
Using Data to Improve Quality of Care

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TBC FACULTY

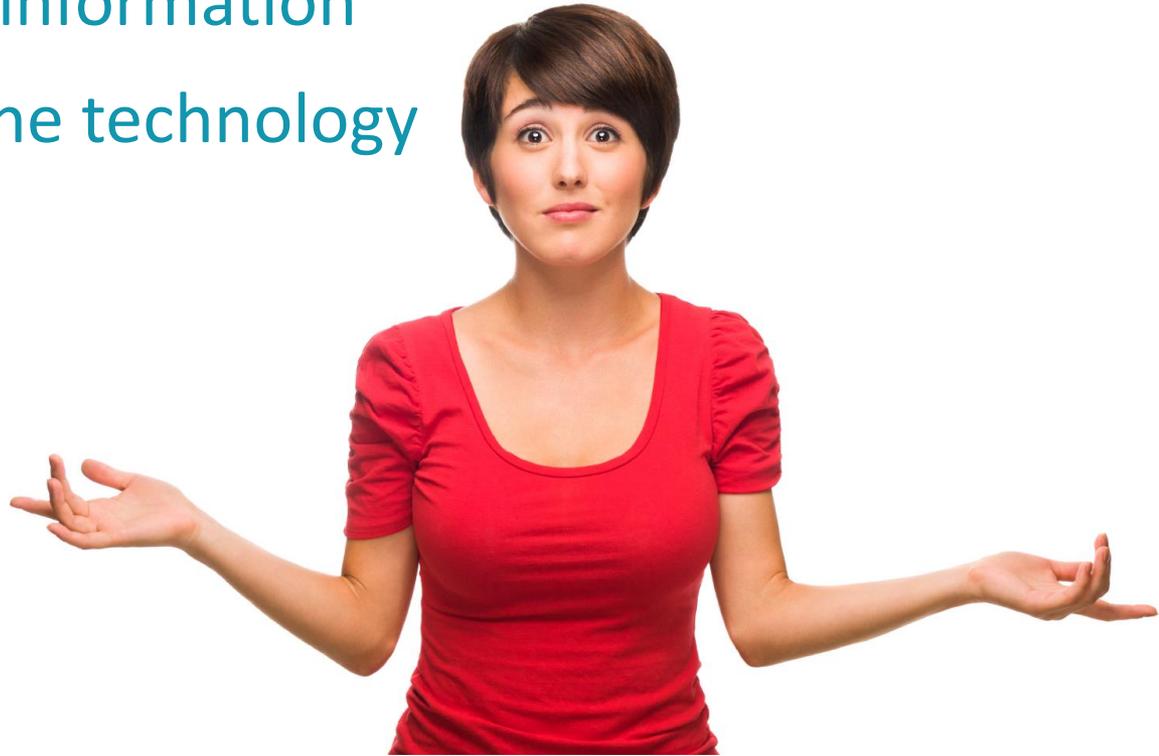
LEIBIG-SHEPHERD LLC

2/15/17



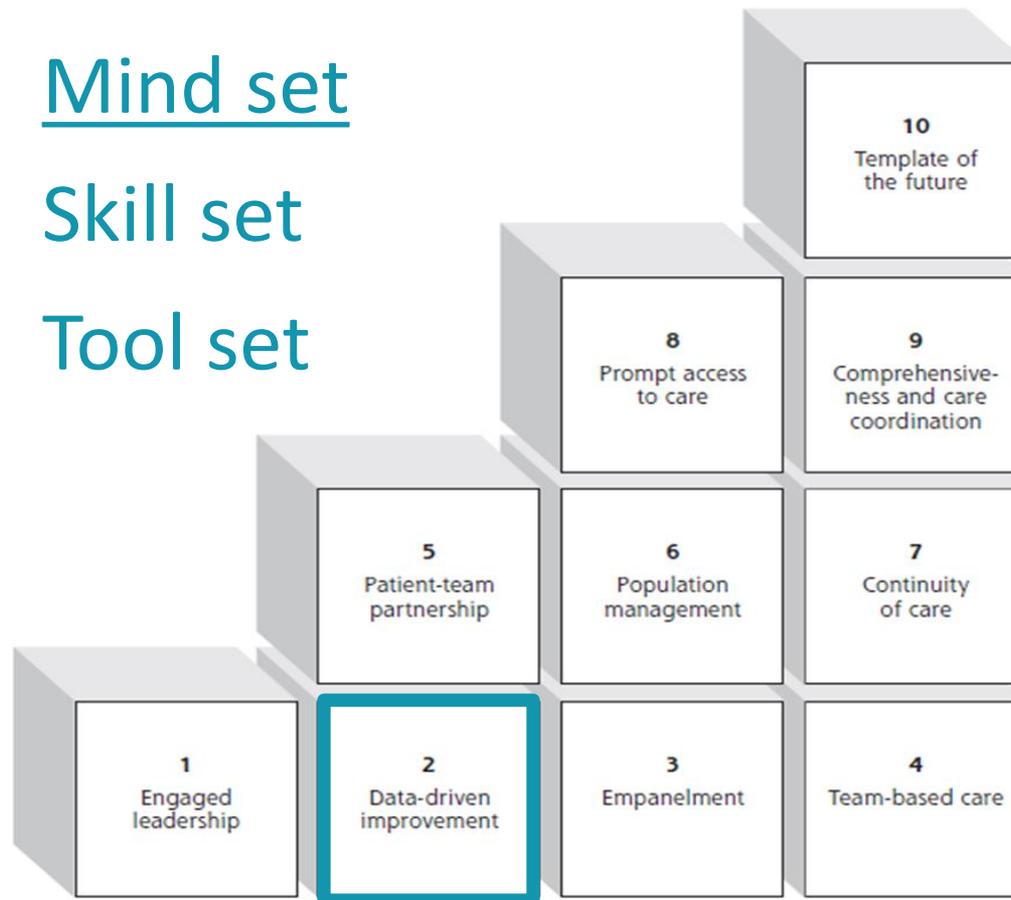
What's Going On with Data?

- We have lots of data right now
- Turn data to useful information
- It's not just about the technology



Start with a Data-Driven Culture

1. Mind set
2. Skill set
3. Tool set



Data Driven Culture-Mind set

- Data is an asset
- Quadruple Aim of Data Governance
 - Decrease Cost
 - Data Quality
 - Data Access
 - Data Utilization
- Accountability for data runs throughout the organization

Data Driven Culture-Skill Set

Roles

- CEO
 1. Set the vision and culture
 2. Set priorities
 3. Allocate resources
 4. Model data-driven behaviors

Data Driven Culture-Skill Set

Roles

- Data Stewards
 1. Take ownership of department data
 2. Ensure relevant and accurate data is accessible for all staff
 3. Foster a common data terminology among all staff
- Data Analysts and IT Specialists
 1. Analyze data and provide reports
 2. Ensure accessibility and utilization of the data
 3. Help with data quality analysis and improvement

Data Driven Culture-Skill Set

Roles

- End Users
 1. Learn and use data to manage/improve outcomes
 2. Push for access to relevant data
 3. Help with continuous data improvement by addressing defects

Data Driven Culture-Tool Set

- The Tool Set comes after Mind Set and Skill Set
- EHRs have dramatically changed expectations
- Analytics required to turn data into information

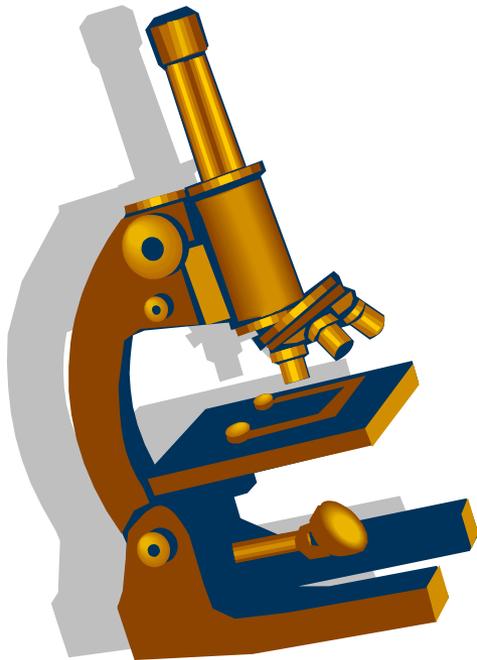
Team-Based Care HIT Consultation Opportunity from TCHF

Receive assistance from experienced HIT consultants to improve access to data from your electronic health system or supportive software in order to enhance how you use data to implement TBC components, such as empanelment through accurate continuity reports, or population management through accurate and detailed registries. An HIT consultant will be assigned to your practice and work closely with your team to assess your needs and help you extract, validate and interpret your data. **Application for this support is due March 3, 2017**

Link to application:

<https://www.surveymonkey.com/r/TBCsupportapplication>

Outcomes Data



Research outcomes

- Statistical structure for studies
- IRB, research institutions

Accountability outcomes

- Benchmark comparisons
- Defined numerators and denominators
- Summarized data, every 3, 6, 12 months

Quality improvement outcomes

- Decision support
- Appropriate fine focus adjustment
- More frequent

Accountability Data Benchmarks

- UDS

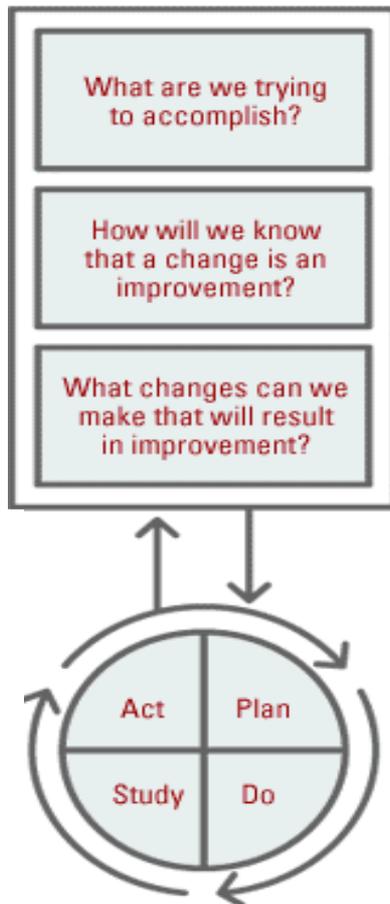
<https://bphc.hrsa.gov/uds/datacenter.aspx?q=d>

- NCQA

<http://www.ncqa.org/report-cards/health-plans/state-of-health-care-quality/2016-table-of-contents>

CHILDHOOD IMMUNIZATION COMBINATION 3 (DTAP, IPV, MMR, HIB, HEPATITIS B, VZV AND PCV)					
	Commercial		Medicaid	Medicare	
Year	HMO	PPO	HMO	HMO	PPO
2015	76.3	68.4	69.0	–	–
2014	78.0	69.0	70.4	–	–
2013	76.6	66.5	70.8	–	–
2012	76.8	65.8	72.1	–	–
2011	75.7	63.1	70.6	–	–
2010	75.1	46.1	69.9	–	–
2009	73.4	40.4	69.4	–	–
2008	76.6	28.5	67.6	–	–
2007	75.5	27.6	65.4	–	–
2006	65.7	22.4	60.9	–	–

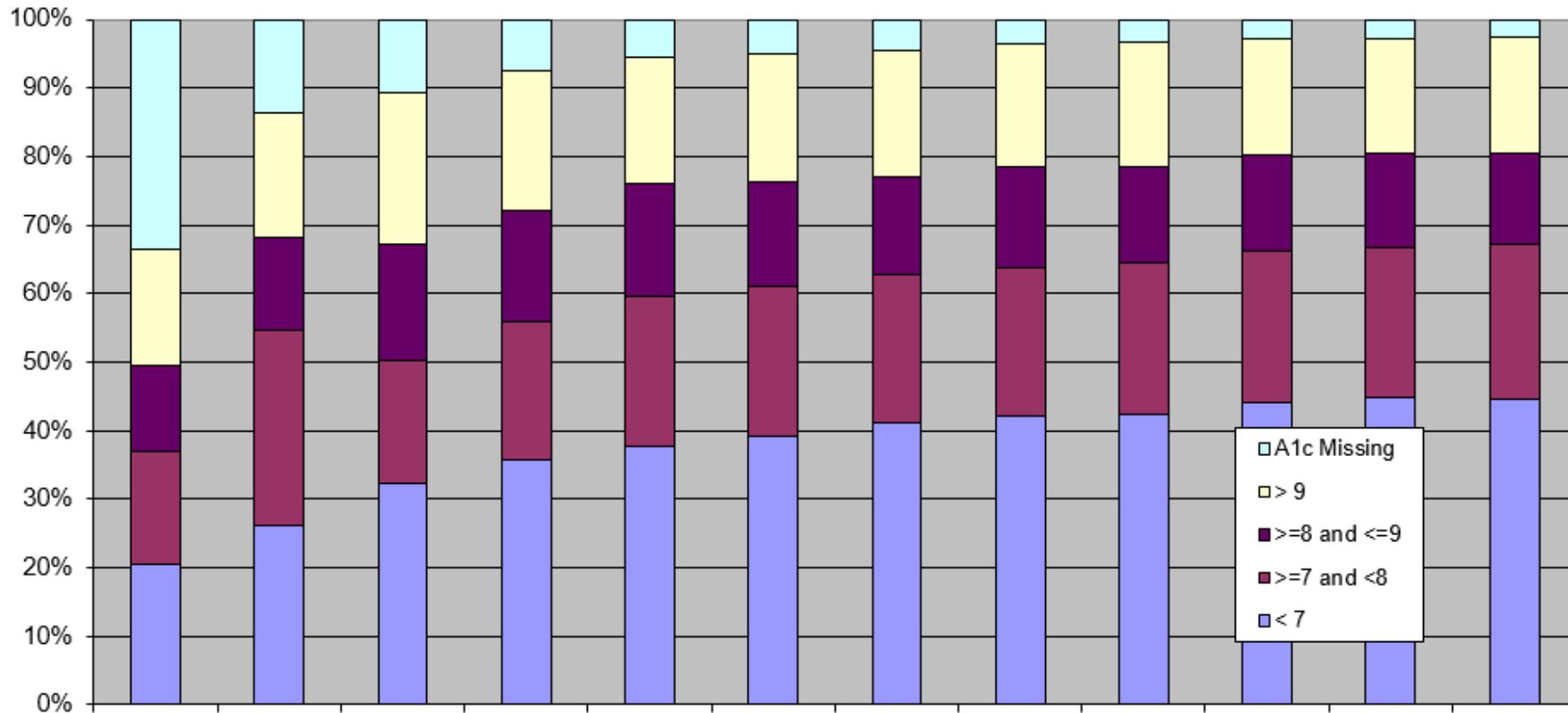
Quality Improvement Data



- Accountability data may drive Aims.
- Measurement to check progress towards Aims. Your numerator/denominator. More readily available.
- Define changes, predict results
- PDSA Study Data
 - At times very granular around process change
 - Not often reported to outside agencies

Data for Aims and Measures

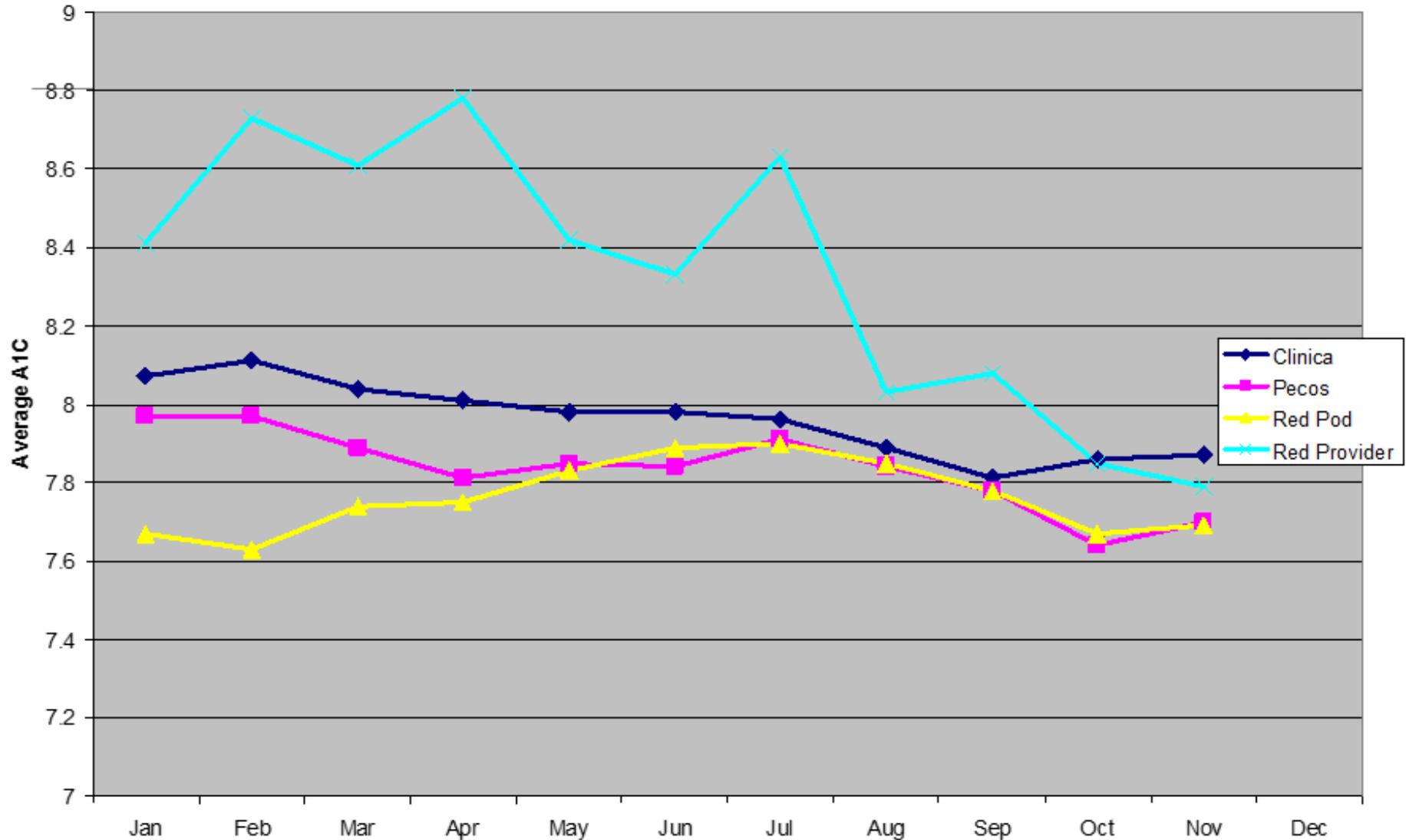
UDS Diabetes A1c Control
2012 Cumulative % of Patients A1c Control



□ A1c Missing
□ > 9
■ >=8 and <=9
■ >=7 and <8
■ < 7

	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
□ A1c Missing	33.50%	15.85%	10.61%	7.56%	5.52%	4.99%	4.60%	3.49%	3.35%	2.84%	2.75%	2.68%
□ > 9	17.00%	20.95%	22.19%	20.27%	18.41%	18.68%	18.36%	18.08%	18.02%	17.02%	16.79%	16.75%
■ >=8 and <=9	12.50%	15.67%	16.93%	16.37%	16.38%	15.26%	14.34%	14.78%	14.24%	14.02%	13.76%	13.40%
■ >=7 and <8	16.50%	32.92%	17.90%	20.03%	21.97%	21.93%	21.54%	21.62%	22.12%	22.07%	21.97%	22.66%
■ < 7	20.50%	30.28%	32.37%	35.78%	37.71%	39.14%	41.16%	42.04%	42.27%	44.06%	44.72%	44.52%

Red Pod Average HgbA1c



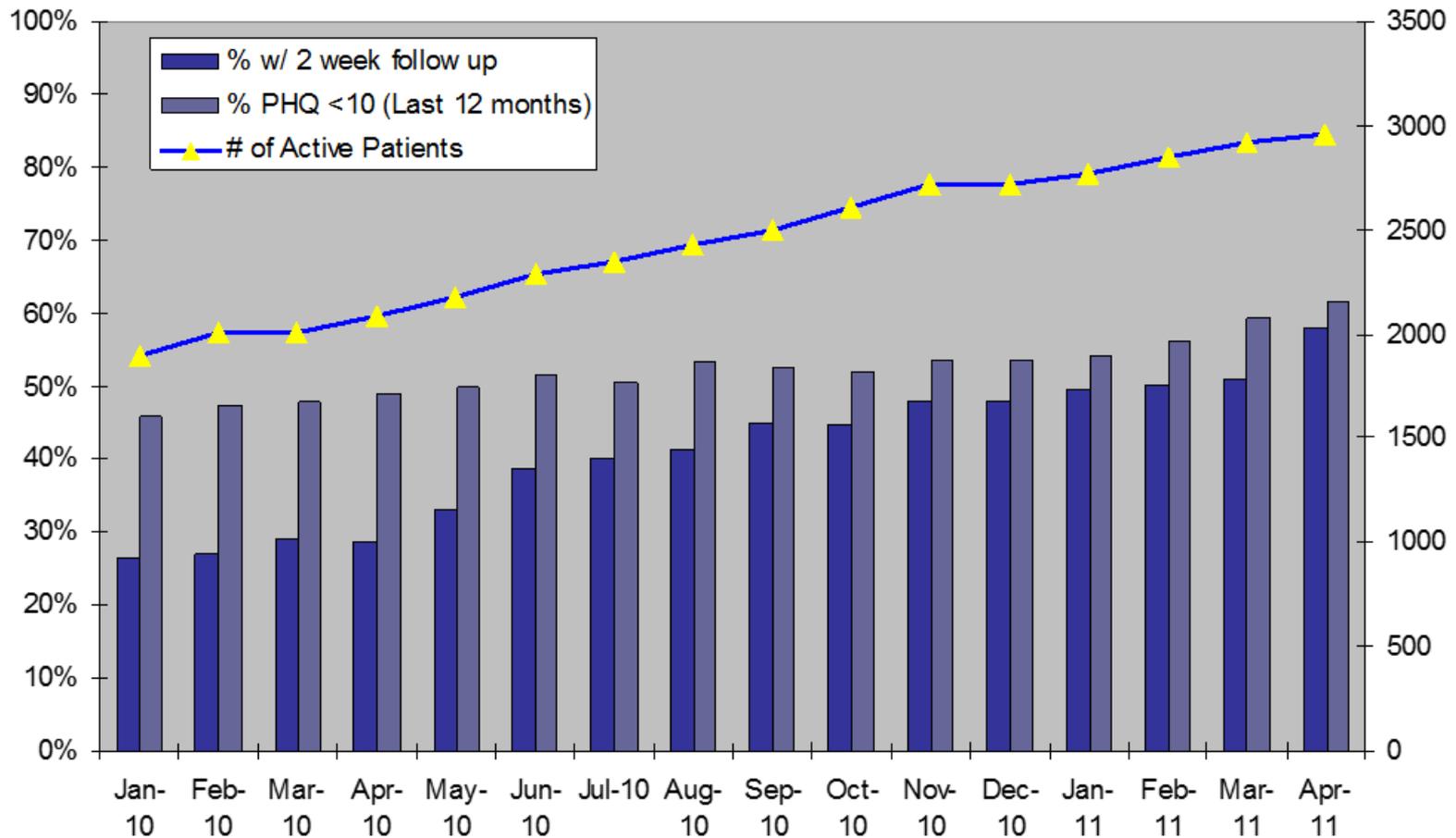
Possible Missed Immunization Opportunities

Possible Opportunities Missed Between 7/18/2011 And 8/1/2011

⊕ ?

Visits	Patients	Missed Opportunities	% Missed Opportunities
⊕ Andrade, Jeannette CC			
42	42	5	11.90%
⊕ Arroyo, Zulema CC			
16	16	0	0.00%
⊕ Diaz, Martha CC			
36	35	1	2.78%
⊕ Garza, Alma CC			
3	3	0	0.00%

Complex Data Analysis



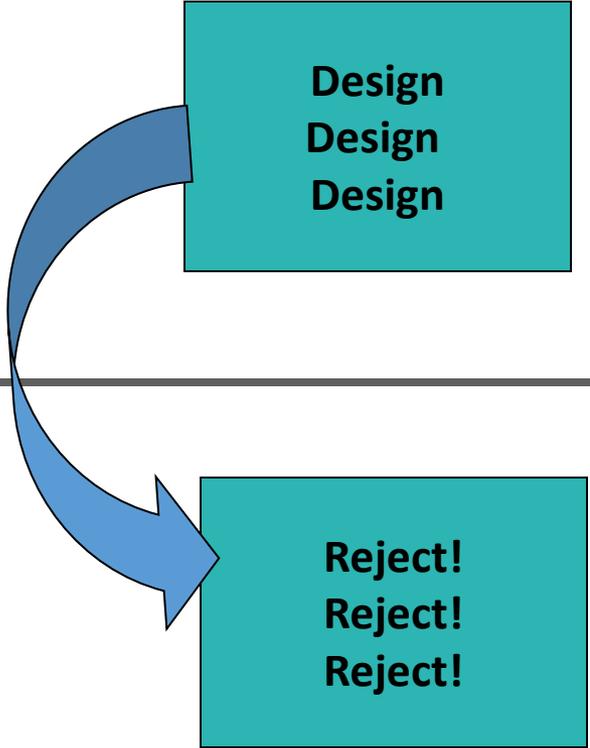
Making Data Useful

Conference
Rooms

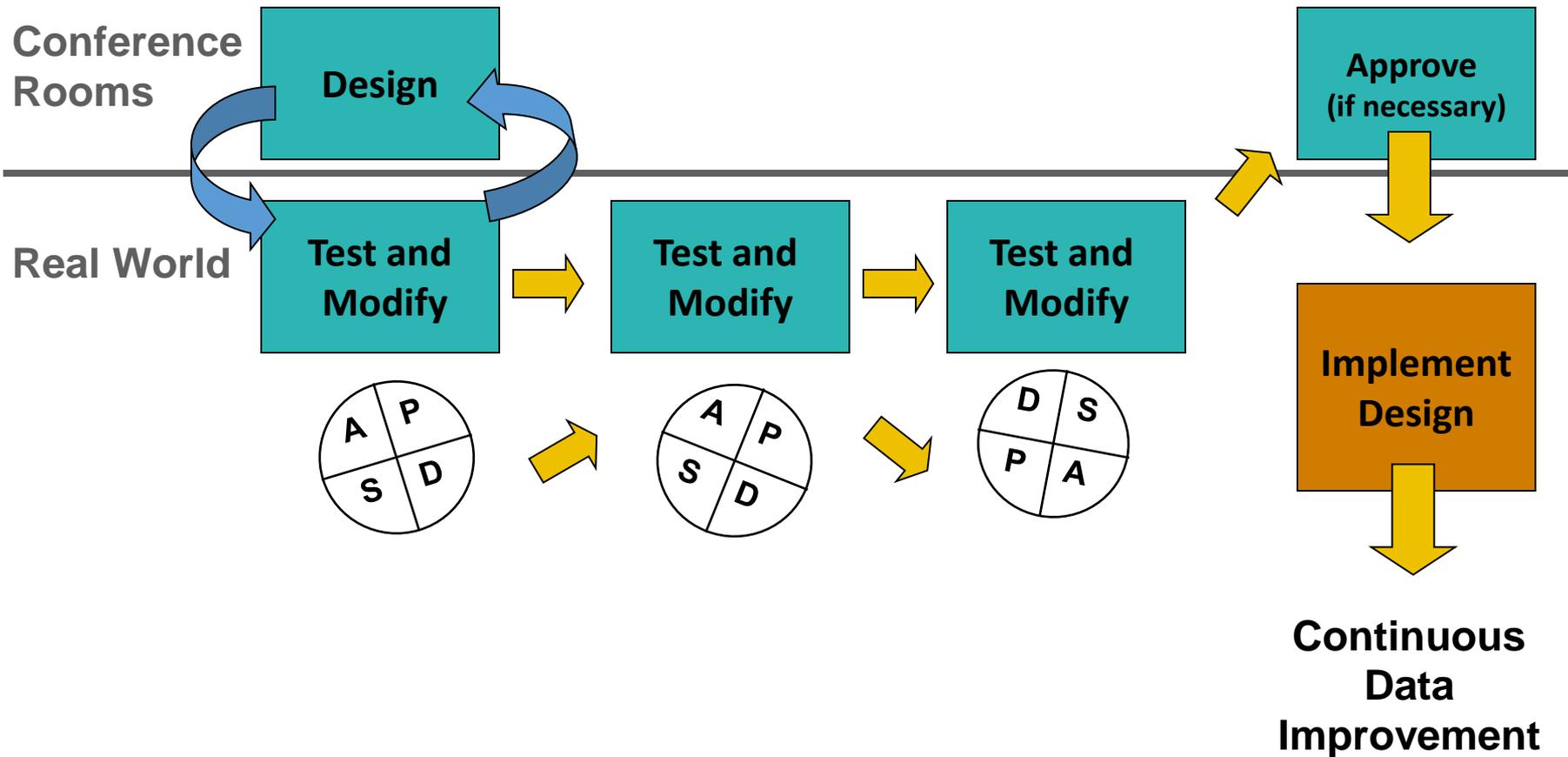
Design
Design
Design

Real World

Reject!
Reject!
Reject!

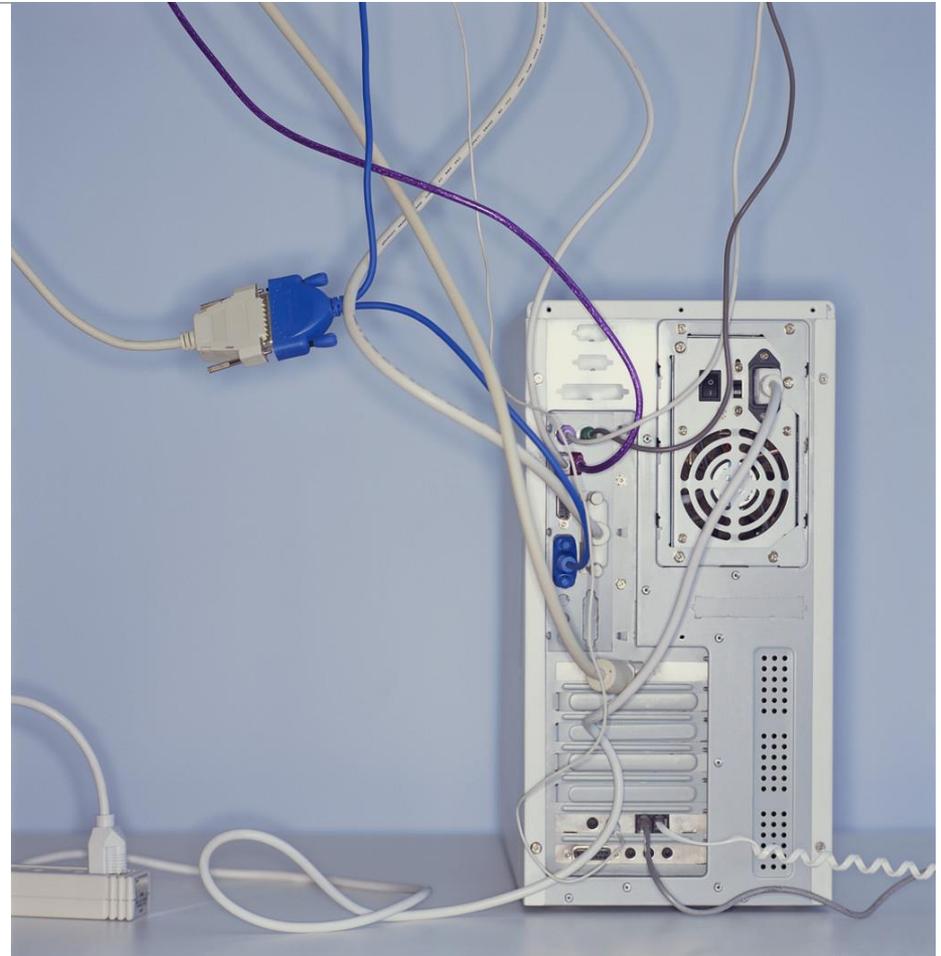


Making Data Useful



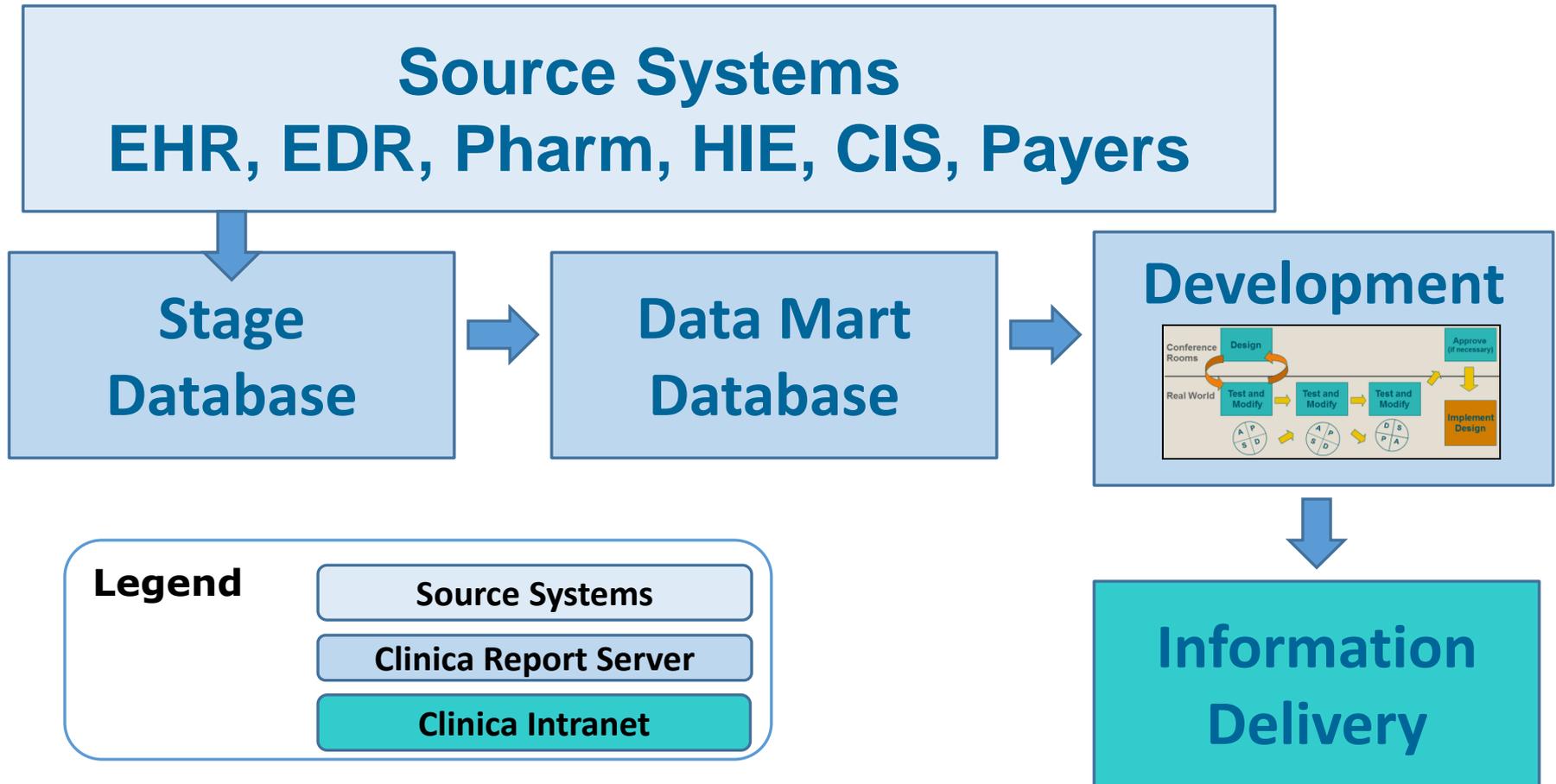
Clinica Data Tool Set

- EHR
 - Transactional data
- Business Intelligence Tool
 - Analytic, relational data



Clinica

Data Warehouse Architecture



Attributes of Useful Data



Right Medication



Right Information

Right Patient



Right People

Right Route



Right Tools

Right Time



Right Time

Right Dose



Right Format

Clinica Commonly Used Reports

Commonly used BI Reports

more reports...

Data is as of: 4/22/2014 11:20:00 PM

CLINICAL

Abnormal Breast Diagnostics

Assigned ACO Patients

CarePlanner SSRS

Current Gestation 42 Weeks or Greater

Delivery report by site-pod-pcp

Diabetes Outcomes SSRS

Monthly Depression Followup Graphs SSRS

Patients with ER or Hospital Visit SSRS

Planned Care Registry Outreach SSRS

Possible Missed Immunization Opportunities SSRS

OPERATIONS

Appointment Event Usage Graph SSRS

Co-Visit

Last WCC

NextGen Patient Portal Dependant Cleanup

Open Referrals

Operations Dashboard

Patients Eligible to see Hygienist on the Pod

Planned Care Patients - Chart Location Does Not Match PCP Location

Schedule Categories By Site

Visit Missing slots

FINANCE

Front Desk Collections

Missing and Incomplete Encounters

CRYSTAL

Hematocrit Audit

OB Med Recs

UDS

BMI Audit Graph SSRS

UDS Low Birth Weight SSRS

UDS Missing Data

UDS Quality Indicators Childhood Immunizations 2013 SSRS

UDS Quality Indicators Table 6B and 7 2011 (OM HTN IZ Pap Tobacco Asthma Obesity) SSRS

UDS Quality Indicators Table 6B and 7 2013 SSRS

UDS Table 4

UDS Table 5

UDS Table 6A-1

UDS Tobacco Last Asked and Cessation Details

Outcomes-Operations Dashboard

Available Appointment Slots

[Graphs](#)

[Group Visit and Procedure Details](#)

Category	Slots	Booked	Unbooked	Double Booked
All	1339	1227	112	25
		Total	91%	8%
Group Visits	46	39	7	7
		Total	84%	15%
Procedures	11	8	3	0
		Total	72%	27%

3% of slots used for group visits
0% of slots used for procedures

Scheduled Appointments

[Graphs](#)

[Group Visit and Procedure Details](#)

Category	Appts	Kept	No Show	Late
All	1234	1107	127	31
		Total	89%	10%
Group Visits	47	37	10	1
		Total	78%	21%
Procedures	7	7	0	1
		Total	100%	0%

Metrics

[Graphs](#)

% Kept Appts	Future Capacity	Third Available
82.67%	64.39%	2

Continuity

[Graphs](#)

[Continuity Details](#)

Visits	PCP	Team	Team without Floats
554	428	499	499/554
	77%	90%	90%

Planned Care Registry Outreach

REPORT SPECIFICATIONS Run 4/23/14 Federal

Green Pod 474 Patients

Patient Details	Visits and Appointments	Outreach Details	Patient Care Alerts
<p>Age: 50 Phone: Language: English ACO: N OB Status: Groups:</p>	<p>PCP: Van Eimeren, William Last Visit: 03/11/2014 Van Eimeren, W-RE Payer: Medicaid FQHC Next appt: Appt on 04/24/2014 for BRF-Cough, Lipids Recheck with Van Eimeren, William</p>	<p>Edit Date Reviewed: 3/28/2014 Comments: OV 6 weeks--reassess cough and allergy, recheck lipids (mammo was ordered on 2-18-14 pt was to go to Lutheran Hospital) EF Call Attempt: Call Status:</p>	<p>Past Due - Colorectal Screening (colonoscopy, sigmoidoscopy or FOBT) Past Due - Last Blood Pressure >= 140/90 on 03/11/2014 Past Due - Mammography Screening</p>
<p>Age: 63 Phone: Language: English ACO: N OB Status: Groups:</p>	<p>PCP: Andreen, Kristin Last Visit: 04/15/2014 Andreen, K-RE Payer: Medicaid FQHC Next appt: Appt on 04/29/2014 Re-HTN Follow Up with Andreen, Kristin</p>	<p>Edit Date Reviewed: 3/28/2014 Comments: Appt made for 4-08-14 with PCP for Glucose intolerance and FOBT cards. EF Call Attempt: 1st Call Call Status: Made contact</p>	<p>Past Due - ACO Care Team HRA Past Due - Colorectal Screening (colonoscopy, sigmoidoscopy or FOBT) Past Due - Tdap/TD Vaccine 04/23/2014 - Pneumovax Vaccine 1 Emergency Room Visit(s) in last 30 days - 04/10/2014</p>
<p>Age: 51 Phone: Language: English ACO: N OB Status: Groups: DMGV</p>	<p>PCP: Van Eimeren, William Last Visit: 03/14/2014 Van Eimeren, W-DIA Payer: Medicaid FQHC Next appt: Appt on 04/29/2014 for RE - Meds/labs with Van Eimeren, William</p>	<p>Edit Date Reviewed: 3/18/2014 Comments: per pcp pt due in 3 month 6-14-14. EF Call Attempt: Call Status:</p>	<p>Past Due - Colorectal Screening (colonoscopy, sigmoidoscopy or FOBT) Past Due - Diabetes Eye Exam Past Due - Self Management Goal (Diabetes, Hypertension, Tobacco,) Past Due - Tdap/TD Vaccine 04/23/2014 - Pneumovax Vaccine</p>
<p>Age: 53 Phone: Language: English ACO: N OB Status: Groups:</p>	<p>PCP: Andreen, Kristin Last Visit: 04/15/2014 Andreen, K-RE Payer: Medicaid FQHC Next appt: Appt on 04/29/2014 at 10:40AM for RE -Mood Recheck with Andreen, Kristin</p>	<p>Edit Date Reviewed: 5/29/2013 Comments: recent loss of godmother today, pt upset and crying, has support from children and her mother. CM reminded pt she can call the clinic at anytime for any additional support she may need. Erlinda ext 7560 Call Attempt: 1st Call Call Status: Made contact</p>	<p>Past Due - ACO Care Team HRA Past Due - Mammography Screening Past Due - Tdap/TD Vaccine 04/23/2014 - Consider Pnuemovax Vaccine</p>



Lessons Learned

In-reach and Outreach Tools

Outreach-Registry

Mature outreach tool

Decision support

Top of the line process

Supports team based care

In-reach-Huddle

Chart scrubbing tool

Linked to outreach

Shared with patient

Supports team based care

Outreach Linked to the Visit

Patient Details	Visits and Appointments	Outreach Details		Patient Care Alerts
<p>Steve</p> <p>DOB: Long time ago Age: 62 Phone:</p> <p>Language: English ACO: N OB Status: Groups:</p>	<p>PCP: Chen, Carolyn Sze-yun</p> <p>Last Visit: 09/28/2012 Chen, C-BRF, 09/28/2012 Davis, M- Payer: Medicaid FQHC Next appt: Appt on 11/07/2012 at 02:40PM for RE -Bp, A1c with Chen, Carolyn Sze-yun</p>	<p>Edit</p>	<p>Date Reviewed: 11/5/2012 Comments: PT has an upcoming appt with PCP (IH) Call Attempt: Call Status:</p>	<p>Past Due - Colorectal Screening (colonoscopy, sigmoidoscopy with a barium enema or FOBT) Past Due - DM Eye Exam Past Due - Last A1c > 9 on 07/25/2012 Past Due - Needs Review of Pain Contract Past Due - Pain Needs Review of FAS Past Due - Pain Needs Review of PHQ Past Due - Universal SBIRT Screen Due Now - Last BP >= 140/90 on 09/28/2012</p>

CarePlanner Link to Outreach

Person Nbr	Patient Name	PCP/ Status	Phone Number	Age/ DOB	Gender	Last Visit	ACO
9999	Steve	PCP: Chen, Carolyn Sze-yun Status: Active		62 Year(s)	M	09/28/2012 Chen, C CarePlan Rvw:	X

Alerts	Appts	Active Problem List
Past Due - DM Eye Exam Past Due - Last A1c > 9 on 07/25/2012 Past Due - Universal SBIRT Screen Past Due - Needs Review of Pain Contract Past Due - Pain Needs Review of PHQ Past Due - Pain Needs Review of FAS Past Due - Colorectal Screening (colonoscopy, sigmoidoscopy with a barium enema or FOBT) Due Now - Last BP >= 140/90 on 09/28/2012 Abnormal BMI - BMI was 28.21 on 09/14/2012 ACO Care Team Score is 2	Appt on 11/07/2012 at 02:40PM for RE -Bp, A1c with Chen, Carolyn Sze-yun	07/11/2012 - Hypertension - 401.9 07/29/2010 - Ulcer, acute duodenal w/hemorrhage w/o obst - 532.00 07/22/2009 - Diabetes II, uncomplicated - 250.00 04/08/2008 - Low back pain - 724.2 Depressive disorder, NOS - 311

Active Medications				
Start Date	Stop Date	Brand Name	Generic Name	Instructions
10/31/2012	11/29/2012	VICODIN	HYDROCODONE BIT/ACETAMINOPHEN	take 1 Tablet by Oral route every 12 hours
07/11/2012	07/12/2013	LISINOPRIL	LISINOPRIL	1 tablet daily
07/11/2012	07/12/2013	OMEPRAZOLE	OMEPRAZOLE	take 1 capsule (40MG) by oral route every day before a meal
07/11/2012	07/12/2013	SIMVASTATIN	SIMVASTATIN	take 1 tablet (10MG) by oral route every day in the evening
07/11/2012	07/11/2013	GLIPIZIDE ER	GLIPIZIDE	take 1 tablet (5MG) by oral route every day with a meal
07/11/2012	07/10/2013	METFORMIN HCL	METFORMIN HCL	take 1 tablet (500MG) by ORAL route every evening for 365 days at bedtime
03/20/2012	03/19/2013	ACCU-CHEK AVIVA	BLOOD SUGAR DIAGNOSTIC	take by Misc.(Non-Drug; Combo Route) route for 365 days as directed
03/20/2012	03/19/2013	LANCETS	LANCETS	apply by Misc.(Non-Drug; Combo Route) route for 365 days as directed
03/19/2012		ACCU-CHEK AVIVA PLUS	BLOOD-GLUCOSE METER	apply 1 Strip by Percutaneous route 2 times every day to test blood sugar for diabetes 250.00
01/04/2012	01/04/2013	MICONAZOLE NITRATE	MICONAZOLE NITRATE	apply by topical route 2 times every day to the affected area(s) in the morning and evening

Diabetes - High Risk

Systolic	Diastolic	Eye Exam	Foot Exam	A1c (Last 3)
170	84	01/01/00	7/11/12	07/25/2012 - 12.7

PCP: Farrell, Edward
Status: Active
Payer: Medicare Clinica FQHC
Group Visits: DM EF

57 Year(s)

M

04/04/2014 Farrell, E
CarePlan Rvw: 4/12/13

Alerts

Past Due - Diabetes Eye Exam
 Past Due - Yearly Substance Risk Screening (SBIRT)
 Past Due - Self Management Goal (Diabetes, Hypertension, Anticoagulation,)
 Past Due - CRC Screen (colonoscopy, sig or FOBT)
 Due Now - INR - Last INR 2.30 on 4/4/14 Target 3.00 - 4.00
 2 Wks - Last A1c 7 - 9 on 02/07/2014
 Abnormal Body Mass Index - was 48.81 on 02/07/2014

Appts

Appt on 04/25/2014 at 08:20AM for BRF-Follow Up And INR with Farrell, Edward

 Appt on 04/25/2014 at 08:20AM for BRF-Follow Up And INR with Thornton Charlotte Ricchetti PharmD

Active Problem List

08/23/2013 - S/P CABG x 1, in 1999 and 2001-V45.81
 08/20/2013 - Hx of PE x 2 and DVT x 3 - 415.19
 01/09/2013 - Hyperlipidemia LDL goal <70 - 272.4
 03/15/2012 - Obesity - 278.00
 03/15/2012 - Unspecified essential hypertension - 401.9
 06/01/2010 - DM w/rerenal manifest, type II - 250.40
 10/02/2009 - Emphysema - 492.8
 Anticoagulant therapy - V58.61
 Chronic ischemic heart disease - 414.9
 DM w/rerenal manifest, type II - 250.40

Active Medications

Start Date	Stop Date	Brand Name	Generic Name	Dose	Instructions
01/08/2014	01/08/2015	HUMULIN R	INSULIN REGULAR, HUMAN	100 unit/mL	30 units SQ TID before meals and sliding scale
01/08/2014	01/08/2015	METOPROLOL TARTRATE	METOPROLOL TARTRATE	100 mg	take 1 tablet by oral route 2 times every day with meals
10/22/2013	10/21/2014	WARFARIN SODIUM	WARFARIN SODIUM	5 mg	take 2 Tablet by oral route every day
08/30/2013	08/29/2014	HUMULIN N	NPH, HUMAN INSULIN ISOPHANE	100 unit/mL	inject 120 units by Subcutaneous route every morning and 100 units every evening
08/23/2013	08/23/2014	ALBUTEROL SULFATE HFA	ALBUTEROL SULFATE	90 mcg	inhale 1 - 2 Puff(s) by INHALATION route every 4 - 6 hours as needed
08/16/2013	08/17/2014	GLUCOPHAGE	METFORMIN HCL	1,000 mg	1 tablet twice daily
08/16/2013	08/16/2014	AMLODIPINE BESYLATE	AMLODIPINE BESYLATE	10 mg	take 1 tablet (10MG) by ORAL route every day
07/02/2013	07/02/2014	CRESTOR	ROSUVASTATIN CALCIUM	40 mg	take 1 tablet by oral route every day (stop lipitor)
05/13/2013	05/12/2014	FUROSEMIDE	FUROSEMIDE	80 mg	take 1 tablet by oral route 2 times every day
05/07/2013	05/08/2014	METOLAZONE	METOLAZONE	5 mg	take 1 tablet (5MG) by oral route every day

Diabetes - High Risk

Systolic	Diastolic	Eye Exam	Foot Exam	A1c (Last 3)
120	66	06/23/11	8/23/13	02/07/2014 - 8.0 01/17/2014 - 8.0 11/15/2013 - 8.4

Group Visit: DM EF

Anticoagulation

Indication(s)	Therapy Start	Therapy Duration	INR	Goal Range	Risk
7111-OTH PULMONARY EMBOLISM&INFARCTION	01/01/1997	lifelong	4/4/2014 - 2.30 3/21/2014 - 3.90 3/7/2014 - 2.20	3.00 - 4.00	Low

Open Referrals

11/15/2013 - Referral: Orthopedics. Evaluate and treat.

Future Labs

Diagnostics

06/20/2013 - scheduled - MRI, cervical spine, w/o contrast -

Q&A:

