Primary Care Management and Medical Homes: How to better leverage informatics to achieve great outcomes

David W. Bates, Andrew Steele, David A, Dorr,
Adrian Zai

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Primary Care Revitalization Gurus

- The Medical Home (1967)
- Practice Redesign (1993)
- Chronic Care Model (1998)
- Idealized Design of Clinical Office Practices (1998)
- IOM Quality Chasm, Six Aims: Safe, Effective, Patient-centered, timely, efficient , equitable health care
- Future of Family Medicine's "New Model of Care" (2004)
- TransformMED (2005)
- AAFP Practice Enhancement Forum (2005)
- Joint Principles of the Patient Centered Medical Home (2007)
- The Commonwealth Fund/Qualis Health Medical Home RFP
- Medicaid Medical Home Demonstration

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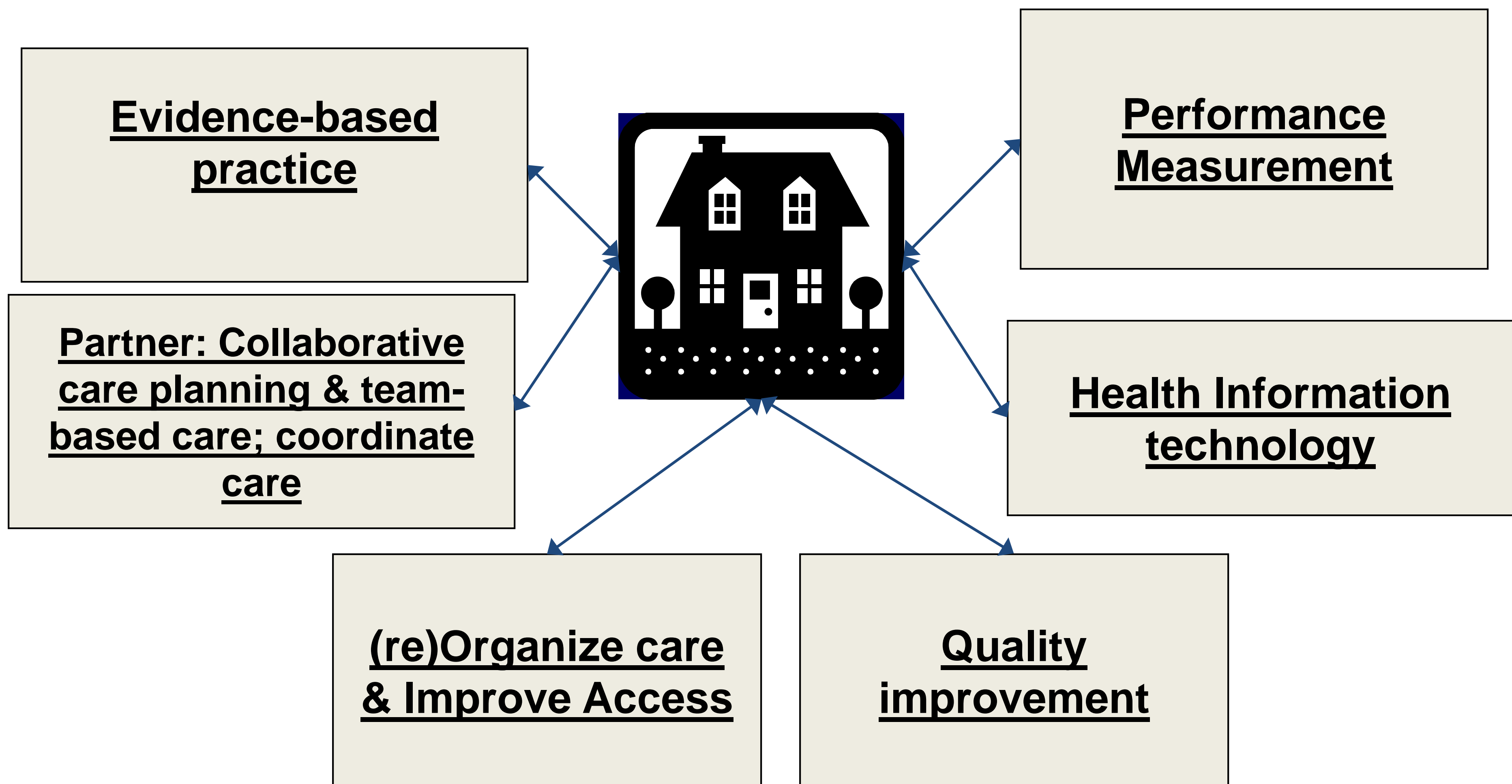
(some) Elements of a Medical Home



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Overview of Panel

- EHRs and patient-centered medical homes – David Bates
- Clinical Registries: Using Business Intelligence and Point-of-Care Solutions to Drive Chronic Care Management – Andrew Steele
- Creating an Integrated Care Coordination Information System for patients at high risk – David Dorr
- Proactive population management -Adrian Zai

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Creating an Integrated Care Coordination Information System for patients at high risk

- Précis : a **randomized clinical trial** to test **incentives** to redesign care using **advanced HIT** and **primary care clinical teams** to improve outcomes for patients with complex conditions

David A. Dorr, MD, MS Oregon Health & Sciences University

- Supported by **The John A. Hartford Foundation**, **AHRQ**, NLM, Intermountain, OHSU

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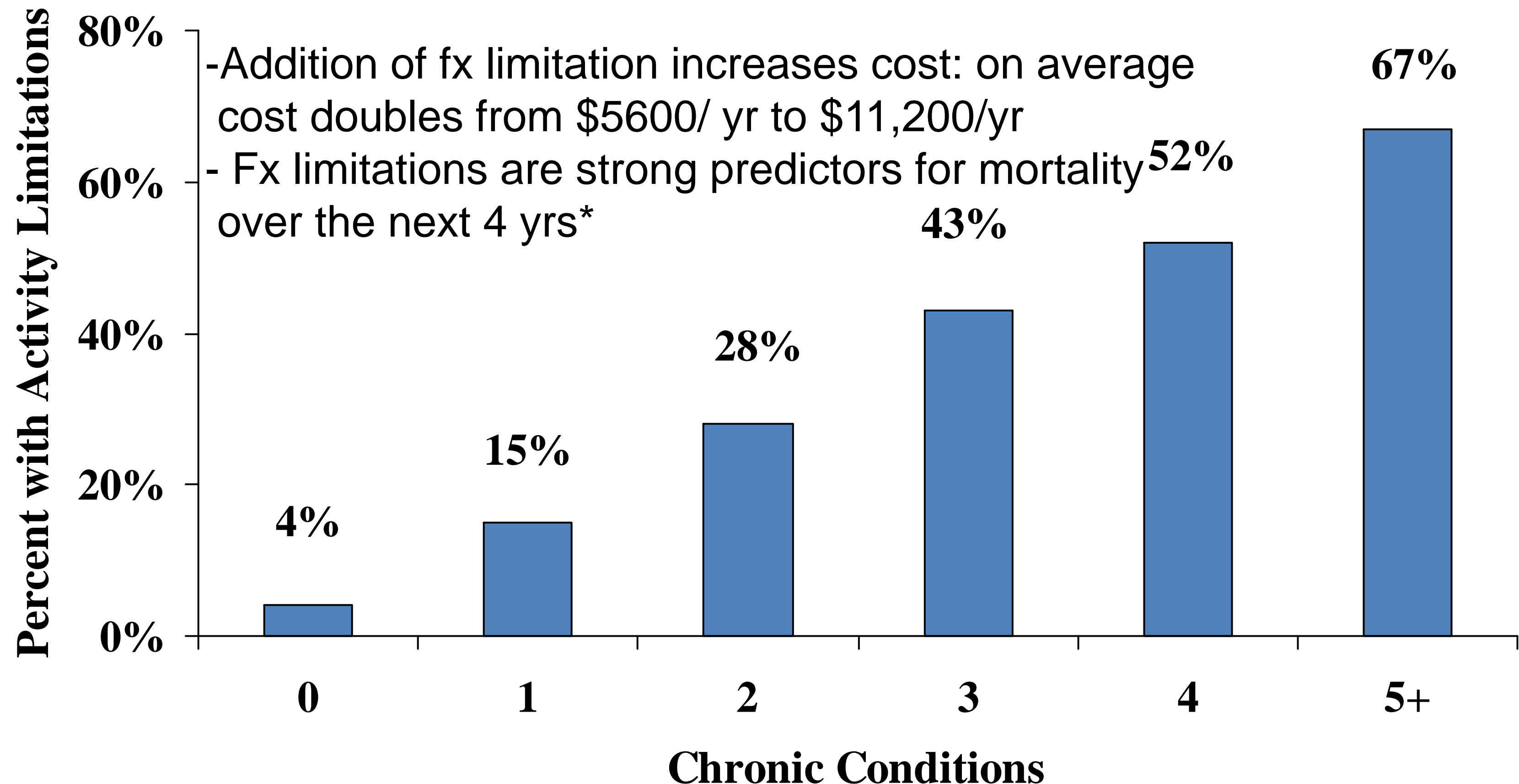
Activity Limitations by Number of Chronic Conditions



Source: G. Anderson, "Hospitals and Chronic Care", PowerPoint Presentation to the American Hospital Association. Partnership for Solutions. 16 June 2004.

S. Lee, "Development and Validation of a Prognostic Index for 4-Yer Mortality in Older Adults" JAMA. 2006;295(7):801-808.

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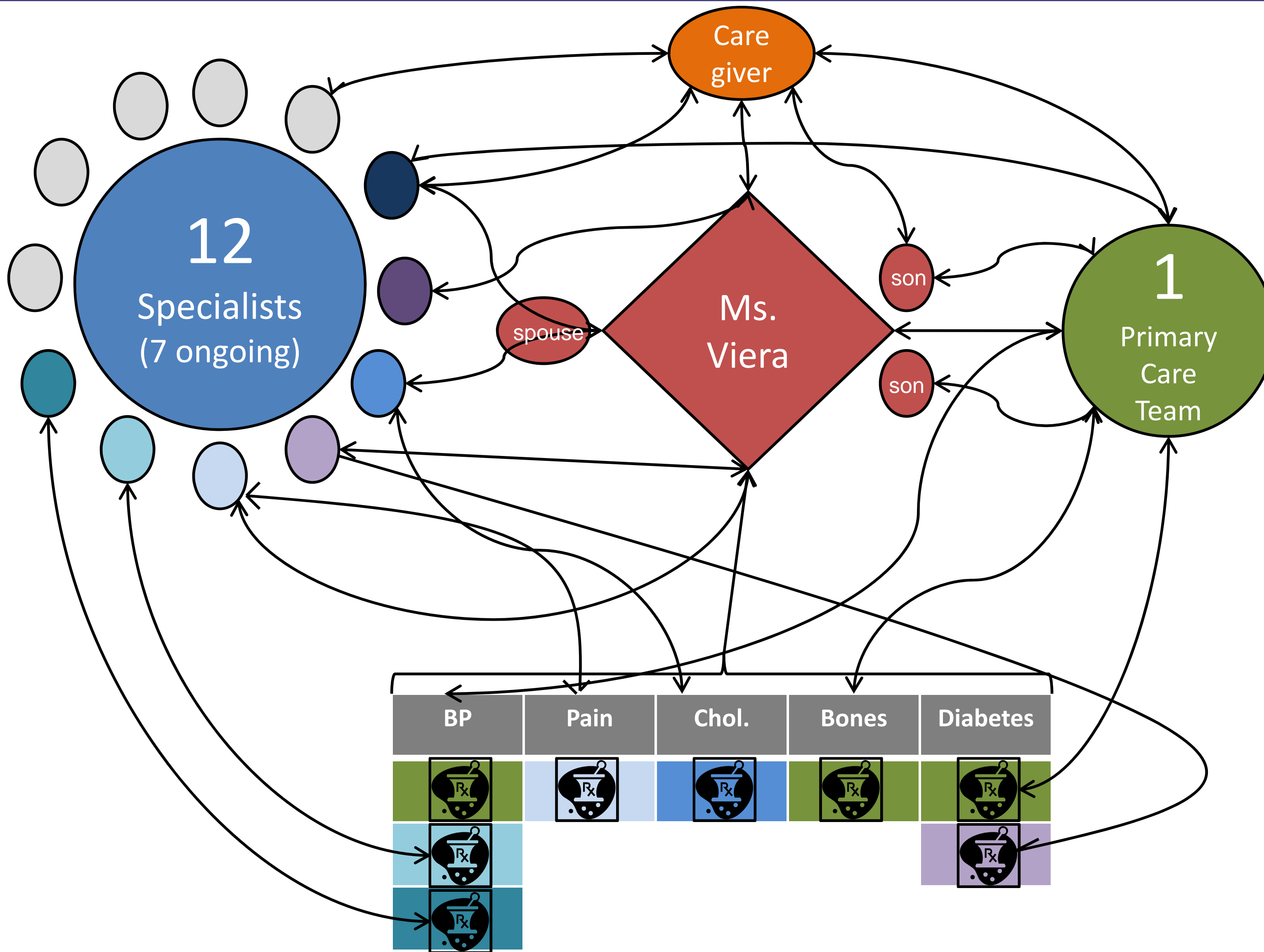
One person's Care patterns



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Intervention: Care Management Plus – care manager to team + enhanced HIT

Controlled trial showed reduction in hospitalizations and mortality, improvement in efficiency, quality metrics, and satisfaction

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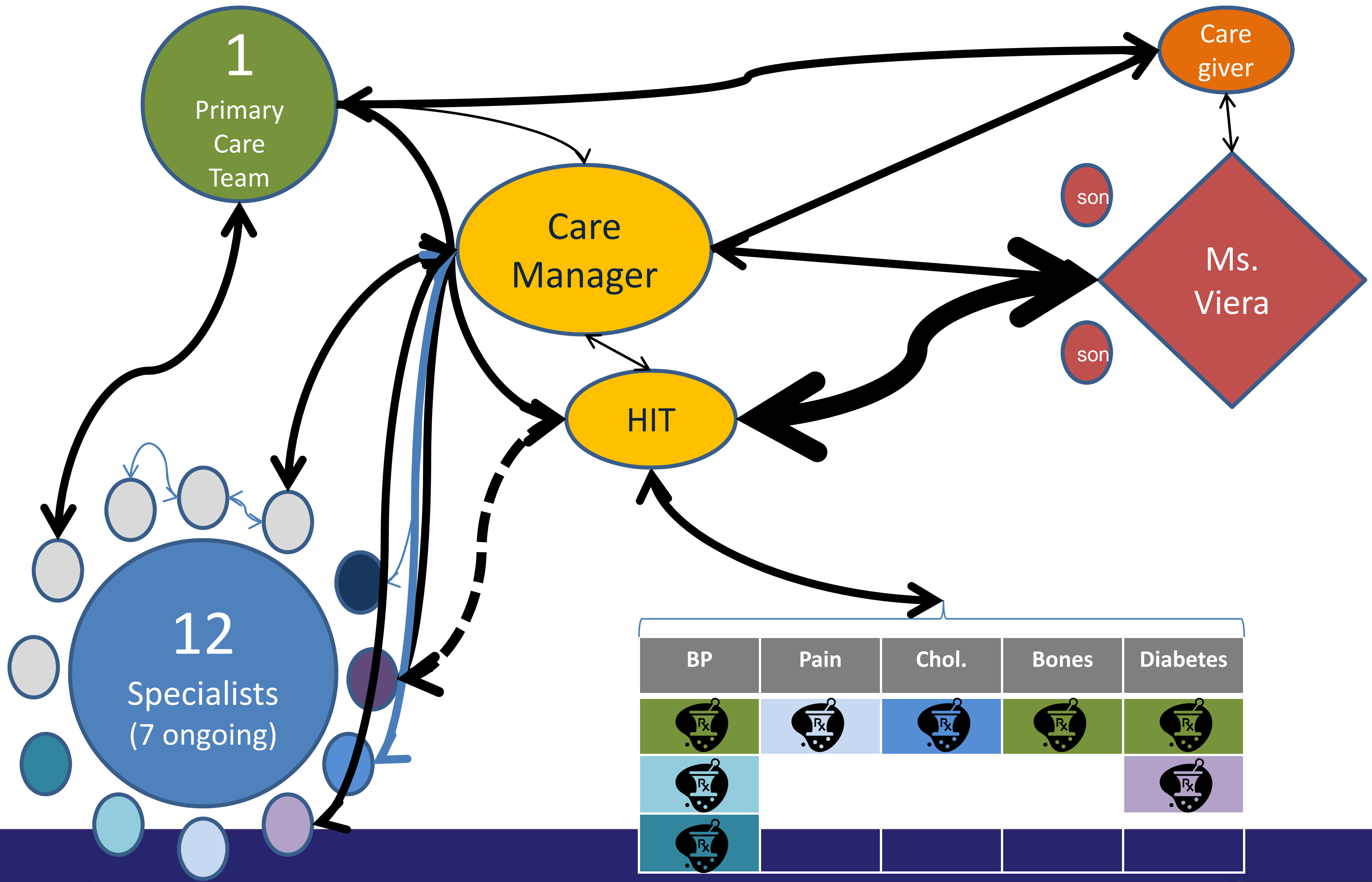
What changes with CM+ and other new models?



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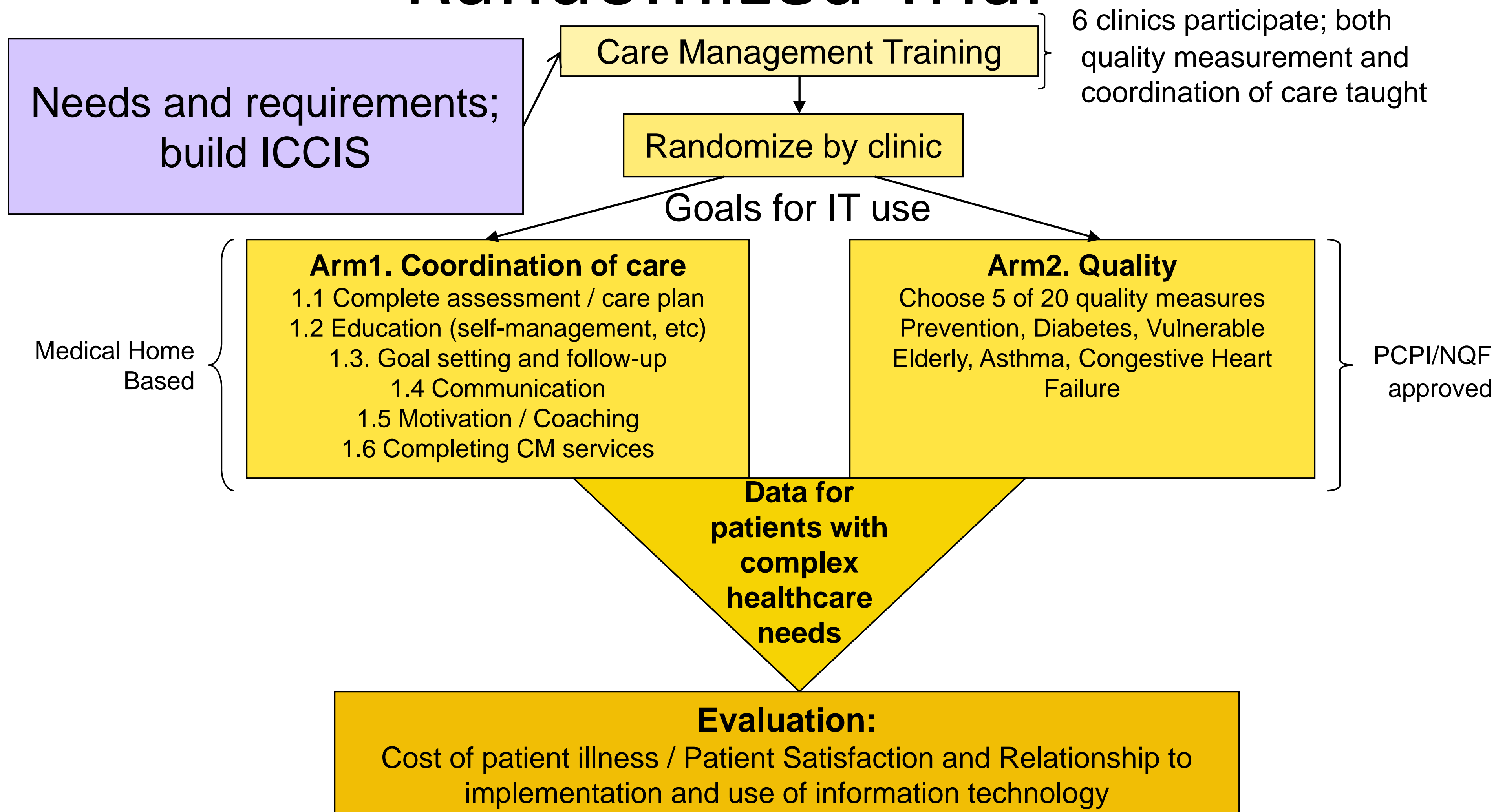
“Hello, Computer”

Randomized Trial



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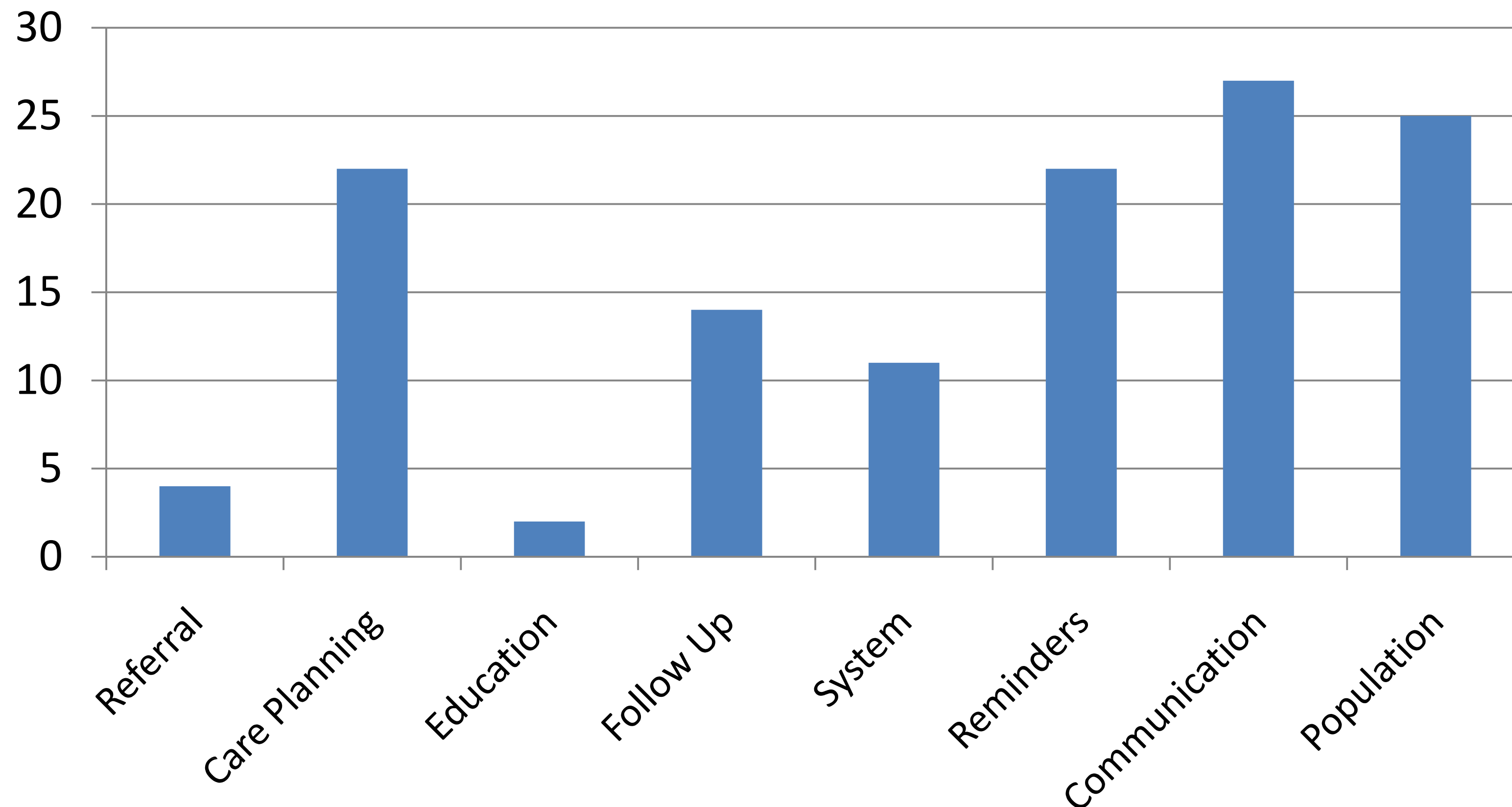
Most EHRs, as implemented, STILL don't have necessary functions



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Behkami, Proc AMIA, 2009

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Insufficiencies

- The 80/20 rule: 80% organizational & workflow / 20% technology
- Incentives
- Encoding dysfunctional processes
- Acculturation and tradition
- Population management

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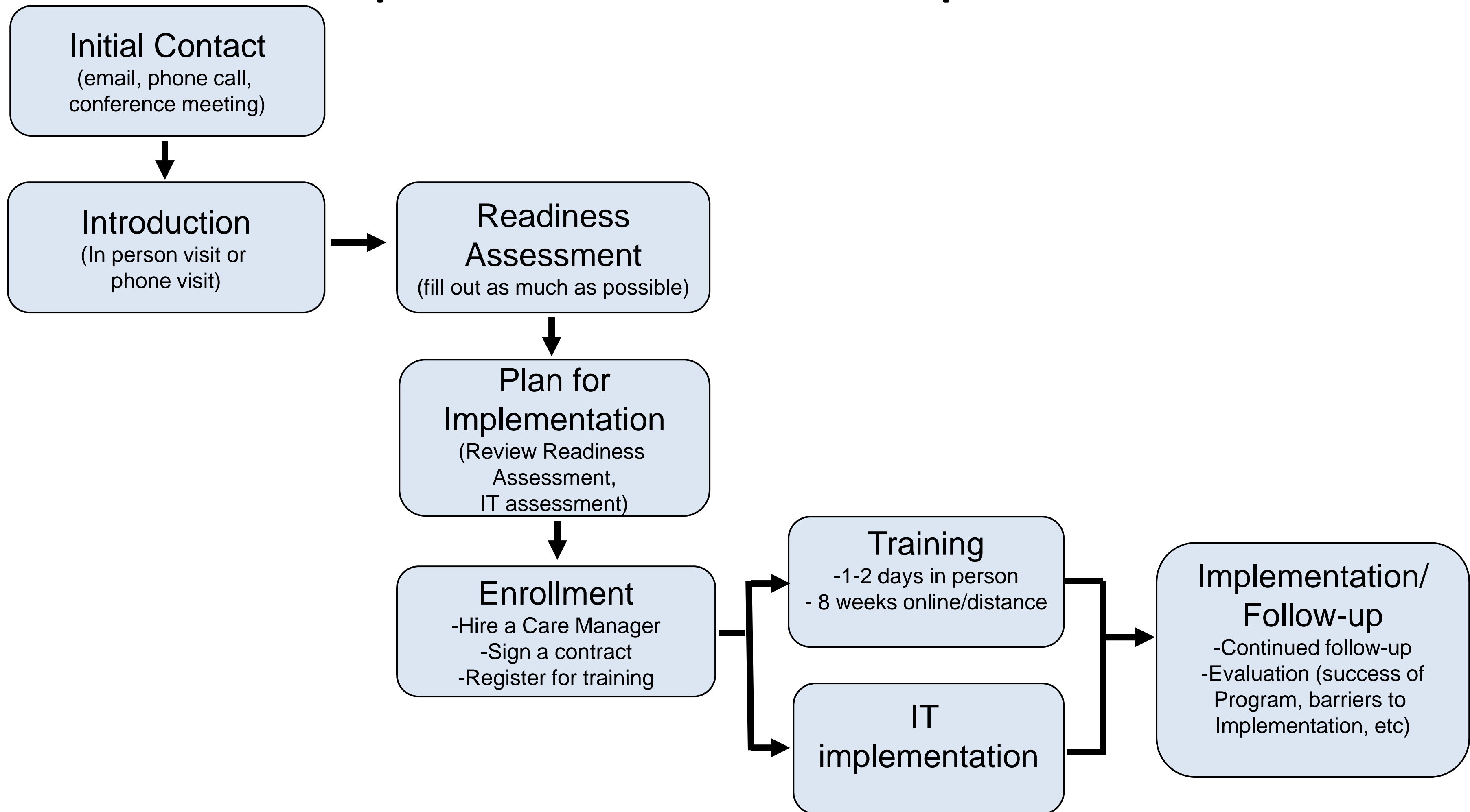
Implementation is a process



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Meaningful Use of Health Information Technology categories as a guide to organize results

- Improving quality & safety & reducing disparities
- Care Coordination
- Population Management
- Patient & Family Engagement

www.surveymonkey.com/s/mu_diff

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Care coordination: population Tickler

Remind about communication tasks

Facilitate the nuts and bolts of teamwork

Call

Care Manager Encounter Tickler List

Care Manager: Ann Larsen

Sched. Dt. and Time	Encounter Type	Enc. Reason	MMI	First Name	Last Name	Phone Number	Pri
2/17/04	Telephone Contact	DM F/U				(801)	Wo
2/17/04	Telephone Contact	DM F/U				(801)	Wo
2/17/04	Telephone Contact	DM F/U				(801)	Wo
2/17/04	Telephone Contact	DM F/U				(801)	Wo
2/17/04	Telephone Contact	Depression F/U				(801)	Ob
2/17/04	Telephone Contact	Dep F/u				(801)	Sm
2/17/04	Telephone Contact	DM F/U				(801)	Wo
2/17/04 8:30 AM	CM Office Visit					(801)	Wo
2/17/04 9:00 AM	Class					(801)	Sm
2/17/04 9:00 AM	Class					(801)	Me
2/17/04 9:00 AM	Class					(801)	Ob
2/17/04 9:00 AM	Class					(801)	Wo
2/17/04 10:40 AM	MD Office Visit	DM F/U				(801)	Wo
2/17/04 1:50 PM	MD Office Visit	DM F/U				(801)	Ru
2/17/04 3:00 PM	CM Office Visit					(801)	Wa
2/17/04 3:50 PM	MD Office Visit					(801)	Wo

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ICCIS Care Coordination Workflow

A centralized reminder list of tasks and communications that were proactively planned but incomplete allows population-based tasks to be merged with individual encounter tasks.

Care Manager Encounter Tickler List

Care Manager: <----- All -----> d Date: 11/23/2009 ... 12/23/2009 ... Run

Care Manager: All Care Managers
For Time Period: 11/23/2008 to 12/23/2009

	Scheduled Date	Scheduled Time	Encounter Type	Reason	EHR ID	First Name	Last Name	Phone	PCP	Notes
Select	2009-12-18		Telephone Contact	Clinical Protocol(s)	4582317	Mariah	Bouchard	456.732.5236	Carl Generic	Quality Measure: Age PHQ2: 0 Lab Date: 12/01/2009
Select	2009-12-17	08:00	Telephone Contact	Goals	4582317	Mariah	Bouchard	456.732.5236	Carl Generic	PHQ9 Follow-Up:
Select	2009-11-28		CM Office Visit	Clinical Protocol(s)	4582317	Mariah	Bouchard	456.732.5236	Carl Generic	
Select	2009-11-16	13:00	CM Office Visit	Status Check	88888888	zzzzbugs	zzzzbunny			Meet with family and patient to discuss care plan
Select	2009-11-12	12:00	CM Office Visit	Status Check	9999999	ZZDavid	ZZowen			Meet with Patient and family members to discuss a care plan
Select	2009-10-30	10:00	Care Conference	Diabetes	88888888	zzzzbugs	zzzzbunny			
Select	2009-10-21	08:00	Telephone Contact	Goals	65748398	bobby	Cline	987.546.7765	Hillary Caseman	Goals Follow-Up:
Select	2009-10-10	08:30	Home Visit	Functional Status	1324234	Harry	Binnes	9874584587	Parnel Fieldman	Goals Follow-Up: Nutrition: eat less;

Select 2009-11-16 13:00 CM Office Visit Status Check 88888888 zzzzbugs zzzzbunny Meet with family and patient to discuss care plan

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Population management: Proactive and focus on risks

Population registries usually focus on disease

- Improve disease-specific indicators
- Less effective at overall improvement (utilization)
- Risk stratification may help (Dorr et al, JAGS, 2006)…
- But must deliver to those who need it!

Risk lists

High Risk Patient List I

ICCIS Only Clinic Only Both ICCIS & Clinic

EHR ID	Last Name	First Name	Clinic Priority	ICCIS Priority
1324234	Binnes	Harry	High	
65748398	Cline	bobby	High	

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Quality measure dashboard

Summary Graphs: Overall Team Comparison **Breakouts by Measure:** ---Please Select---

-Prevention- -Diabetes- -Asthma- -CAD- -Hypertension-

DIABETES

Team Name	A1c < 7.0% (18+): Target Score: 52%	Score	N	LDL: Target Score: 55%	Score	N	Pneumovax: Target Score: 75%	Score	N
OHSU GIM		52%	201		57%	201		70%	200
Cascade		50%	201		57%	201		76%	200
Diamond		46%	263		59%	263		61%	263
Hart		54%	201		55%	201		69%	201
Hood		54%	261		62%	261		78%	261
River		52%	215		53%	215		64%	215
Tabor		68%	31		42%	31		97%	31

Dashboard can be run by clinic, team, or individual PCP

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ICCIS Interactive Quality Reports

Selected Measure: Diabetics with hemoglobin A1c measured in the past 6 months (18-75)

Total: 7 Print

Value Adherence Rate: 57.143% **Date Adherence Rate: 85.714%**

Update Update

No Longer in Practice	Assign to CM Task	Patient	Phone	Physician	Lab	Lab Result	Lab Date	Exclude from ALL Diabetes	Exclude from this Measure ONLY
☐	☐	Binnes, Harry	9874584587	Parnel Fieldman	A1C	9.1	10/06/2009	☐	☐
☐	☐	Cline, bobby	987.546.7765	Hillary Caseman	A1C	6.1	09/30/2009	☐	☐
☐	☐	Gibbs, Jenny		Carl Generic				☐	☐
☐	☐	Holden, Henry		Carl Generic	A1C	7.7	10/06/2009	☐	☐
☐	☐	Montoya, Jerry	124.256.3526	Hillary Caseman	A1C	5.9	10/02/2009	☐	☐

The abilities to document exclusions at multiple levels and generate targeted population-based review cycles avoid the problems caused by static quality reports and allow providers to efficiently focus outreach efforts on high risk populations.

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Patient Worksheet

Binnes, Harry | **PRINT**

MRN: 1324234 **Sex:** M **DOB:** 01/24/1956
Phone: 9874584587 **PCP:** Parnel Fieldman
Care Manager: Susie Example **Caregiver:**

Next Care Management Encounter

Sched Date	Sched Time	Encounter Type
01/06/2010	09:00 AM	CM Office Visit

Last Care Management Encounter

Sched Date	Sched Time	Encounter Type
12/04/2009	08:00 AM	Telephone Contact

Diagnoses

Diabetes, Cystic Fibrosis, Anemia

Medications

Medication	Dosage	PRN	Med Start Date
albuterol		☐	08/07/2008

Goals

Status	Follow Up Date	Goal	Note	score	Set Date
Completed	12/21/2009	Nutrition		10	12/05/2009
Completed	12/21/2009	Activity		5	12/05/2009
Completed	11/13/2009	Activity		6	11/13/2009
Completed	11/13/2009	Nutrition		8	11/13/2009
Pending		Meds			10/06/2009

PHQ

Date	PH2 Score	PHQ9 - Severity	Q9 Suicide	Followup
12/02/2009	6	25	3	
11/05/2009	3	17	3	12/04/2009
07/07/2009		10	2	
07/02/2009			0	

Functional Status

Date	ADL	IADL	MMSE	Pain
07/08/2009			2	9
12/11/2009				

Care Actions

Diabetes	Date/Value	Status
A1c in Last 6 mo	10/06/2009	OK
A1c < 7	9.1	**A1c out of Range**
LDL Last Year	09/30/2009	OK
LDL < 100	130	**LDL HIGH**

Preventative Care	Date/Value	Status
Patient > 50 needs flu shot at least once		**YES**

Last Doctor's Visit is not available

Patient Worksheet

When working with persons with multiple illnesses or complex illness, a clinical summary that captures a core set of information improves patient outcomes (1). Care coordination and behavioral modification (goal setting) elements often require special effort and the quality summary requires more advanced monitoring and implementation than most standard EHRs provide.

(1)Wilcox, Proc of AMIA Symp, 2005

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Early trial results: Dosage, process, and outcomes measures

	# pts	baseline	Study	Change
Process (%)				
HbA1c testing adherence	300	50.0	70.2	+20.2
LDL testing adherence	353	65.0	76.0	+11
Outcomes, mean (SD)				
Systolic BP levels (mm Hg)	103	148.9 (14.76)	134.22 (18.44)	-14.68
Diastolic BP levels (mm Hg)	103	83.25 (13.53)	76.98 (12.98)	-6.27
HbA1c levels (%)	82	8.85 (1.85)	8.10 (1.52)	-0.75
LDL levels (mg/dL)	78	143.62 (42.11)	120.94 (42.26)	-22.68

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  - Kelli Radican
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Thank you!

- dorrd@ohsu.edu
- www.caremanagementplus.org
- Take our anonymous survey on difficulty of implementing meaningful use measures : www.surveymonkey.com/s/mu_diff

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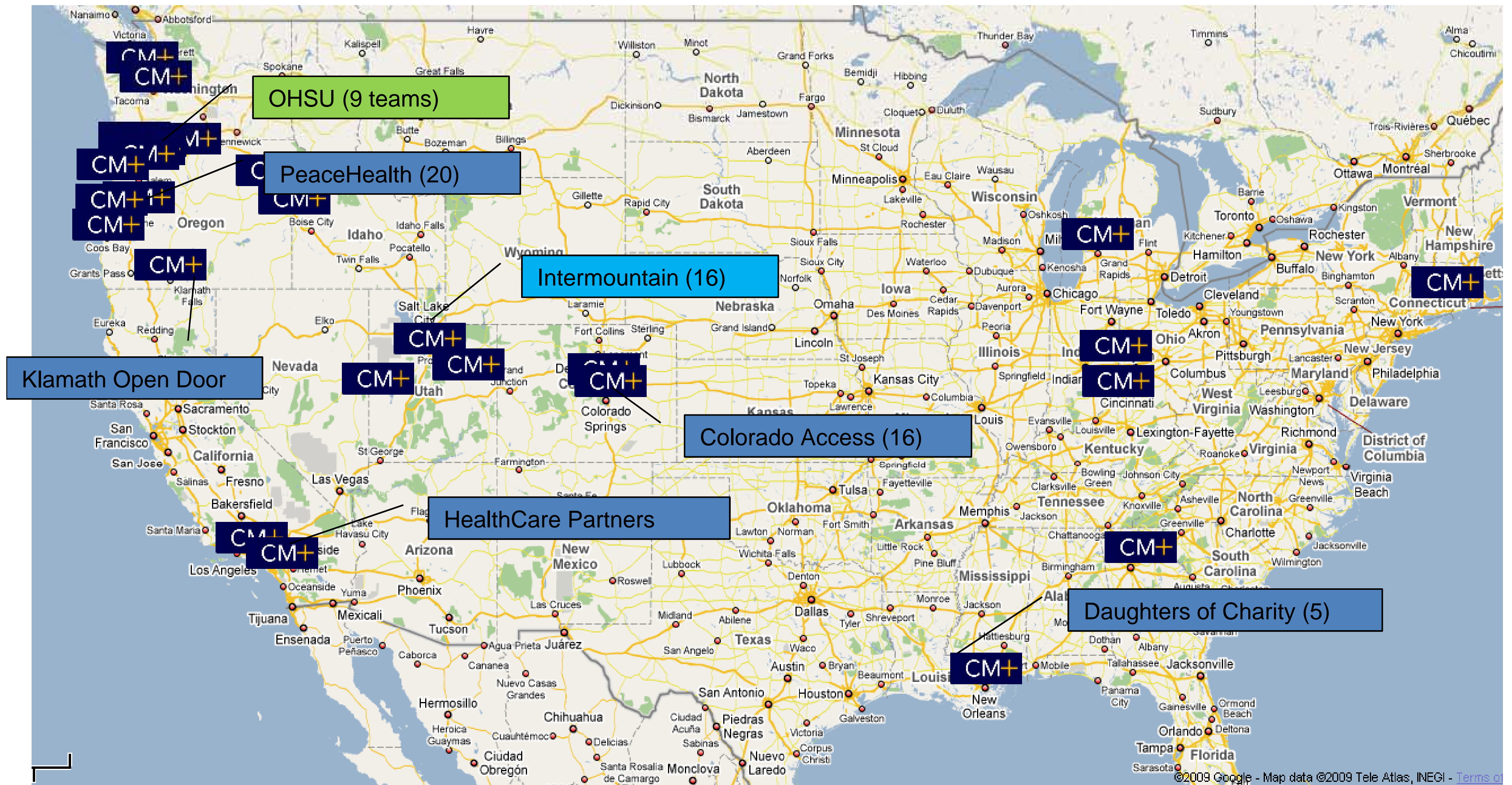
What have we learned about dissemination in rolling out the program to 143 clinical teams?



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