

Care Management Plus: reorganizing people and technology in primary care settings for chronic illness care

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Supported by

The John A. Hartford Foundation & NLM

TRIPP

July 2006

<http://www.intermountainhealthcare.org/cmt/>

Background

At Intermountain Healthcare in Salt Lake City,

Mid 1990s: Care managers from hospitals to clinics

Late 1990s: **Protocols:** created and in place

Incentives based on performance
measures (Brent James, others)

2001-2003: **Created Care Management Plus,
combining elements of the systems and adding
training and technology**

2004-present: Studied effects of systems, and
working to continuously innovate and disseminate

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.

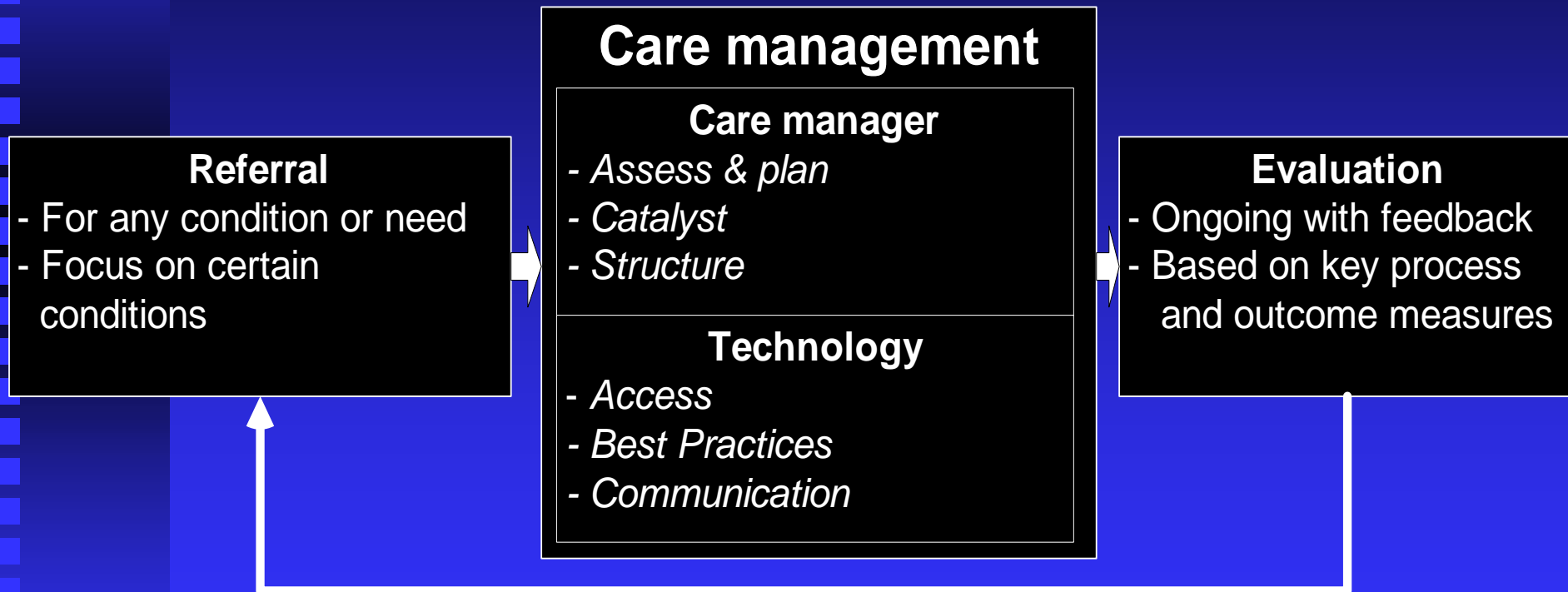
Ms. Viera's office visit

And Out in the hall:

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

How can Dr. Smith and the primary care ensure high quality, evidence-based care for Ms. Viera?

Care Management Plus



7 primary care clinics with 6-10 physicians and 7 embedded care managers

Case help: care manager and Ms. Viera

The care manager

- **assesses** – readiness to change, disease states, cognitive status, safety
- **prioritizes** – cognition / depression, social issues then disease states
- **co-creates** a protocol-based care plan
- **facilitates** that care plan
- **documents** success ...

The right **people** on the team with the right training is a core principle.

Patients are taught to self-manage and have a **guide** through the system.

Care managers receive special training in

- Education, motivation/coaching
- Disease specific protocols (**all staff included**)
- Care for seniors / Caregiver support
- Connection to community resources

Our care managers are currently all RNs; other models are possible.*

Technology helps the team plan and enact high quality care.

- Care management tracking database
 - ◆ Available free of charge (requires MS Access)
 - ◆ Training manuals
- Patient worksheet (summary sheet)
- Dosage expertise / specification

www.intermountainhealthcare.org/cmt/

Patient Information

ID Number: [] Last Name: TEST First Name: TEST DOB: 8/16/1977 * Age: 19 [] Race: Black/African A Sex: M

Phone: (800) 800-8000 Cell Phone: [] Email: [] PCP: Allen, Mitch PCP Phone: (800) 888-8888

Insurance: Mailhandlers Facility: ABC Clinic Diab Collaboration FPP: 2.Confused/Chaotic

Date of Referral: 3/30/2004 * Care Mgr: John Status: Active

Diag	Date	Diagnosis	Status
		CHF	Active
Edit	3/30/2004	Anxiety	Active
Edit	3/30/2004	Depression	Active

Sched Date	Sched Time	Encounter Type	Status
Edit	4/30/2005	Telephone Contact	Pending
Edit		Home Visit	Resolved
Edit	1/26/2005	Telephone Contact	Resolved
Edit	10/18/2004	Telephone Contact	Resolved

Patient Search

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

Search for Patients
 Show All Patients

MH Packet Date	Symp	Severity	Fctnal	Diff	Dysth.	Q9	Suicide State	Suicide Risk	[Mood 1 2 3]	MoodImp	MoodSx	AnxImp	AnxSx
Edit	1/26/2005	1	3	Somewhat	<input checked="" type="checkbox"/>	0		No Risk					
Edit	9/1/2004	0	4	Not	<input checked="" type="checkbox"/>	0		No Risk		16	45	14	52
				1. Thoughts Only				Low Risk					

Diab Assess Date

3/4/2005

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 8:30 AM	CM Office Visit					(801)	Wo
2/17/04 9:00 AM	Class					(801)	Smt
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

- List of daily tasks
- automatic
 - protocol-driven
 - flexible

Paper ! ?

Before 3/10

IHC. Also detail

do. wait pay est. sent

pm fees 810-33-003

5 people

pcp Assess Test

who if presc - do ink -

Client - do ink -

Home - head - gen -

Back 2-3 who - head -

Turn on 51 -

7-10 days - 3rd day

If from est. office

Over 4,700 patients were referred for a variety of conditions.

Demographics	All patients
Count	4,735
Age	56.3 ±19.6
% female	61.5%
Referral Reason	
Diabetes	42.6%
Depression	32.8%
Social Needs	13.1%
Cardiovascular	5%
Multiple conditions	20.7%

75%
actually
had
2+
conditions

In all, 4,735 patients (1,582 seniors) were seen in 2004-05, receiving 22,899 services (9,434 for seniors).

Service category	All patients	Seniors
ALL	22,899	9,434
Following evidence-based protocols	12,955 (56.6%)	4,421 (46.9%)
General education	6,808 (29.7%)	2,252 (23.9%)
Communication	6,789 (29.7%)	4,199 (44.5%)
Motivating patients	6,243 (27.3%)	2,247 (23.8%)
Barriers to care	8,221 (35.9%)	3,608 (38.2%)

Impact of Care Management

Effectiveness and timeliness

■ Diabetes

- ◆ Dorr et al. 2005. Impact of Generalist Care Managers on Patients with Diabetes. *Health Services Research*, 40(5): 1400 – 21
- ◆ Deaths relative reduction of 12% (3% absolute), Hospitalizations reduced by 12-25%

Efficiency and satisfaction

- Physician and patient experience
- Productivity – helps pay for program

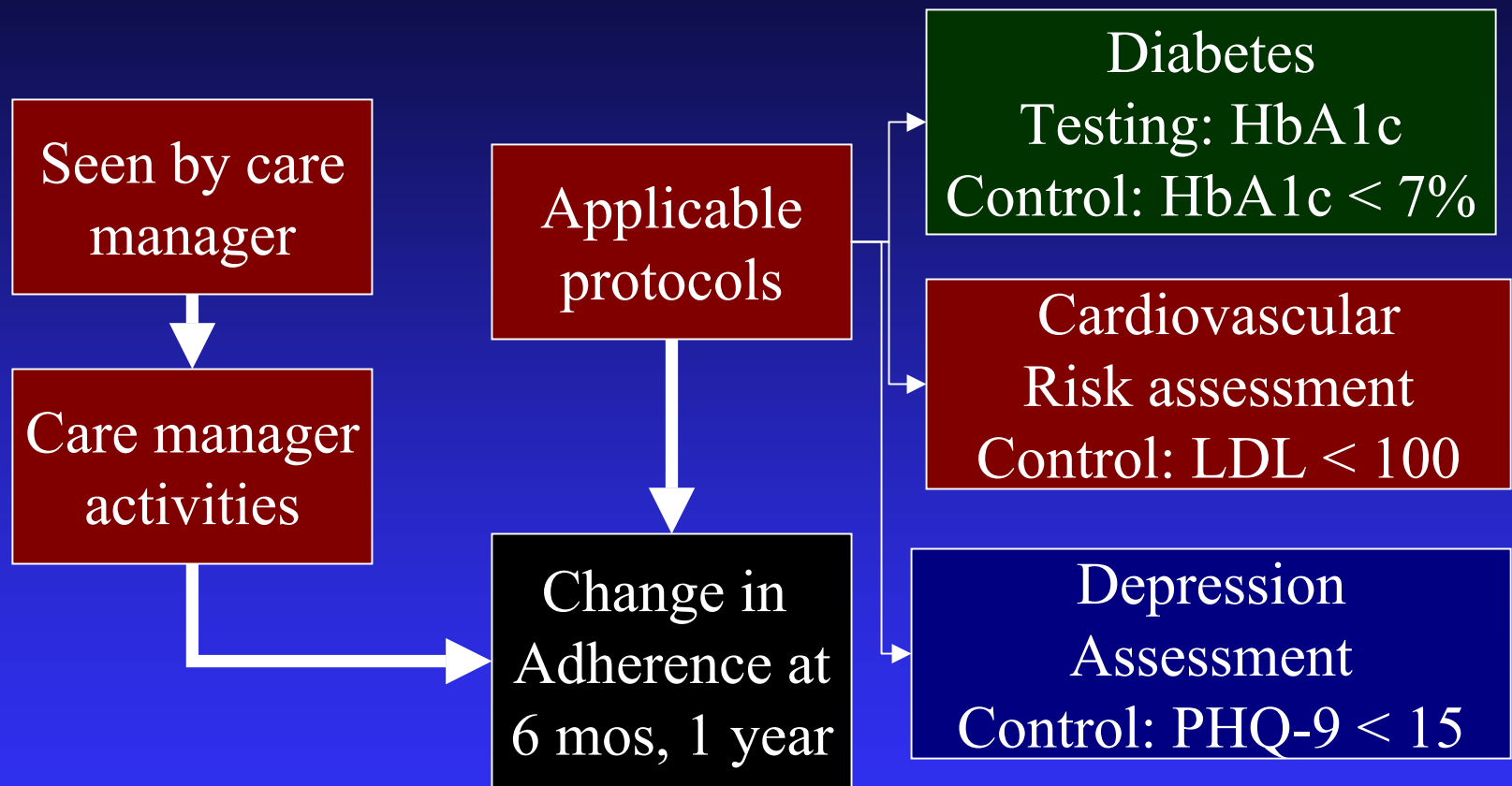
More questions were being asked...

Do all the other things that care managers do in this model matter, or are they just ‘protocol enforcers’?

Which ones matter, and how can we encourage these?

What barriers exist to following protocols, and can care managers address these?

Study design for protocols



Statistical: Multivariate regression adjusted for age, gender, previous adherence, comorbidity (reweighted Charlson);
are there correlations between care manager activities and adherence?

Diabetes effect

For Adherence to diabetes

Higher dose:

40% relative increase

Increased face time

50% increase

Longer duration

40% increase

Increased # of services

40% increase

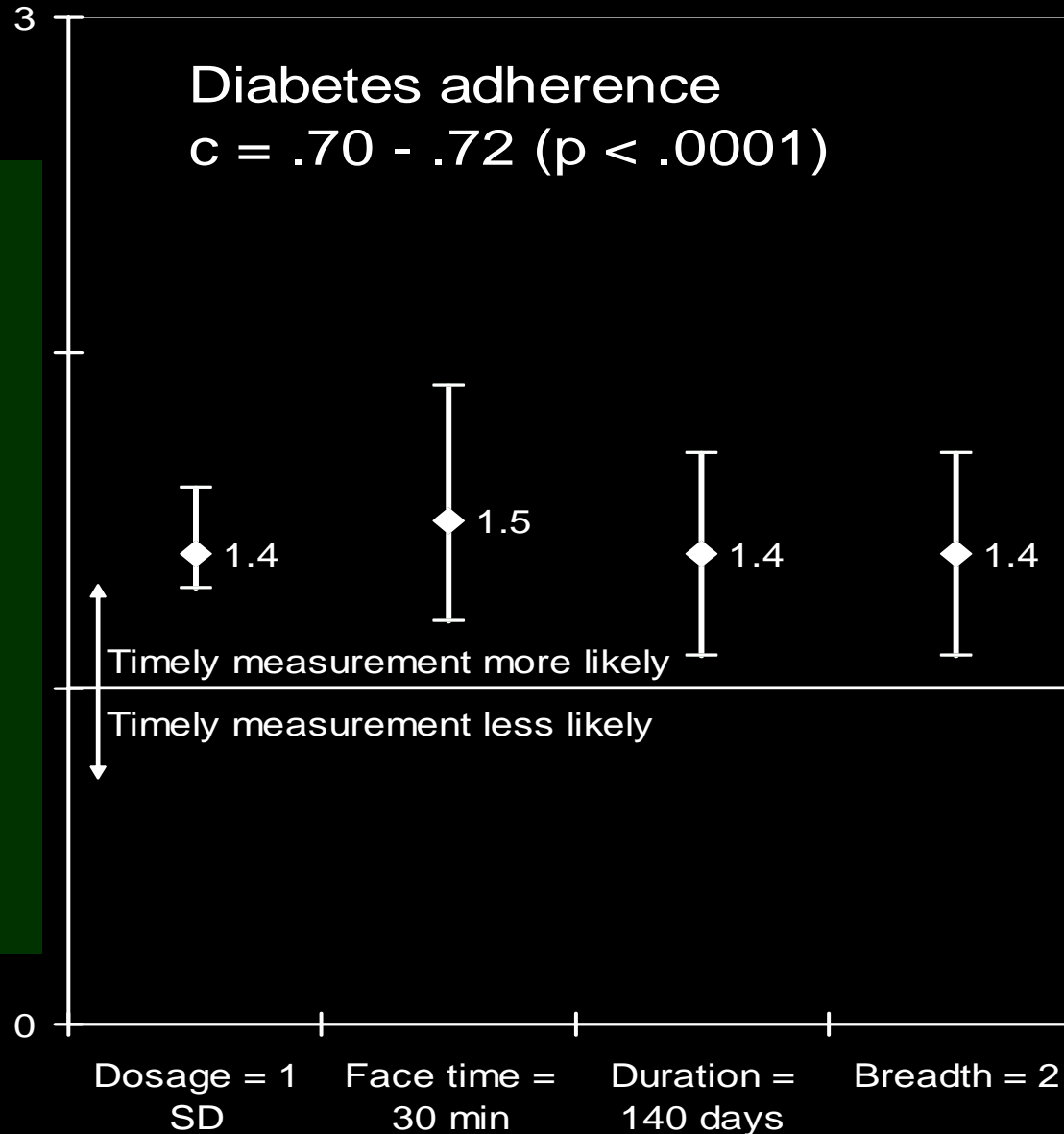
For Control of Diabetes

Increased # of services

20% increase

Increased face time

24% increase



Other disease effects

For Adherence to cardiovascular protocols

Increased face time

13% increase

Increased # of service types

13% increase

Protocols

14% increase

Motivation

30% increase

Education

35% increase

For Control of lipids

Increased face time

11% increase

For Adherence to depression

Increased duration of follow-up

21% increase

Increased phone calls

16% increase

Protocols

14% increase

Education

15% increase

Multiple diseases: depression and diabetes

For Adherence to diabetes and depression

Higher dose (more intensive services):

21% relative increase

Increased face time and phone calls:

20% increase

Longer duration of follow-up

24% increase

Increased Number of services (breadth)

18% increase

Typology of barriers to care

Demographics

- Age
- Race/ethnicity
- Literacy
- Income
- Rural vs. urban
- Education

Socioeconomic Support

- Insurance
- Meds coverage
- Poverty
- Homeless
- Transportation

Patient Involvement

- Likelihood of seeking care
- Visit adherence
- Med adherence
- Follow-up

Comorbidities

- Substance abuse
- Mental health
- Dementia
- Functional status
- Other diseases
- New/unstable
- Severity

Other treatments

- Medications
- Drug interactions
- Cost

Typology of barriers in sample

Category	Treated
Demographics	48.0%
Socioeconomic Support	72.0%
Patient Involvement	8.0%
Substance Abuse	2.2%
Mental Health	25.2%
Dementia	1.3%
Functional status	16.0%
Burden of disease	10.4%
Comorbidity total	55.1%
Ameliorable	68.2%

Should we create special guidelines for patients with complex illness?

- More likely to have barriers to care *when referred*.
- More likely to need more intensive care management.
 - ◆ In an already intense program.

Summary

- Complex regimens worked the best –
 - ◆ Certain key components were important
 - ◆ But higher dosage, face-to-face time, and a wide variety of services were associated with success
- Protocol development combined with flexible operations worked well
- But what about the costs?

Benefit/Cost Analysis

Costs/Clinic	
Salary + training + admin	\$90,000
Benefits/Clinic	
Productivity (7 MD's)	\$88,200
Hospitalizations ↓ *	\$0
Total (benefits – cost)	-\$1,800

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

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

Thank you! & Questions?

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Additional Slides

Curriculum Content

Topical Area	Delivery Strategy	Methods
Orientation, Role, Technology training	~10 hours in person (divided)	Power point presentation; Case examples, role playing
Managing Chronic Illnesses Mental Health Issues Senior Patient Management Patient Coaching	On-Line (~10 hours, divided) Case studies	Asynchronous and Synchronous faculty discussion. Posted power-point slides.
Community Resource Acquisition Final Case Study (See evaluation)	In-Person Seminar	Internet search activities Case Study Presentations

What are the key elements?

- Framework to maintain from the original model
 - ◆ Care managers role in care team
 - ◆ Tools, knowledge and links to resources
 - ◆ HIT support/functionality
 - ◆ Rigorous evaluation
- What can be adapted?
 - ◆ Small/rural clinics? RN vs NP? Varied EHRs

Challenges and Barriers

- Nurse shortage
- Budget restraints
- Office practice redesign: collaborative
- Clinic size needed to sustain
 - ◆ What aspects can be used by smaller clinics
- Other feedback – what's needed for a Phase 2?