

# Care Management Plus:

reorganizing people and technology in primary care settings for chronic illness care

*Can we improve care for patients with multiple chronic illnesses?*

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

# Last year, Dr. Gerard Anderson said

- “Disease management and care coordination programs lack a factual basis for treating people with multiple chronic conditions”

(G. Anderson, AcademyHealth Annual Research Meeting 2005, Boston, MA, slide 2)

# We say,

- *Some* programs now have a factual basis for treating patients with multiple chronic conditions.
- Like the one discussed here (Care Management Plus)
- *But only for certain patient populations (diabetes with other conditions).*

# 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 team handle these issues?

And still provide high quality care?

# We are not doing well...

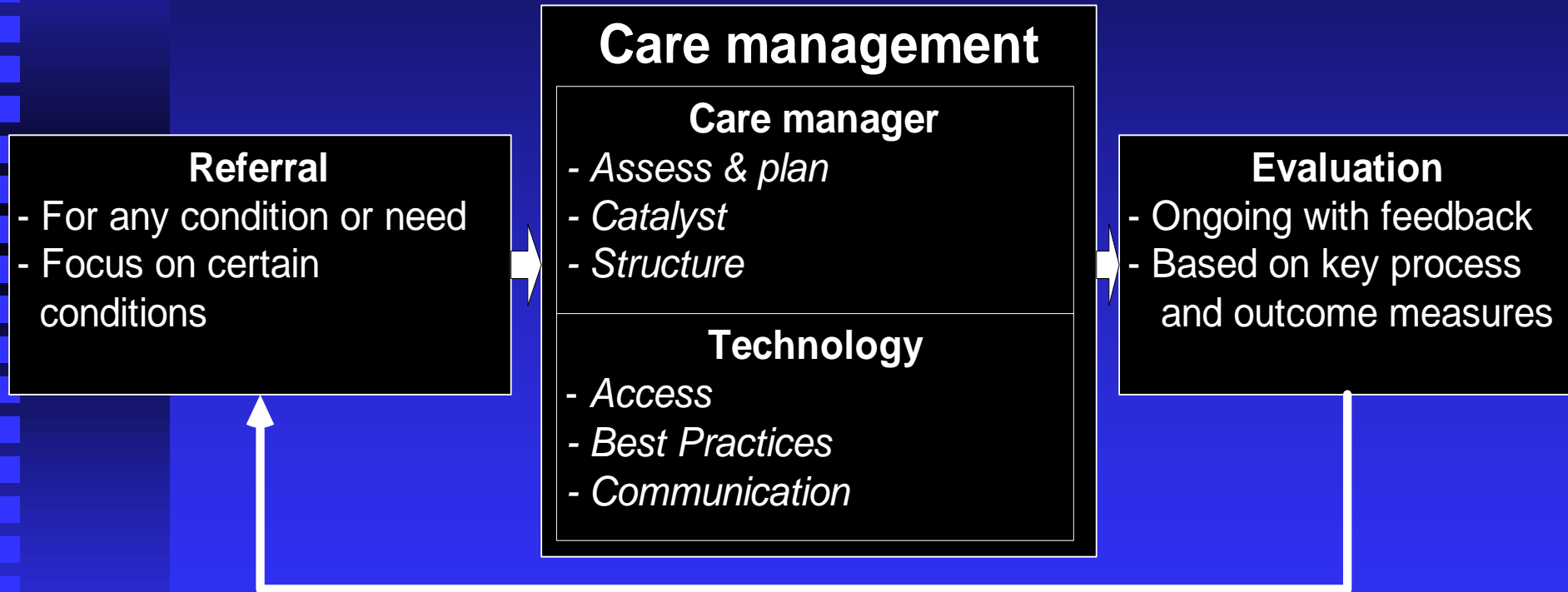
- 56% success rate with chronic illness quality measures, declines as # of chronic illness increases [McGlynn, others]
- Improvement in care for the chronically ill could save billions of dollars (theoretically) [Hillestad, Wennberg]

## Partial solutions exist

- Care, case and disease management models address various aspects of the issue
  - ◆ Usually completely general or specific (each disease independently)
  - ◆ More frequent with capitated or single payer

# Care Management Plus is a comprehensive solution.

*In 7 13 primary care clinics at Intermountain Healthcare*



*Larger infrastructure: Electronic Health Record, quality focus*

*Primary Care Clinical Programs: sets standards, teams adhere*

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 with protocols and population support
  - ◆ Available free of charge (requires MS Access)
  - ◆ Training manuals
- Patient worksheet (summary sheet)
- Dosage expertise / specification

[www.intermountainhealthcare.org/cmt/](http://www.intermountainhealthcare.org/cmt/)

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

<b>Service category</b>	<b>All patients</b>	<b>Seniors</b>
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%)
Social issues / barriers	8,221 (35.9%)	3,608 (38.2%)

# Impact of Care Management

Effectiveness and timeliness

- **Diabetes + Comorbidities**

- ◆ Dorr et al. 2005. Impact of Generalist Care Managers on Patients with Diabetes. *Health Services Research*, 40(5): 1400 – 21

- **Death and hospitalizations**

Efficiency and satisfaction

- Physician and patient experience
- Productivity

# Study design – death and hospitalization

- Retrospective matched cohort study of Medicare enrollees
- Outcomes:
  - ◆ Death
  - ◆ Hospital admission
  - ◆ Admission for Preventive Quality Indicators condition
- Multivariate logistic and negative binomial regression
- 1,144 CM patients matched to 2,288 control patients (1:2);
  - ◆ Subanalysis: complex diabetes (comorbid, advanced illness) 551 CM; 1102 control

# Demographics

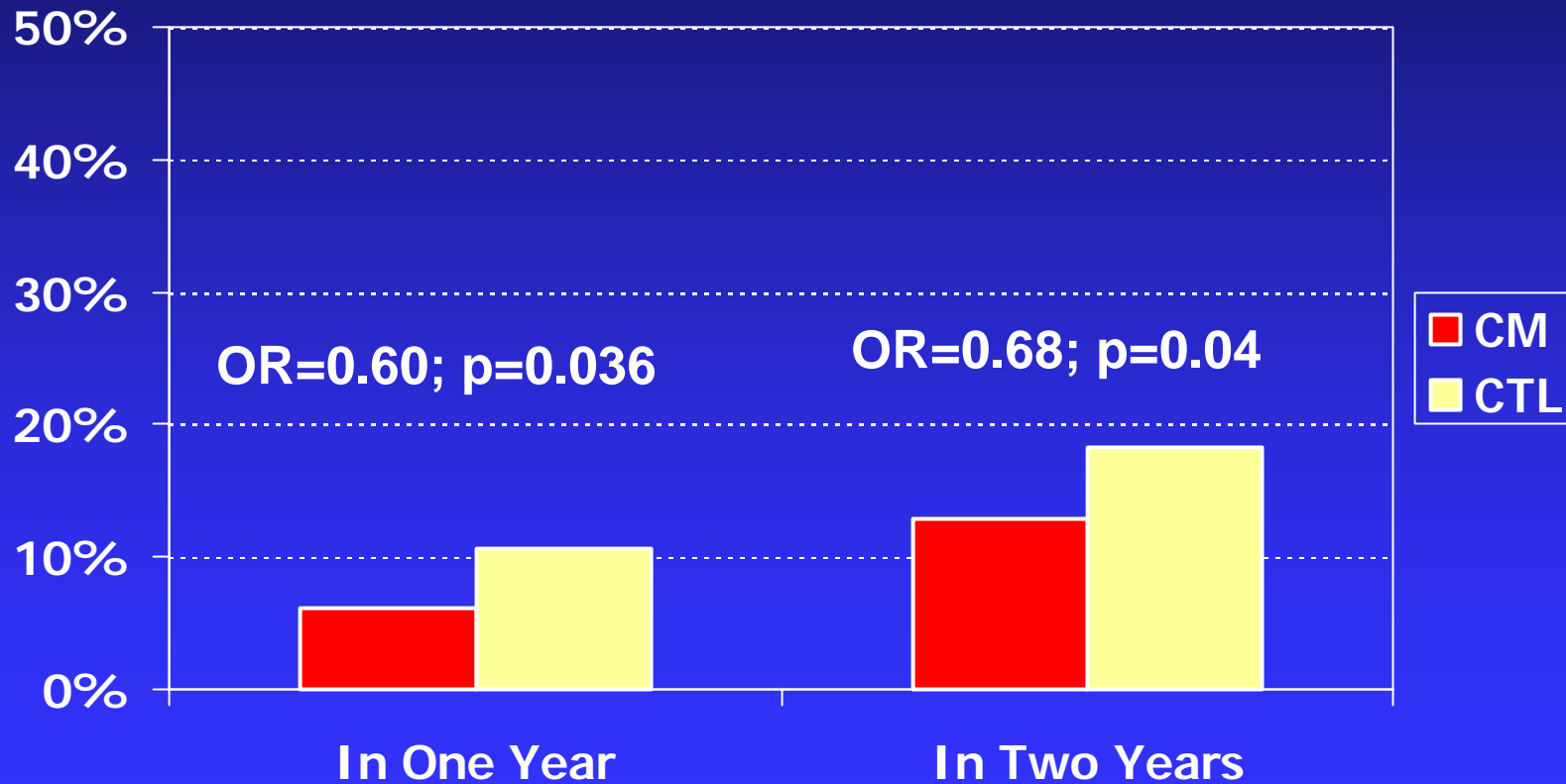
Outcome	CM	Control
Age mean (SD)	76.2 (7.2)	76.2 (7.1)
% Female	64.6%	64.6%
% Caucasian	94%	96%
Hospital admit last year	22.5%	22.5%
Chronic illnesses		
2 or more	75.6%	73.4%
3 or more	48.5%	46.6%
... including diabetes		
2 or more	92.1%	91.4%
3 or more	65.5%	62.4%

# All patients: outcomes

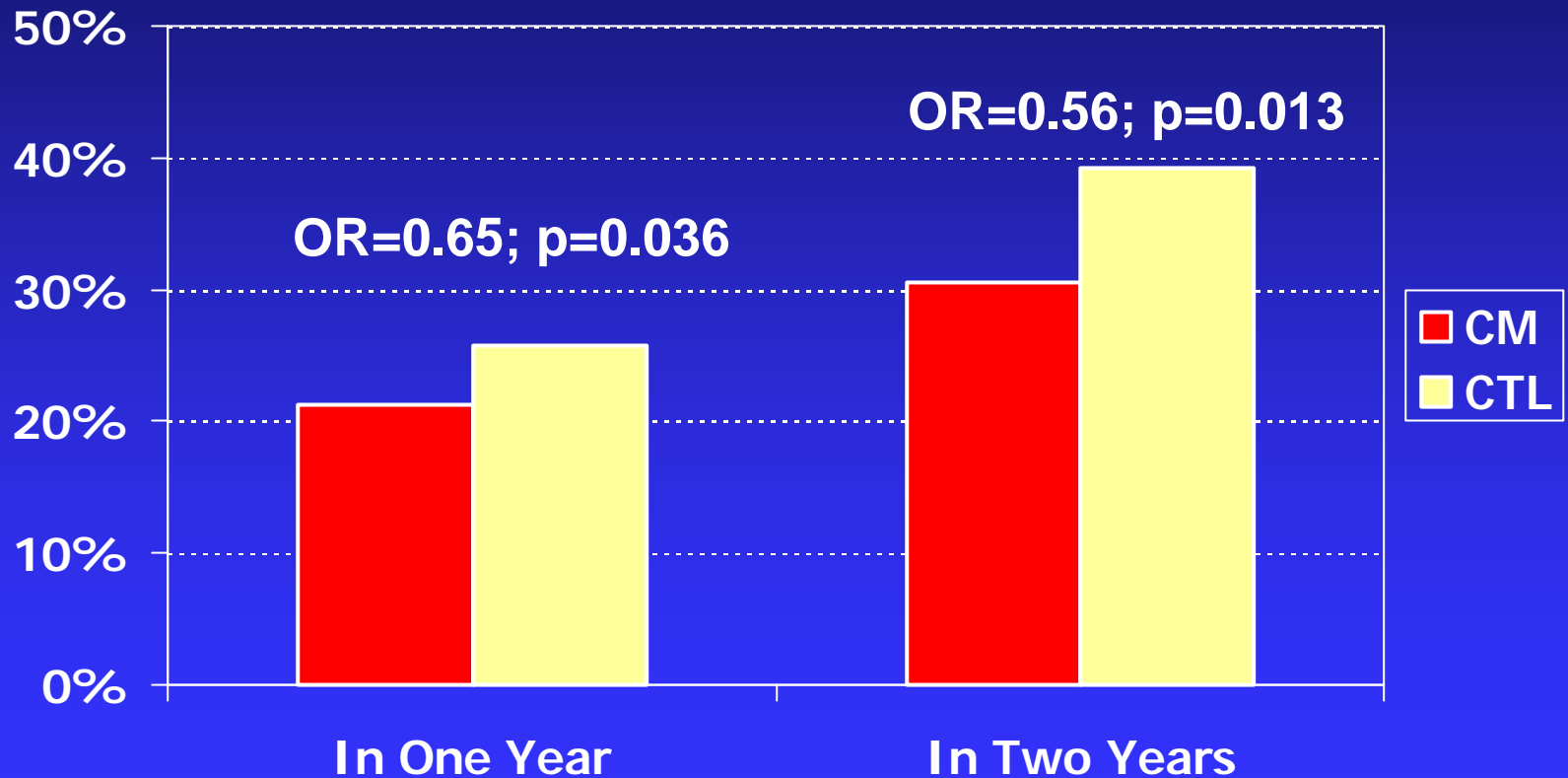
Outcome	CM	Control
Death		
total at 1 year	6.5%*	9.2%
total at 2 years	13.1%*	16.6%
Hospitalization		
total at 1 year	22.2%	23.1%
total at 2 years	31.8%	34.7%
PQI Hospitalization		
total at 1 year	4.7%	5.3%
total at 2 years	8.9%	8.7%

\* p<.05 versus controls

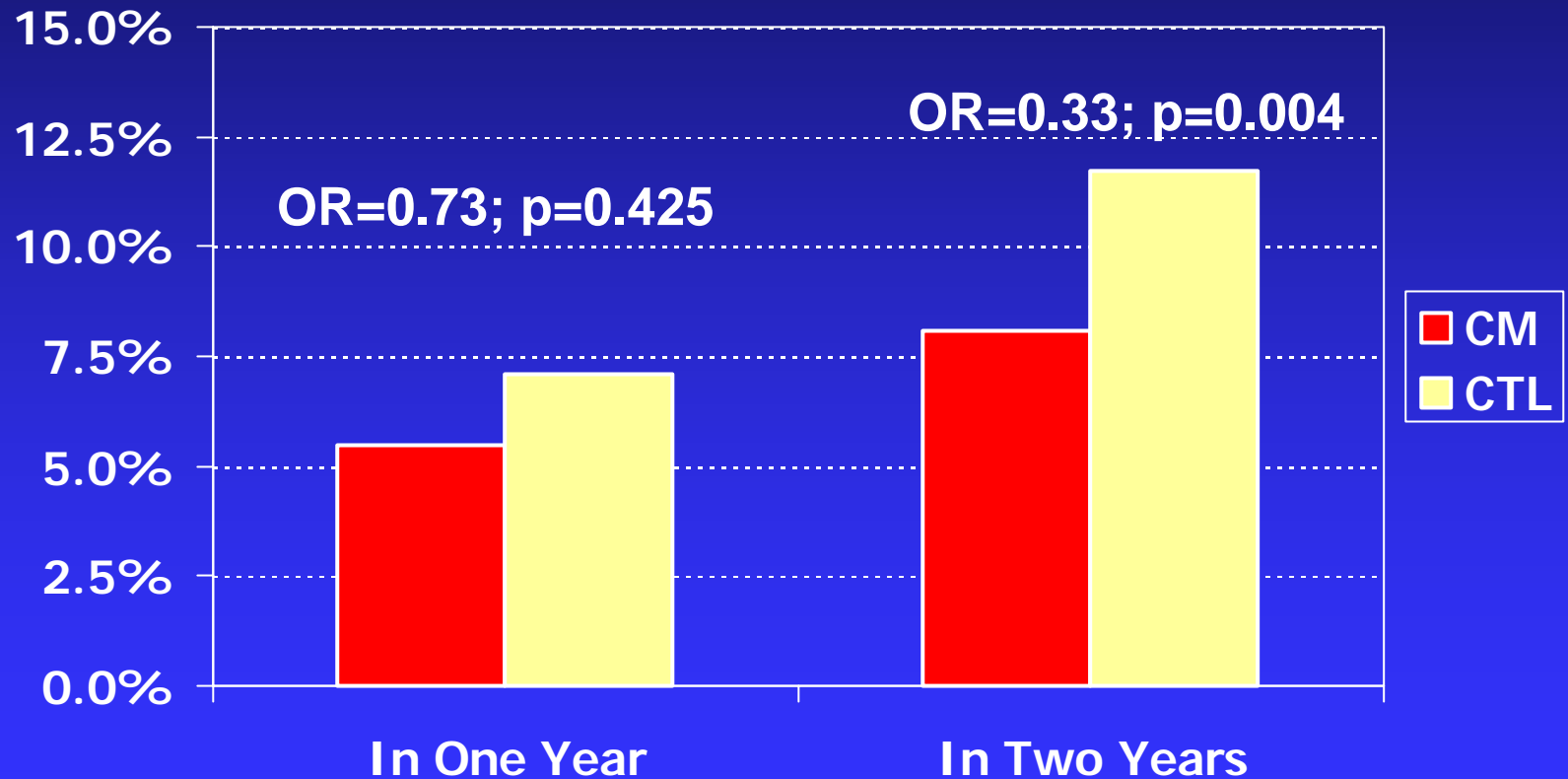
# Deaths: diabetes +



# Admissions: diabetes +



# PQI Admissions: diabetes +



# Opportunities and challenges

- Matching very difficult with selection bias
  - ◆ Patients with diabetes better matched
  - ◆ Others frequently referred in 'crisis': difficult both to match and change trajectory
- What helps clinics succeed? Size, redesign
- **Policy bottom line:** not all populations may respond equally; must learn
  - ◆ to focus on key populations (reduce morbidity, mortality, and cost); and
  - ◆ to understand other needs (aids productivity and satisfaction).

# Phase 2: Dissemination

- Disseminate the program to
  - ◆ Primary care practices (6-10 physicians optimal)
  - ◆ Health systems
- Curriculum, Technology available  
[www.intermountainhealthcare.org/cmt/](http://www.intermountainhealthcare.org/cmt/)
- Focus program to achieve greatest benefit
  - ◆ Referral

# Thank you! & Questions?

- David Dorr

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- Laurie Burns – Project Manager

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- Thanks to Adam Wilcox, Cherie Brunner,  
Paul Clayton

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

# Patient summary sheet= Patient Worksheet

11 July 2003		Patient Worksheet			v1.0.21	
PATIENT NAME <b>TEST, A A</b>		SEX <b>F</b>	DOB <b>09/01/1964</b>	MMI# <b>545073664</b>	MRN# <b>545073664</b>	
<b>Problems</b>						
Hyperthyroidism status post appendectomy Diabetes mellitus type 2, insulin treated		Hypertension status post appendectomy Chronic kidney disease, likely				
<b>Active Medications</b>						
1. - Digitoxin, 0.1mg, Tablet; 3 TABLET 2. - Entex LA (Guafenesin/PPA HCl), 400-75mg, Tablet; 1 TABLET						
<b>Preventive Care</b>						
<b>CV Risk</b>		<b>Pap smear</b>				
5%*(1.4x)**		No Data				
<b>Clinical Laboratory Data</b>						
<b>HgbA1c (&lt;=7.0)</b>		<b>UA Protein</b>		<b>uAlb/Cr (&lt;30)</b>		<b>24 Urine Albumin (&lt;30)</b>
No Data		06/01/2001 - Negative 12/18/2000 - Positive 11/06/2000 - Negative		No Data		No Data
<b>Serum Cr</b>		<b>Serum K</b>		<b>Lipid Profile</b>		<b>LDL (&lt;100)</b>
04/26/2003 1.1		04/26/2003 4.2		04/26/2003 107		93
10/25/2002 2.0		02/05/2003 3.9		10/25/2002 54		85
02/27/2002 1.6		10/25/2002 4.5		02/27/2002 109		151
10/03/2001 2.3		01/29/2002 6.1		02/06/2003 168		189
<b>TC/HDL Ratio</b>		<b>HCT</b>		<b>hsCRP</b>		<b>Homocysteine</b>
04/26/2003 3.5		02/05/2003 35.9 %		04/06/2003 0.6 mg/l		04/06/2003 6 mcmol/l
04/06/2003 5.2		10/02/2002 37.7 %		02/24/2003 1.2 mg/l		
02/24/2003 5.4		08/23/2002 45.0 %				
02/06/2003 7.2		07/19/2002 29.9 %				
<b>Clinic Data</b>						
<b>Date</b>		<b>Weight</b>		<b>BMI (&lt;25)</b>		<b>Weight Class</b>
No Data		-		-		-
<b>Last foot exam:</b>		No Data		<b>Blood Pressure (&lt;130/80)</b>		<b>Heart Rate</b>
				01/25/2001 145/74 mmHg		01/25/2001 86
<b>Last dilated retinal exam:</b>		No Data				
<b>Reminders</b>						
<b>Preventive</b>						
* Predicted % Risk over 10 years of a cardiovascular event (MI, revascularization, CVA, death). ** Relative Risk over 10 years of a cardiovascular event compared to lowest risk category. Pap and pelvic suggested every 3 years after three normal yearly Pap tests. For Patients with known Cardiovascular Disease, target LDL < 100. Blood Pressure measurement is suggested for adults every two years. Suggested follow-up for missing data: - Pap Smear Pneumovax suggested for all patients age 65 and older. In all patients to change 23 to 23/13 with 13 year old disease.						
<b>Diabetes</b>						
Suggest repeat Urine Albumin Test monthly for patients in this sheet. Last ALT = 28 on 4/26/2003 & AST = 66 on 10/26/2002 Suggested follow-up for missing data: - HgbA1c - Dilated Retinal Exam - Foot Exam - Weight						
<b>Hypertension</b>						
ACE Inhibitors (ACEI) or if ACEI intolerant, Angiotensin II Receptor Blockers (ARBs) or the combination of ACEI or ARBS and Diuretics are the recommended initial drug therapy for patients who are diagnosed with hypertension in conjunction with Diabetes.						

Chronic conditions

Medications

Preventive care summary

Pertinent labs

Pertinent exams

Passive reminders

Organized by illness

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)	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

Before 3/10

5 people

pcp Approach Test

who if process - do

Home - do important

Back - head - gen news

2-3 who - hospital

Turn on 5' 3" 1/2

7:10 deep - 3:00

IAC. Also detail

do. want pay for

pm from 8:10-3:30

If from cat officer

# Managing Care of Complex Populations= Encounter Tickler

# 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

**Patient Search**

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

Search for Patients  
 Show All Patients

Diag. Date	Diagnosis	Status
Edit 2/28/2005	HF	Active
[ ]	[ ]	Active
Edit 3/30/2004	Depression	Active

Sched Date	Sched Time	Encounter Type	Status
Edit 4/30/2005	[ ]	Telephone Contact	Pending
Edit 1/30/2005	[ ]	Home	[ ]
Edit 1/26/2005	[ ]	Telephone Contact	Resolved
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
Edit 1/26/2005	1	3	Somewhat	<input checked="" type="checkbox"/>	0	[ ]	No Risk	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	No Risk	[ ]	16	45	14	52	[ ]
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	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

# Curriculum Content

<b>Topical Area</b>	<b>Delivery Strategy</b>	<b>Methods</b>
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