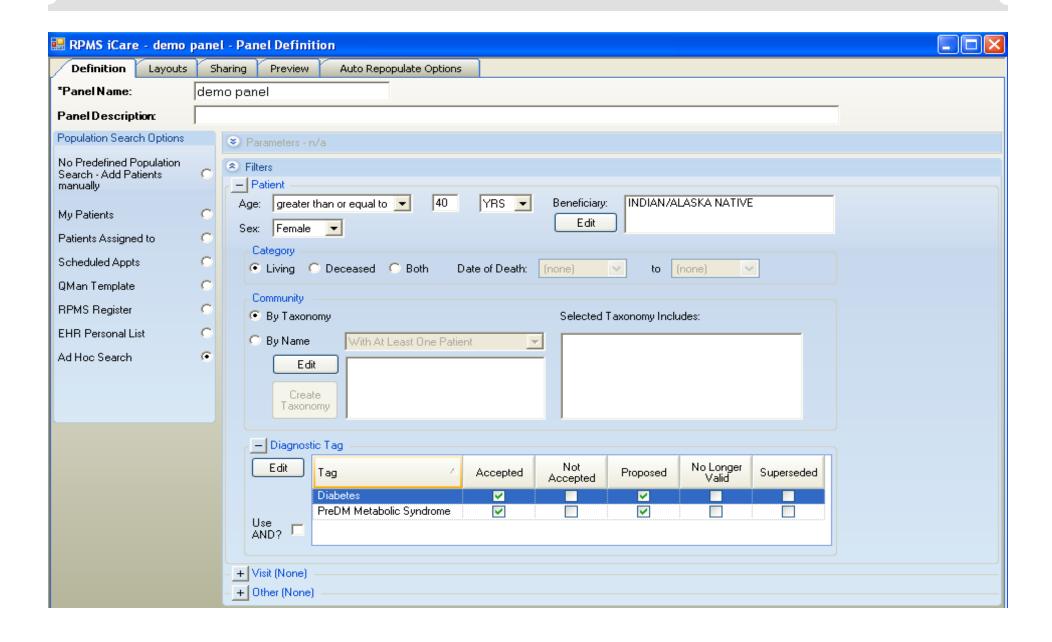
- Splash Screen at first login of the day
- Anonymous
- Related to Community of Residence
- Ready Access from many views: Opening View; Panel View; Patient Record
- User-defined display



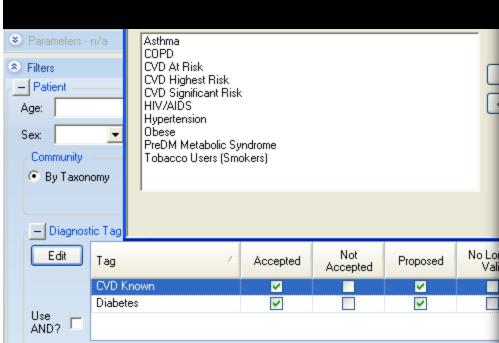
iCare - Opening View



iCare - Panel Creation



iCare - Diagnostic Tags



Currently ten DX tags available. Pregnancy will be added with version 2.3 due in October 2011. Always open to add more based on user feedback!

Diabetes [DM]

Patients with at least 2 primary diagnosis POVs ever for ambulatory or hospitalization visits (not on the same date) or 1 instance on Active Problem List. Diabetes defined as ICD 250.00-250.93 (SURVEILLANCE DIABETES taxonomy).

HIV/AIDS [HIV]

Patients with at least 2 primary diagnosis POVs ever for ambulatory or hospitalization visits at least 60 days apart or 1 instance on Active Problem List; OR at least two CD4 or HIV Viral Load lab tests in the past two years, at least 60 days apart; OR positive result from an HIV screening test. HIV/AIDS defined as ICD 042. 44.9; 795.71; V08 (BGP HIV/AIDS DXS).

CD4 lab tests defined by the site as lab tests in BGP CD4 TAX, or predefined CPTs or LOINC (BGP CD4 CPTS or BGP CD4 LOINC CODES). HIV Viral Load lab tests defined by the site in BGP HIV VIRAL LOAD TAX, or Predefined CPTs or LOINC codes (BGP HIV VIRAL LOAD CPTS or BGP VIRAL LOAD Val LOINC CODES). HIV screening test defined by the site in BGP HIV TEST TAX; positive result is defined as a value containing "p," "P," ">," or "+". (NOTE: CPTs and LOINC codes are not reviewed because they will not contain a result.)

Hypertension [HTN]

Patients with at least 2 primary diagnosis POVs ever for ambulatory or hospitalization visits (not on the same date) or 1 instance on Active Problem List. Hypertension defined as ICD 401.0-401.9 (BGP HYPERTENSION DXS taxonomy).

Obese [Obese]

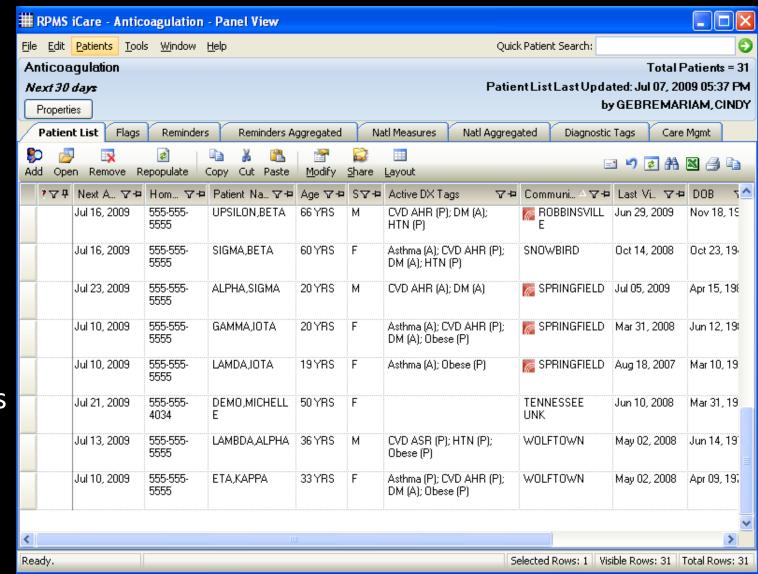
Adult patients (ages 19 and older) with most recent adult BMI equal to or greater than 30. Values for patients ages 18 and under are based on standard tables. BMI is not a stored value but is calculated at the time the logic is run, based on the most recent height and weight data in the Measurement file. For ages 18 and under, a height and weight must be taken on the same day in the past year. For ages 19 through 49, height and weight must be recorded within the last 5 years, not required to be

iCare - Panel View/Patient List

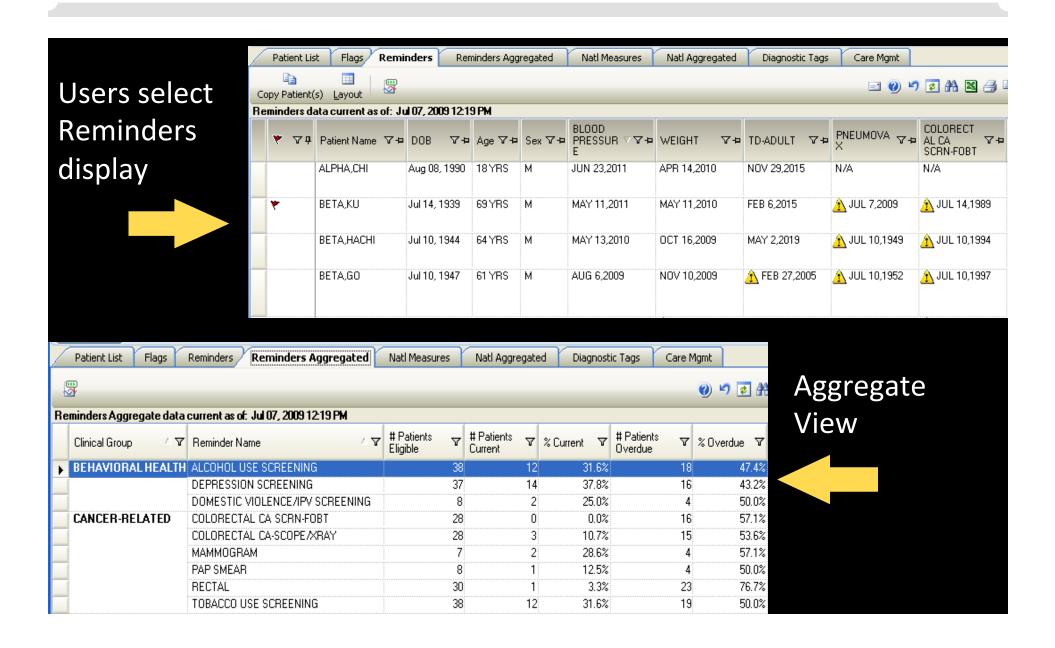
Quick look at your patients.

Customize the view to suit your needs.

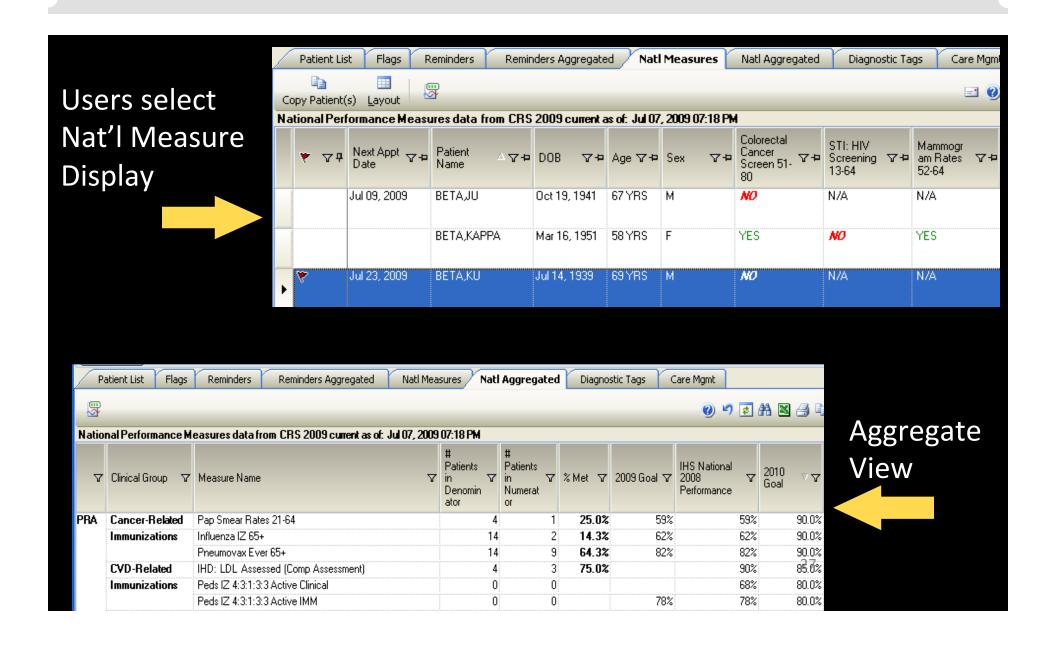
Share your panels and custom layouts with others.



Clinical Decision Support – Reminder Views

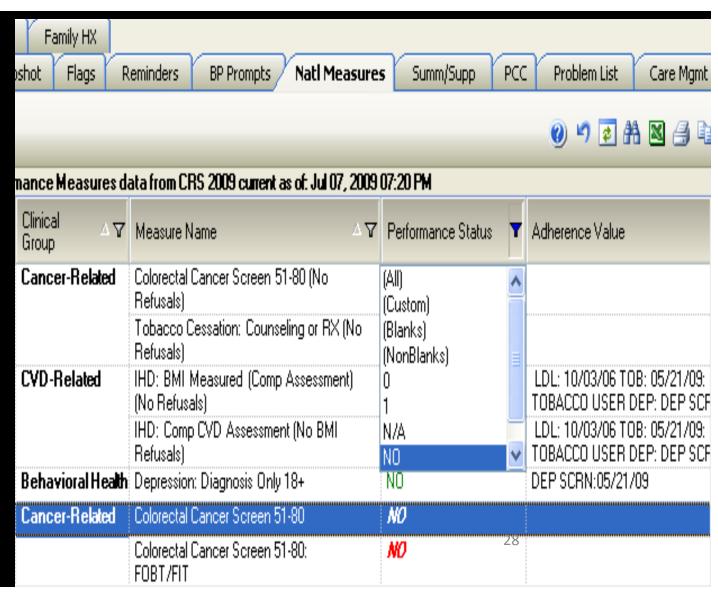


Clinical Decision Support -National Measure Views



iCare - Patient Record / National Measures

Through out iCare you can filter results to see only the data you are interested in focusing on.



iCare v2.1 Introduced CMET

- CMET = Care Management Event Tracking
- Provides ability to track certain pre-defined events
 - Breast
 - Cervical
 - Colon
 - Skeletal health
- Workflow includes four steps
 - Event (a mammogram, for example)
 - Findings (Bi-Rad 3)
 - Recommendations for Follow-up (repeat mammogram in six months)
 - Patient Notification (documentation that the patient has been informed of the Findings and Recommendations).
 - CMET generates "ticklers" or reminders to ensure that the next step is followed
 - CMET work flow is available from all iCare views: Main View, Panel View, and Patient View.



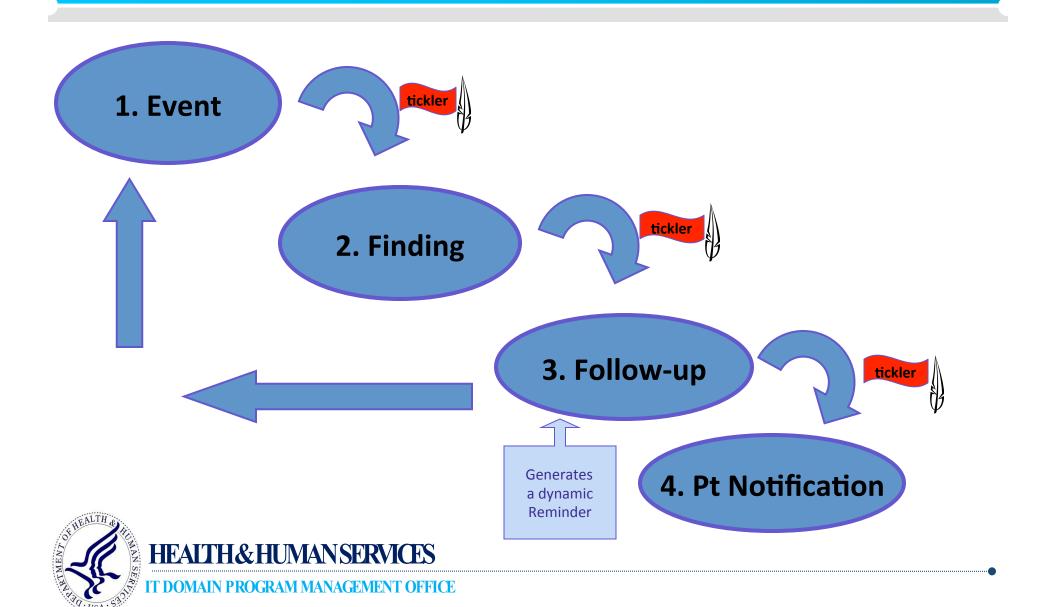


Care Management Event Tracking (CMET)

- Track and manage screening events by retrieving information from the database and presenting it in a useable way
- Minimize the "fall through the cracks" syndrome common in many clinical practices
- Minimize or eliminate the need for duplicative entries into EHR
- Replaces tracking functions of other registry packages



CMET Workflow

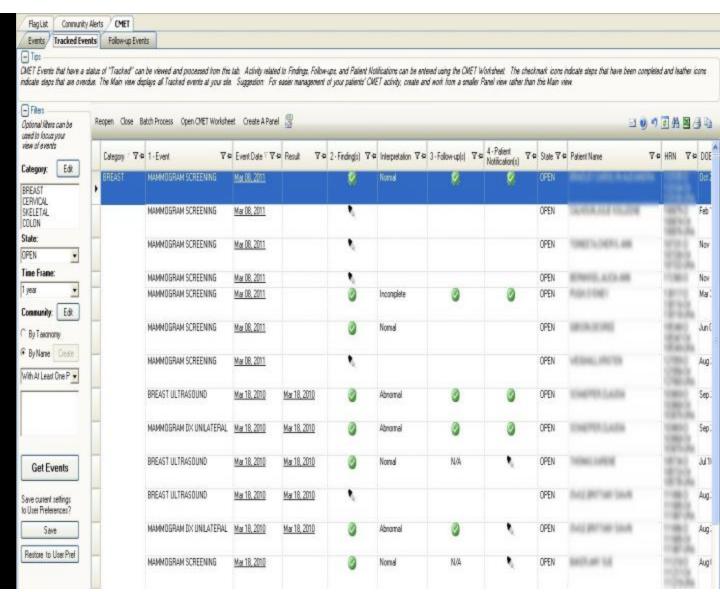


Main View CMET: Tracked Events

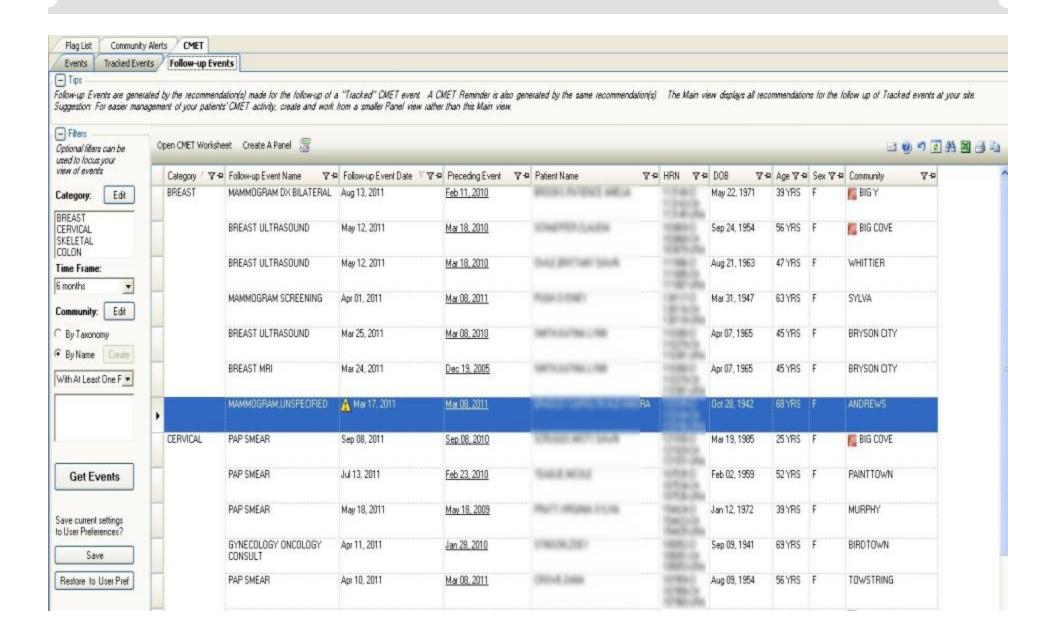
Keep track of patient status.

Organized work flow using "CMET Worksheet".

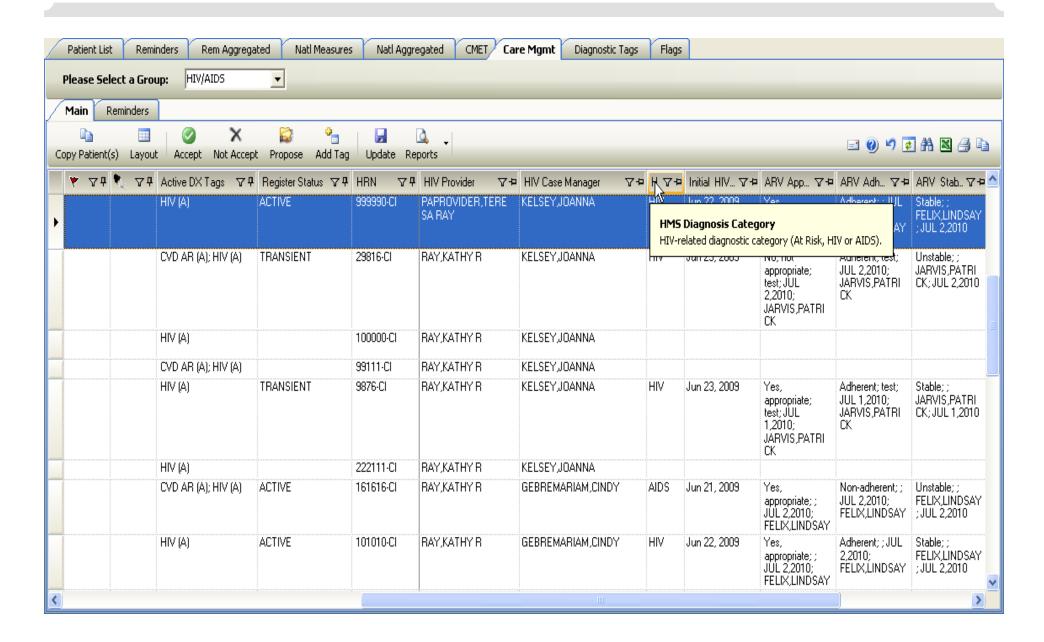
Feather "Ticklers" let you know when something is "Past Due".



Main View CMET: Follow-up Events



HIV Management System – Main View



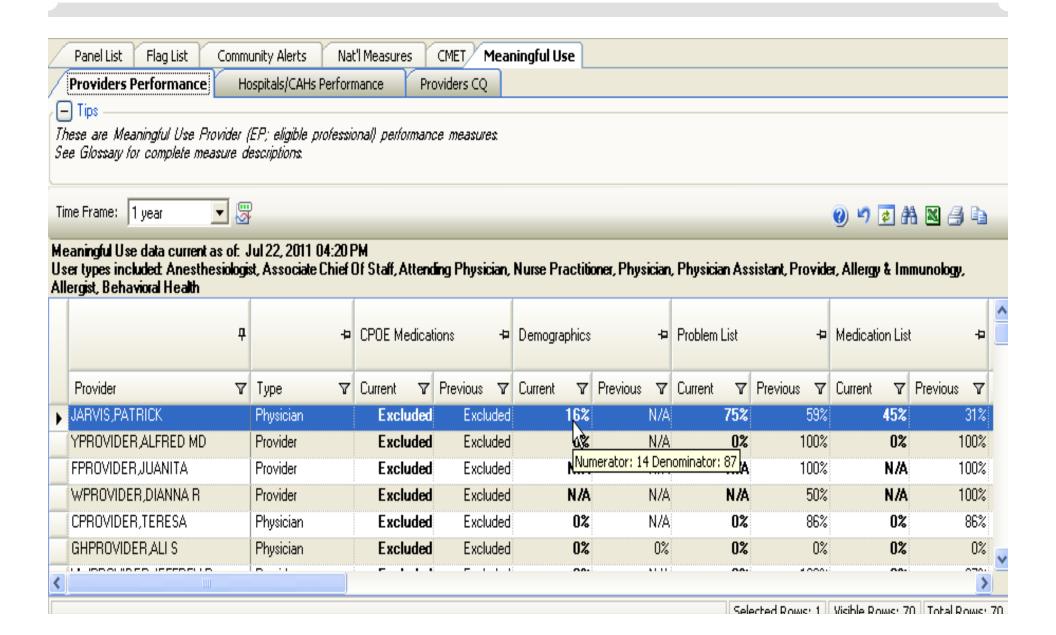
HIV Management System – Quality of Care Report

РМЈ		JUL 27,2011	13:05:24
2010 DEMO HOSPI	TAL	000 27,2011	10.00.24
HMS CUMULATIVE AUDIT	REPORT	Γ	
HIV QUALITY OF C	ARE		
HIV all			
Active HMS Register 1	Patient	s	
PERIOD ENDING: Nov 2'	7, 2010)	
**** CONFIDENTIAL PATIENT IN		rion ****	
Total Patients Reviewed: 30			
Number of Patient Included in this Report 28			
(Eligible Population)			
1			
		Percentage	
Gender: Male Female	15	53.6% 46.4%	
remare	13	40.4%	
Age <15 yrs	5	17.9%	
15-44 yrs	9	32.1%	
45-64 yrs	10	35.7%	
>64 yrs	4	14.3%	Υ
Visits and Related Labs			
Every 4 months			
Total # of Patients w/ Visits	4	14.3%	
Patients w/ only a CD4 Count	_	50.0%	
every 4 months			
Patients w/ only a Viral Load	0	0.0%	
every 4 months			
Patients w/ both a CD4 Count & a Vira	1 2	50.0%	
Load every 4 months			
Every 6 months			
Total # of Patients w/ Visits	13	46.4%	
Patients w/ only a CD4 Count	8	61.5%	
every 6 months			
Patients w/ only a Viral Load	0	0.0%	
every 6 months			
Patients w/ both a CD4 Count & a Vira	1 5	38.5%	
Load every 6 months			
Number of CD4 counts in Last Time Period	5		
The second of th	_		
Number of Viral Loads in Last Time Period	5		

		ZZDV LERBY FRANCI	7House	
	190		Alleran	
		THE WAS SELL SELL S	17 1910	
		in since Emporer 5th		
	name: Philips		15	
	30.23.510		.0	17:23
	***** *** **** ***** *****	Winter		
	FACTOR OF TRANS.	trat board	2	
	THE PLANT IN	Element & a vera		
	FRE	-1,0025	16	27:22
	Particular of Description of Street, S	de Court & a Vice		30.00
	CORNEL OF APART PORCE OF PER	O Time Particle	2	
	No. Strategies			
			=	- E Mari
	Fee (1) 110 A		à	12:00
	TOTAL OF ARREST	NOTES.	li .	1:81
	F41113 5		10	2E:42
	THE RESIDENCE OF SHIPPING			****
	191.195.19 . Mary 11	DESCRIPTION AND ADDRESS OF THE PARTY OF THE	0	
	STREET BORN SCHOOLSP	A SE DESC' - SERVE	. 1	-11
	50 100 140		22	77.00
	COMPANIE THE OF SE	read to hoo	-	11:11
		NA PROPERTY		
	1112-1-1-1	The section of	à	2 2 2
	THE DESIGNATION OF THE PERSON NAMED IN COLUMN	il.	- 1	N-0.00
	And the same			7.10
	Birl Piping.		-	5 G
	### P#V.##-5.214	SST-	ii.	2:11
	S-101 S-101		- 1	111
		776	1	5 55 5 65 5 65
	THE RESIDENCE		- 1	E:0:
		A STATE OF THE REAL PROPERTY.		
	San Parkers Cons	The second street		*2:22
	Vancation Commerce	- Venezia	**	N- ma
	THE REAL PROPERTY OF THE PARTY OF			×8:65
	77 Very Very 177	SABINA AND AND		
	Har Balling and Address of the State of the			70:00
	THE PARTY OF THE PERSON NAMED IN		0	5 00
		ALC: STORESTONE	8.01	15.70
	Francisco Management		0.0	22:12
	\$100 ATT TO \$100	Comment of the same of the sam	1	10.00
		2272	1	12:45
	140	-2224	1	2¥: U1
	2010	time was "GO" " Top "	****	710
	I	an month of the second	57-1011-	The tributes
	the second second second second	ACTIONS AND DESCRIPTIONS	PRODUCT OF	N
	ton the same of the same of the same of		NAME AND ADDRESS OF	THE REAL PROPERTY.
	AND DESCRIPTION OF PERSONS ASSESSMENT	THE PART OF WHICH		
	Variation of the same of the same	W110.	on cases	
	BERRY OF PARTIES.	222 22 22 22 22 22		nather or note.
	NAME AND ADDRESS OF THE PARTY OF	on near the same		Citing armin.
	140	NAME OF TAXABLE	Carl Service	10
	Vill Billion III.		1000	Charles of the last
	STATES THE LAND STATES	是 相		214. 22. 111
	Control March Property	The Part of the Part of	10.1511-	TOTAL TRIUMINA
	Company.	Librar 122 can be	S STREET	Salar Salar
	\$ \$20 \$21 kg	HH. H . H	E 122.74	Sally and
	1000000	ME I I	1. 313	55 THE LAST SEC.
		Island St. E. All		EII
	STATE OF LES	1111 H E 31		100 12/12/1200
	11日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日	Hills II I		100 VALUE 100 VA
		11199 11 1 11		
	2270		4- III (E	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ATTENDED	11012,1502	- 65	EE 12/22
The state of the s	Control of the last	· · · · · · · · · · · · · · · · · · ·	The same	***
11 12 12 12 12 12 12 12 12 12 12 12 12 1	100000000000000000000000000000000000000		1000	** *** *** *** *** *** *** *** *** ***
12 2 25 Margarette 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	22.22	titien in the fee	1201112	d
100 Marie 100 Ma		HARMAN	1007224	S. Marie Constitution
200				
			3100	224 Maria 201 1
			The state of	THE PARTY SEE

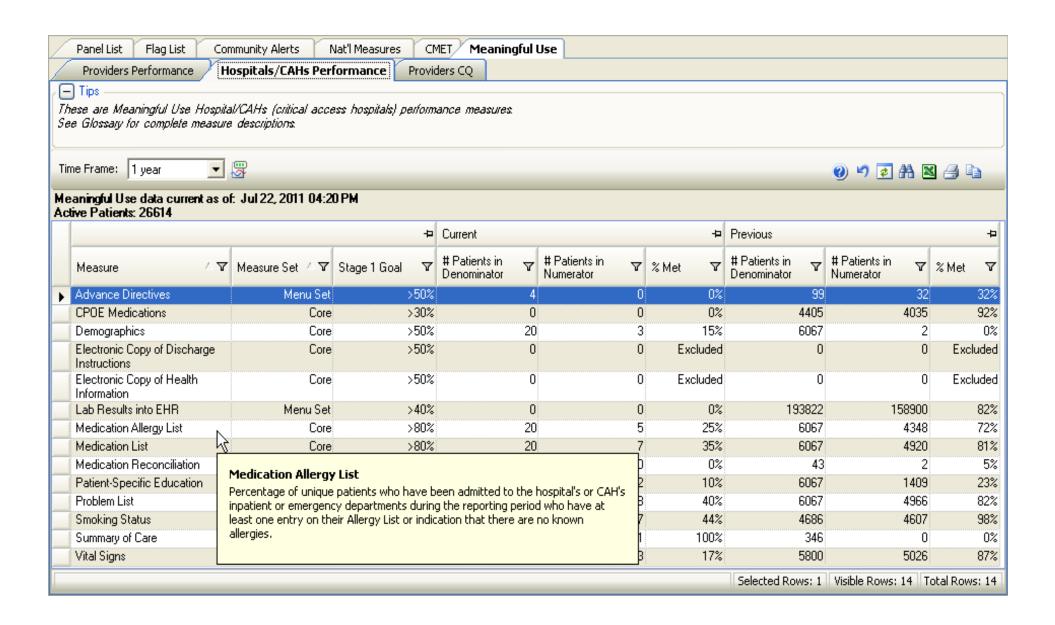
Main View: Meaningful Use Tab

Provider Performance Measures



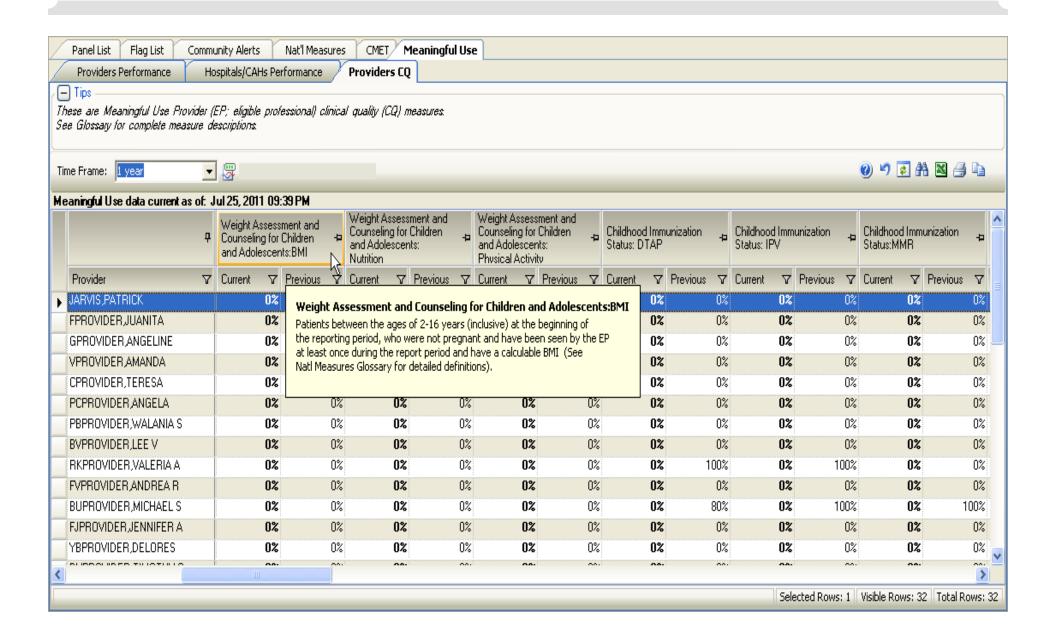
Main View: Meaningful Use Tab

Hospital/CAHs Performance



Main View: Meaningful Use Tab

Provider Clinical Quality



iCare v2.3

- Introduction of Improving Patient Care (IPC) view
- Creation of teams/microsystems for 'agile change'
- Four specific tabs available
 - Patient Detail
 - Provider Detail
 - Provider Aggregated
 - Facility Aggregated

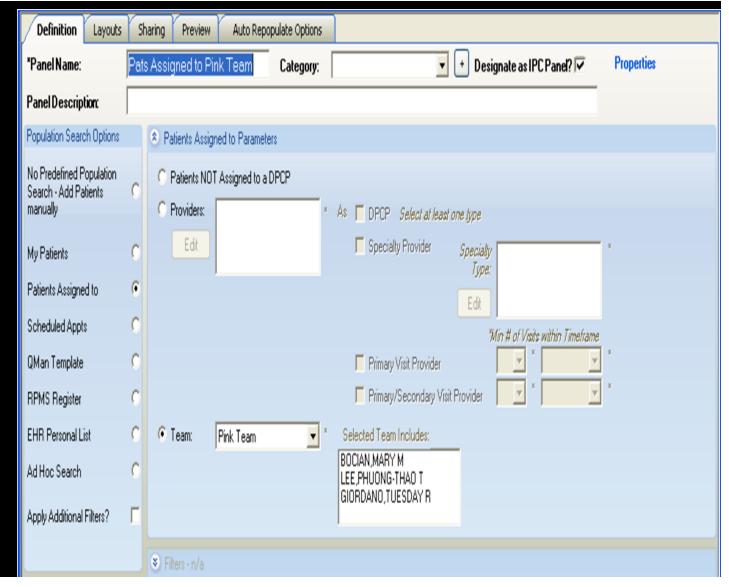


Team Panel Definition

Designate a panel as an "IPC" panel.

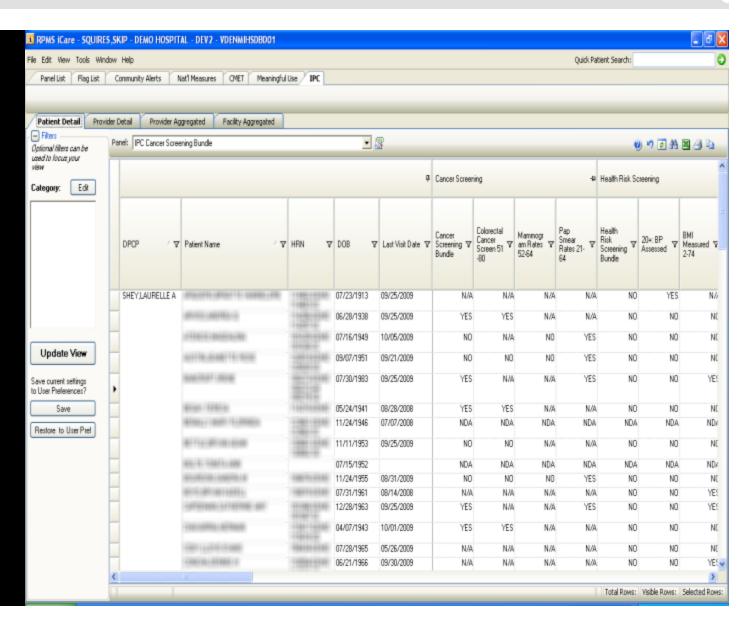
Enhanced Panel Definitions to accommodate teams and microsystems.

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

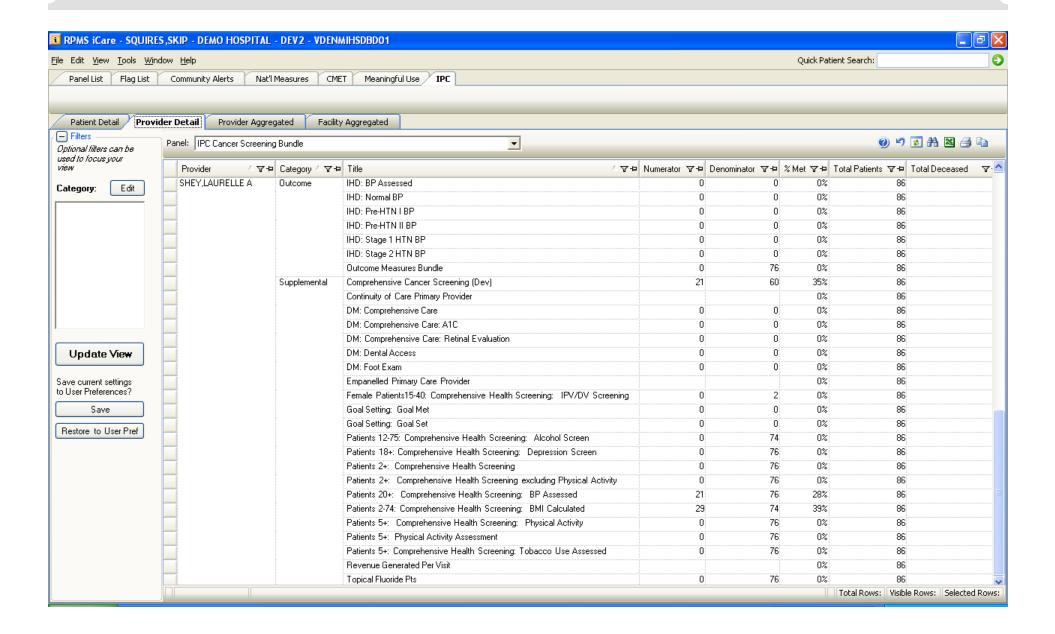


IPC/Patient Detail

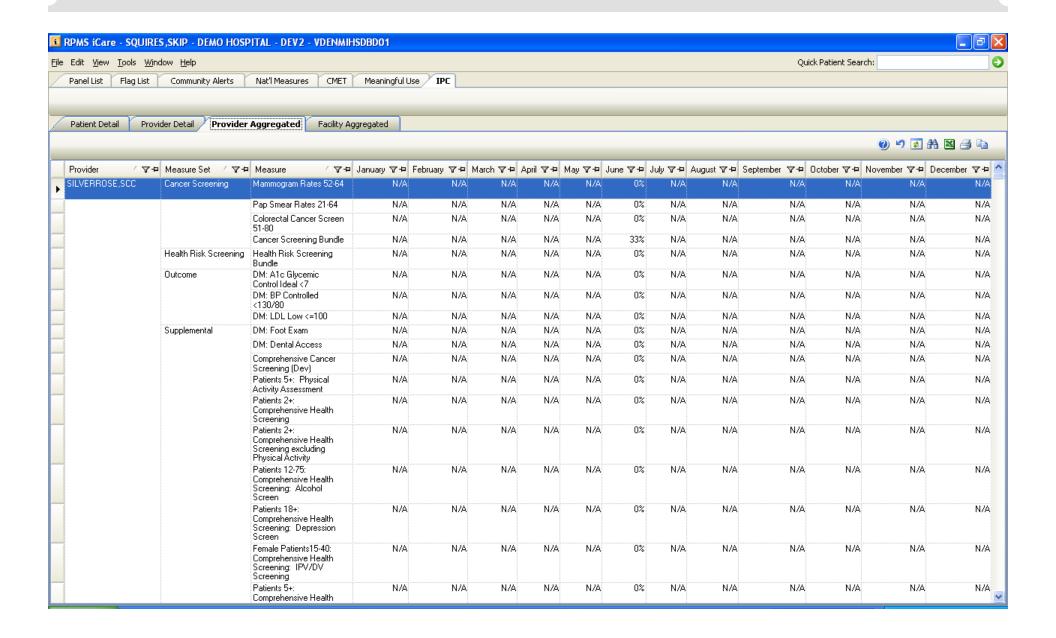
Pull "IPC" panel data. Measures divided into Core measures.



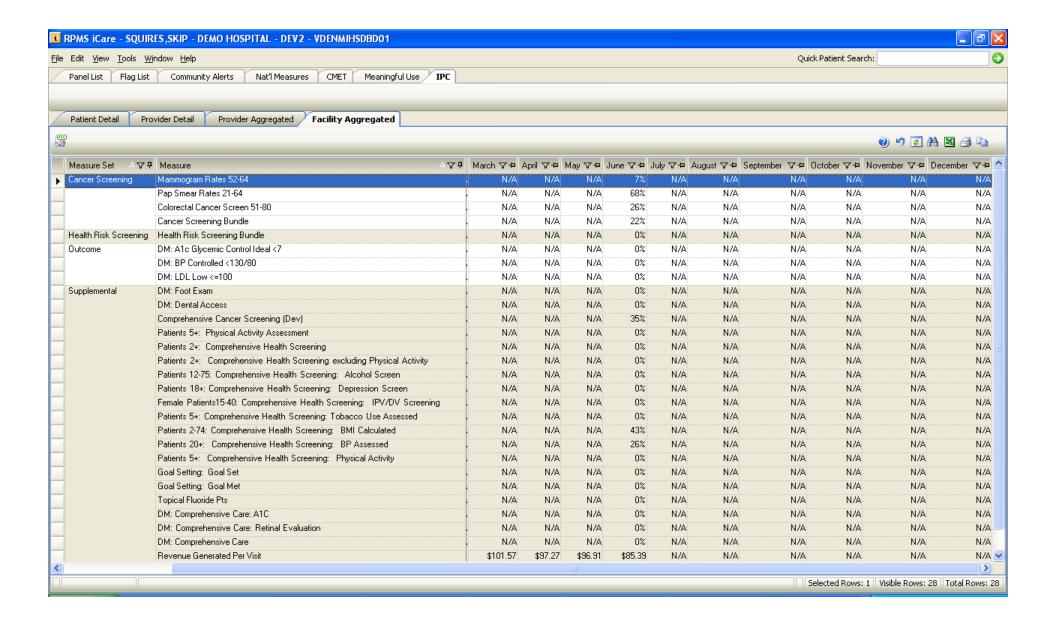
IPC/Provider Detail



IPC/Provider Aggregated



IPC/Facility Aggregated



iCare v2.4 March 2012

- Introduction of care plan functionality (create, track, update w/ automatic notification)
- Ability to search for patient that HAVE NOT had a particular test (e.g., mammogram, Pap, HIV screen)
- Charting of IPC measures over time
- Enhanced HIV care functionality
- Strong Heart calculator for CVD risk
- New diagnostic tags



A Vision

- A health care system that INCORPORATES family, population, public and community health as a cornerstone of personal health care delivery at the point of care
- Inclusion of non traditional data information into the traditional patient, provider, family and community perspective
- Involvement of community based research and translation of research as a model for improving health status and..
- The achievement of health equity

Questions?

