

Care Management Plus: Translating a Model of Outpatient Care Using People and Technology to Transform Health Care

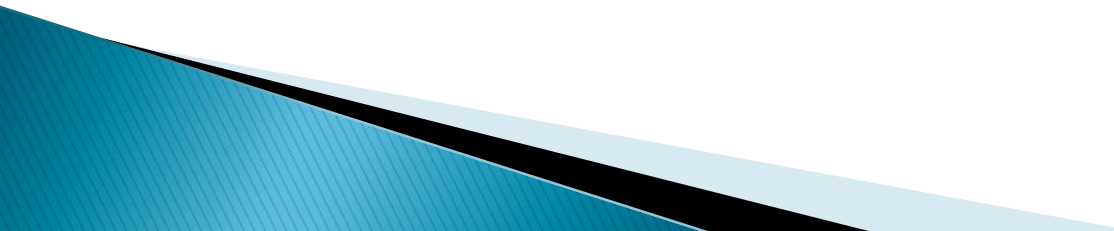
Adam Wilcox, PhD, David A. Dorr, MD MS,
Cherie Brunker, MD, Kelli Radican

Lessons learned

▶ Translational Research

- It takes effort to transform health care
- Evaluation results are critical
- We found success by attaching to broader trends

▶ Informatics

- Start with simple tools first
 - Find ways around full integration with EHRs where necessary
 - There are benefits to mobile informaticists
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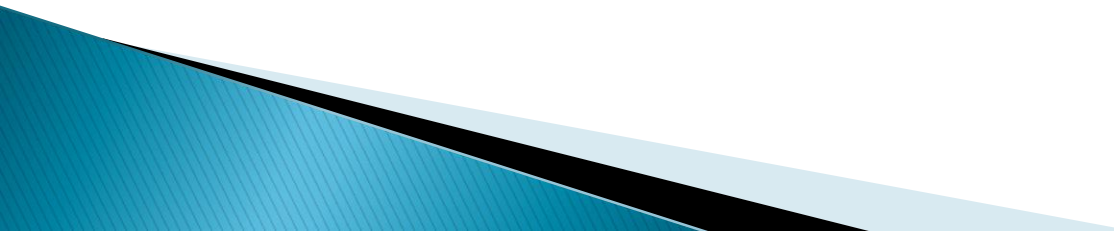
Case study

Ms. Viera

a 75-year-old woman
with diabetes,
systolic hypertension,
mild congestive heart failure,
arthritis and
recently diagnosed dementia.



Ms. Viera and her caregiver come to clinic with several problems, including

1. hip and knee pain,
 2. trouble taking all of her current 12 medicines,
 3. dizziness when she gets up at night,
 4. low blood sugars in the morning, and
 5. a recent fall.
- 

Ms. Viera's office visit

And Out in the hall:

6. The caregiver confidentially notes she is exhausted
7. money is running low for additional medications.

How can Dr. Smith and the primary care team handle these issues?

Care Management Plus

In primary care clinics

Referral

- For any condition or need
- Focus on certain conditions

Care management

Care manager

- *Assess & plan*
- *Catalyst*
- *Structure*

Technology

- *Access*
- *Best Practices*
- *Communication*

Evaluation

- Ongoing with feedback
- Based on key process and outcome measures

History of CM+

- ▶ Pre 2000: Care managers at Intermountain Healthcare
 - 7 clinics
 - Part of failed initiative to create Medicare managed care plan
- ▶ Oct 2001: Original proposal to John A. Hartford Foundation
 - “Evaluating the Impact of Geriatric Care Teams in Ambulatory Practice”
 - Interdisciplinary team supported by an electronic information system
 - Demonstrating health and financial benefits
 - Funded Feb 2002, for 4 years

Patient Information

ID Number: Last Name: First Name:
 DOB: * Age: Sex:

Phone: Cell Phone: Email:
 PCP: PCP Phone:

Insurance: Facility:
 Diab Collaboration FPP:

Date of Referral: * Care Mgr: Status:

Patient Search

ID Number:
 Last Name:
 First Name:
 Care Mgr:

Diag. Date	Diagnosis	Status	Sched Date	Sched Time	Encounter Type	Status
<input type="button" value="Edit"/> 2/28/2005	CHF	Active	<input type="button" value="Edit"/> 4/30/2005		Telephone Contact	Pending
<input type="button" value="Edit"/> 3/30/2004	Depression	Active	<input type="button" value="Edit"/> 1/30/2005		Hon	
<input type="button" value="Edit"/> 3/30/2004	Depression	Active	<input type="button" value="Edit"/> 1/26/2005		Telephone Contact	Resolved
<input type="button" value="Edit"/> 10/18/2004			<input type="button" value="Edit"/> 10/18/2004		Telephone Contact	Resolved

MH Packet Date	Symp	Severity	Fctnal	Diff	Dysth.	Q9	Suicide State	Suicide Risk	[Mood 1 2 3]	MoodImp	MoodSx	AnxImp	AnxSx
<input type="button" value="Edit"/> 1/26/2005	1	3	Somewhat	<input checked="" type="checkbox"/>	0		No Risk						
<input type="button" value="Edit"/>							No Risk		16	45	14	52	
<input type="button" value="Edit"/>							Low Risk						

Diab Assess Date

Diagnosis

Encounter

Meds

MH Instruments

Pediatric Assess

Diabetes History

Diab Pre/Post Knowledge Assess

Patient Goals

HF Follow-Up

New Patient

Save Patient

Delete Patient

Generate Clinical Note by Date

CMT database - example

Call

Care Manager Encounter Tickler List

Care Manager: Ann Larsen

Sched. Dt. and Time	Encounter Type	Enc. Reason	MMH	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)	Obi
2/17/04	Telephone Contact	Dep F/u				(801)	Sm
2/17/04	Telephone Contact	DM F/U				(801)	Wo
2/17/04 6:30 AM	CM Office Visit					(801)	Wo
2/17/04 9:00 AM	Class					(801)	Sm
2/17/04 9:00 AM	Class					(801)	Met
2/17/04 9:00 AM	Class					(801)	Obi
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)	Rur
2/17/04 3:00 PM	CM Office Visit					(801)	Wa
2/17/04 3:50 PM	MD Office Visit					(801)	Wo

Encounter Tickler

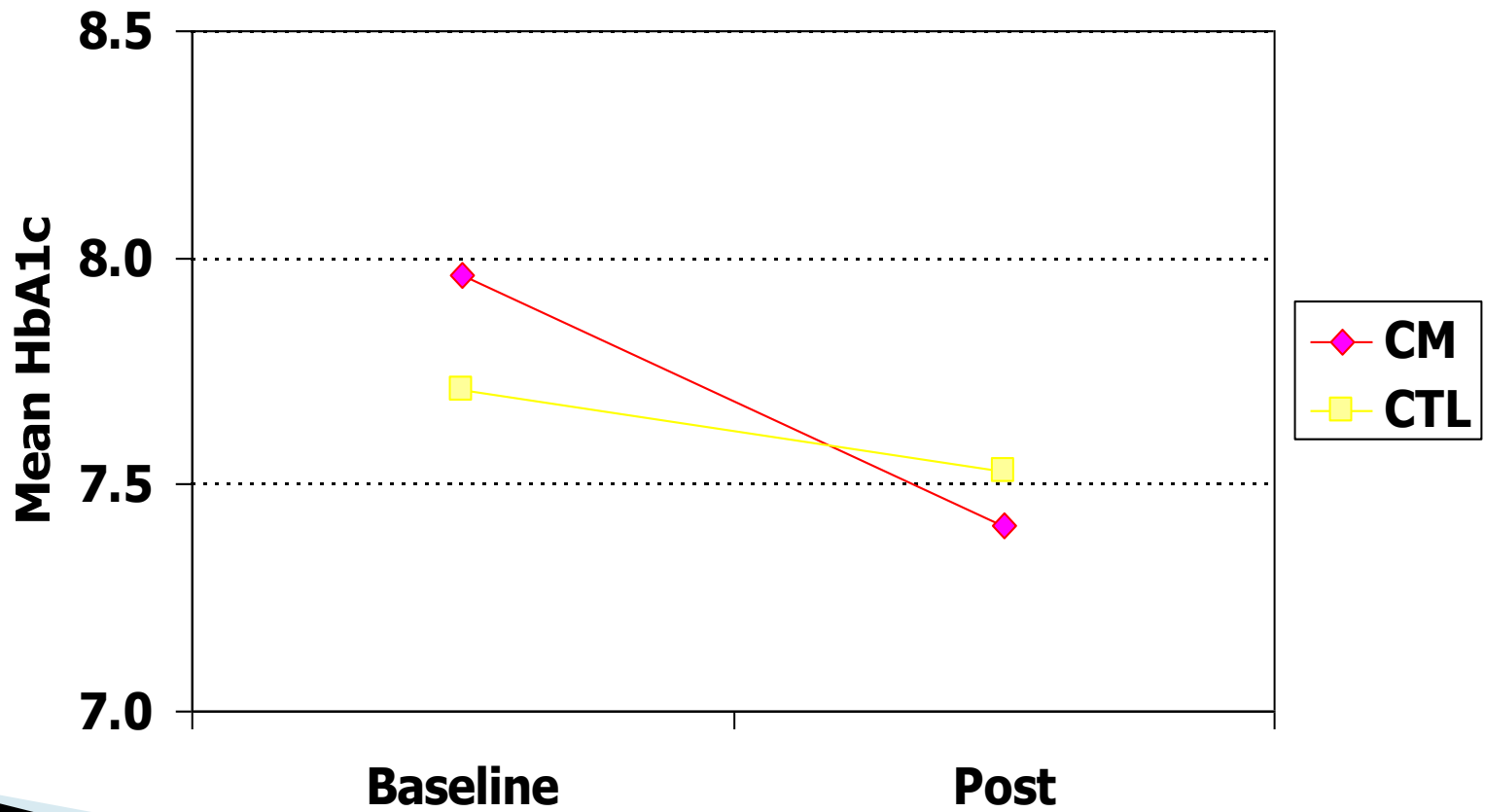
Before 3/10

IHC. Also detail
do. wait pay at
pm free
812-33-000

5 people
 Test
 who 14 people
 Home - do
 Back - head
 Turn on 5' 7" tall
 7-10 deep
 300

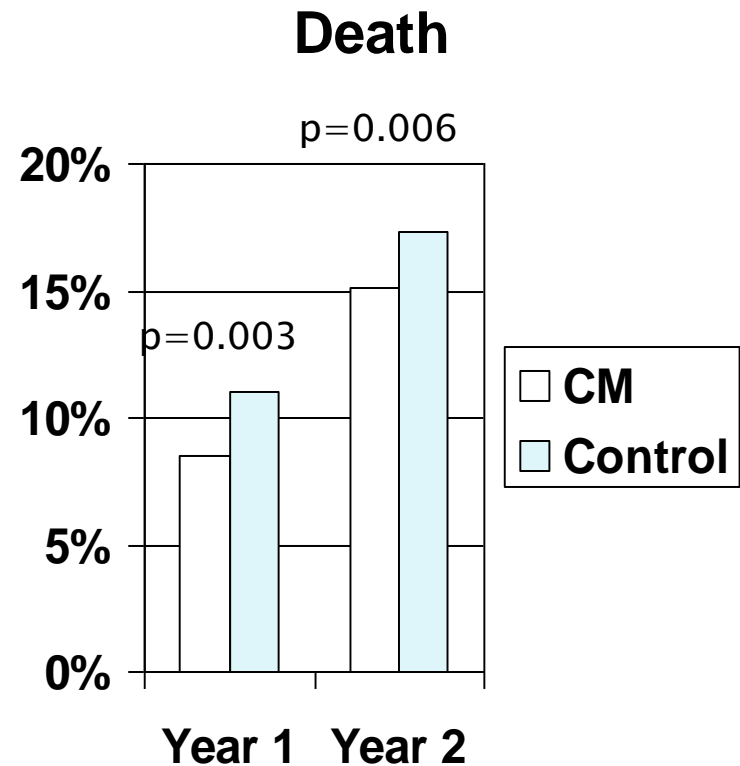
If from cat effeder

Mean HbA1c Levels



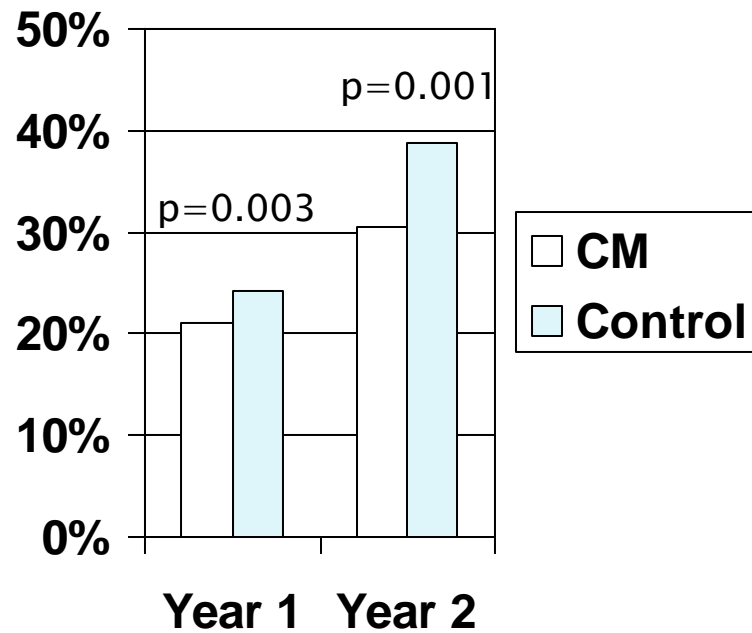
Retrospective diabetes: Death

- ▶ Diabetic patients who were sent to care managers were significantly less likely to die in the first and second year than their matched controls

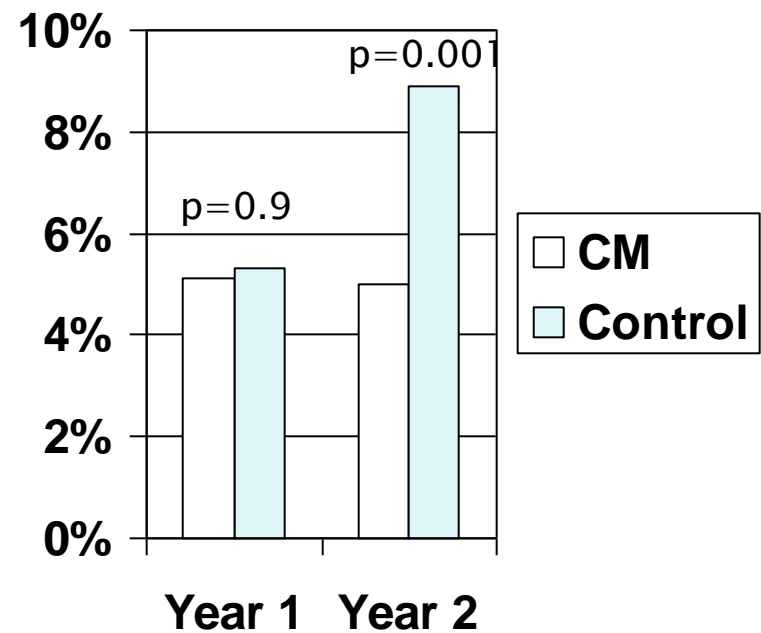


Hospitalizations

Hospital Admission



ACS Admission

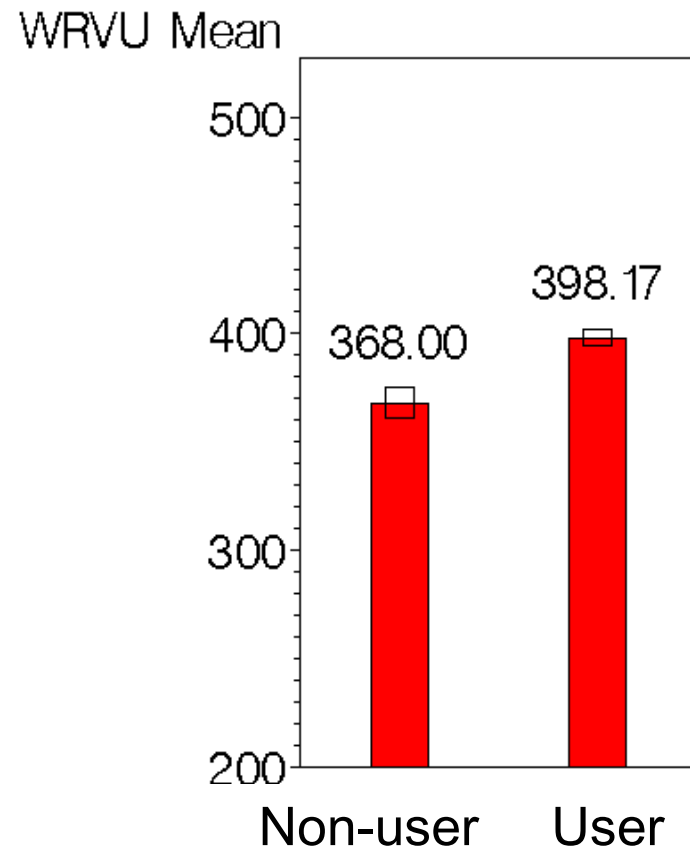


Productivity – same clinic

- ▶ Physicians who referred to care managers:

8% more productive

- ▶ Than peers in same clinic



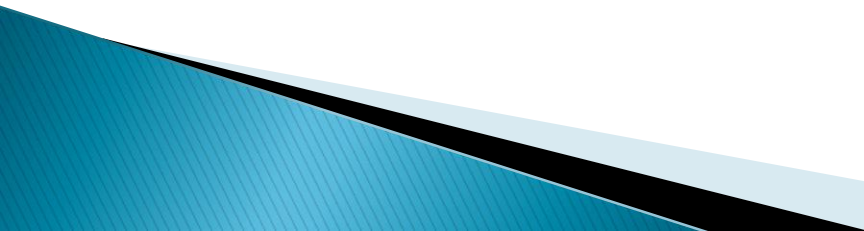
Benefit/Cost Analysis

Costs/Clinic	
Salary + training + admin	\$92,077
Benefits/Clinic	
Productivity (7 MD's)	\$99,986
Hospitalizations ↓ *	\$0
Total (benefits – cost)	+\$7,909

* Society would save, per clinic, \$79,092 in reduced hospitalizations.

Note: overhead costs, IS costs are assumed to be constant.
Equipment costs included.

CM+ Results

- ▶ Internal decision at Intermountain to continue the program
 - ▶ Patient Worksheet summary already part of EHR
 - ▶ Adapted Care Management Tracking database into EHR
 - Documentation forms
 - Patient–Care Manager matching
 - Reports
 - Data warehouse queries
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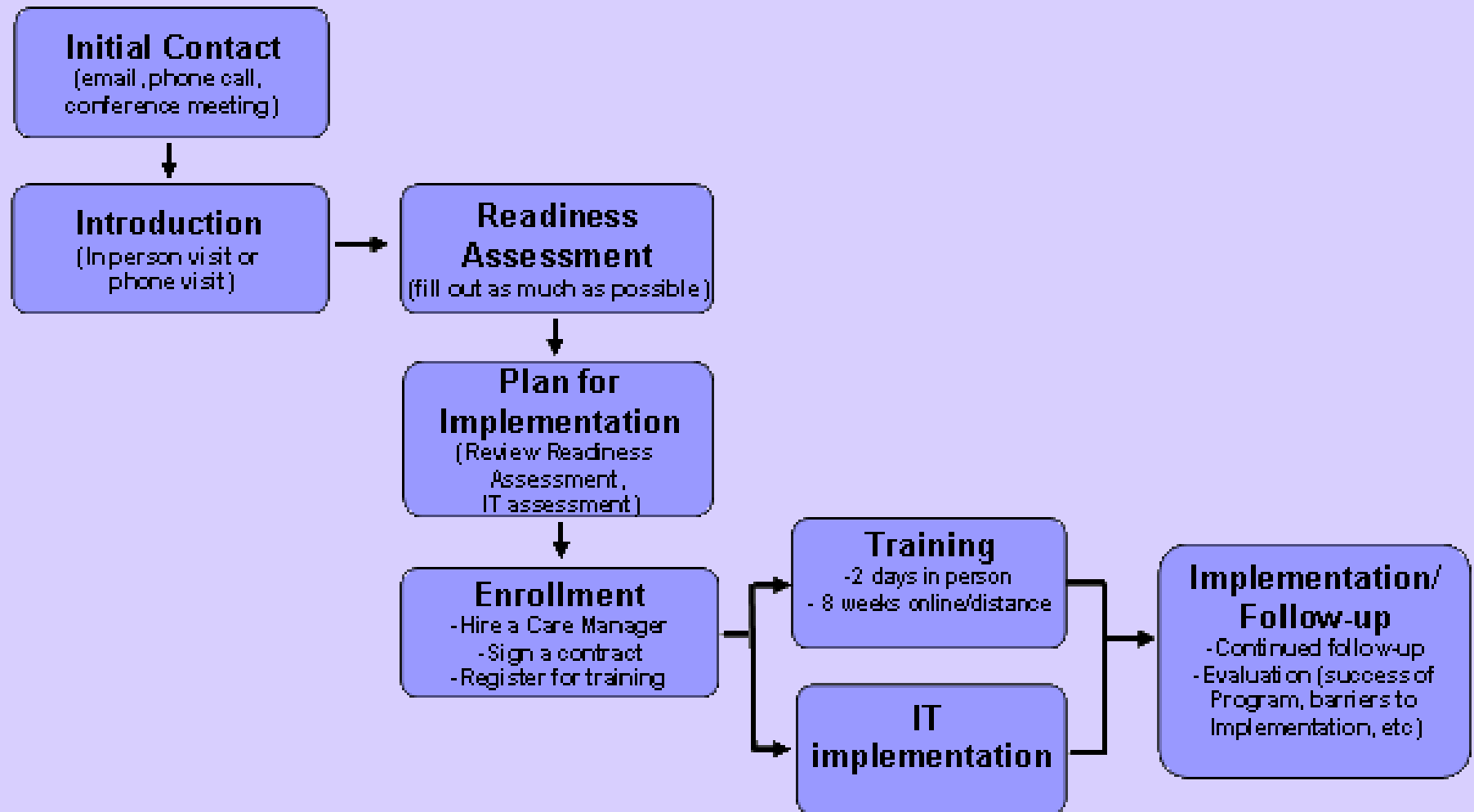
Disseminating CM+: Publications

- ▶ Dorr DA, Wilcox AB, Bruncker CP, Burdon RE, Donnelly SM. The effect of technology-supported, multidisease care management on the mortality and hospitalization of seniors. *J Am Geriatr Soc*. 2008 Dec;56(12):2195-202.
- ▶ Wilcox AB, Dorr DA, Burns L, Jones S, Poll J, Bunker C. Physician perspectives of nurse care management located in primary care clinics. *Care Manag J*. 2007;8(2):58-63.
- ▶ Dorr DA, Wilcox A, Jones S, Burns L, Donnelly SM, Bruncker CP. Care management dosage. *J Gen Intern Med*. 2007 Jun;22(6):736-41. Epub 2007 Apr 6.
- ▶ Dorr DA, Tran H, Gorman P, Wilcox AB. Information needs of nurse care managers. *AMIA Annu Symp Proc*. 2006:913.
- ▶ Dorr DA, Wilcox A, McConnell KJ, Burns L, Bruncker CP. Productivity enhancement for primary care providers using multicondition care management. *Am J Manag Care*. 2007 Jan;13(1):22-8.
- ▶ Dorr DA, Jones SS, Wilcox A. A framework for information system usage in collaborative care. *J Biomed Inform*. 2007 Jun;40(3):282-7.
- ▶ Wilcox AB, Jones SS, Dorr DA, Cannon W, Burns L, Radican K, Christensen K, Bruncker C, Larsen A, Narus SP, Thornton SN, Clayton PD. Use and impact of a computer-generated patient summary worksheet for primary care. *AMIA Annu Symp Proc*. 2005:824-8.
- ▶ Dorr DA, Jones SS, Burns L, Donnelly SM, Bruncker CP, Wilcox A, Clayton PD. Use of health-related, quality-of-life metrics to predict mortality and hospitalizations in community-dwelling seniors. *J Am Geriatr Soc*. 2006 Apr;54(4):667-73.
- ▶ Dorr DA, Wilcox A, Burns L, Bruncker CP, Narus SP, Clayton PD. Implementing a multidisease chronic care model in primary care using people and technology. *Dis Manag*. 2006 Feb;9(1):1-15.
- ▶ Dorr DA, Wilcox A, Donnelly SM, Burns L, Clayton PD. Impact of generalist care managers on patients with diabetes. *Health Serv Res*. 2005 Oct;40(5 Pt 1):1400-21.

Disseminating CM+: Grants

- ▶ K-22 Grant
 - Enhancing Guidelines with Collaborative Care Agents
- ▶ Dissemination grant from John A. Hartford Foundation
 - Dissemination of Care Management Plus: Information Technology Tools for the Care of Seniors
- ▶ Task order from AHRQ
 - Assessing the Clinical Impact and Business Case for Nurse-based Care Management
- ▶ Donald W. Reynolds Foundation grant
 - Comprehensive Program to Strengthen Physicians Training in Geriatrics
- ▶ AHRQ R-18
 - Enhancing Complex Care through an Integrated Care Coordination Information System
 - Evaluating the Implementation of an Information Technology-Enabled Care Management Program

Disseminating CM+: Implementation



Disseminating CM+: Training

- ▶ 2 days intensive training
 - Jump-start to the core competencies
 - Technical training for the Care Manager Tracking software
- ▶ 8 weeks online instruction
 - Learning modules

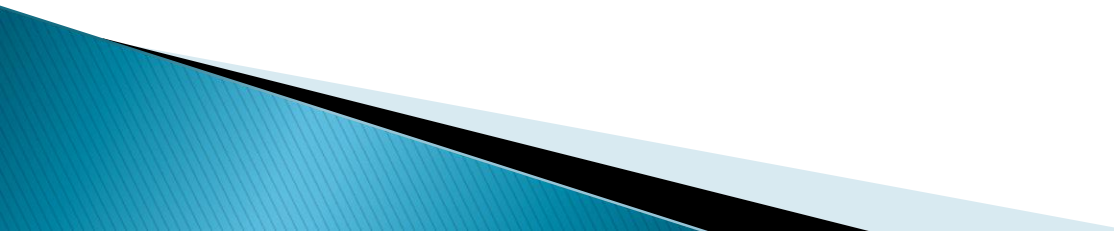
Disseminating CM+: Tools

- ▶ Care Manager Tracking software
 - Free version of CMT used at Intermountain
- ▶ Patient Worksheet
 - Description of content that could be incorporated into an EHR
- ▶ Senior Care Resources
 - Content-specific information on
 - Diseases
 - Benefits
 - General health
 - Local resources

Disseminating CM+: Status

- ▶ 78 Clinics/teams trained
- ▶ 98 Care Managers
- ▶ Participation in Medicare Coordinated Care PBRN
- ▶ Advised various funders and payers on integrated care management and the medical home
 - Grantmakers in Health
 - CMS
 - CareOregon
 - Regence BlueCross BlueShield of Oregon
 - Colorado Access
 - Qualis Corporation (QIO of Washington)
 - Oregon Medicaid

Lessons learned: Translational Research

- ▶ It takes effort to transform health care
 - Research results do not always translate to transformation
 - ▶ Evaluation results are critical
 - Would not have survived locally without evaluation
 - Had to include financial impact as well
 - ▶ We found success by attaching to broader trends
 - Primary Care Medical Home
- 

Lessons learned: Informatics

- ▶ Start with simple tools first
 - Technology less important than the function
- ▶ Find ways around full integration with EHRs where necessary
 - Which comes first, the transformation or the vendor adoption?
- ▶ There are benefits to mobile informaticists

