

# A System of Care for Chronic Conditions

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- **Ms. C is a 68yo woman with cough and shortness of breath and risk factors for Type II diabetes. She calls her doctor who cannot see her until the following week.**
- **Two days later she is hospitalized with shortness of breath. She is dxed with “CHF”, discharged on captopril, “no added salt diet” with encouragement to see her MD in three weeks**
- **When she sees her MD, he does not have information about the hospitalization**
- **PE reveals rales, S3 gallop, and edema**
- **Ms. C is told she has “a little heart failure”, encouraged not to add salt, and Captopril is increased**
- **She is told to call back if she is no better**
- **Two weeks later Ms. C calls 911 because of severe breathlessness and is admitted.**
- **Fuller history in the hospital reveals that she has been taking the Captopril prn because it seems “strong”, and she has never added salt to her diet, so her diet hasn’t changed.**
- **Further tests reveal elevated blood glucose. She is warned of impending diabetes.**
- **She is discharged feeling ill and frightened about the future.**



# Three Biggest Worries About Having A Chronic Illness (Age 50 +)

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1. Losing Independence
2. Being a Burden to Family or Friends
3. Not being able to afford medical care or prescriptions

# Number of Chronic Conditions per Medicare Beneficiary

<u>Number of Conditions</u>	<u>Percent of Beneficiaries</u>	<u>Percent of Expenditures</u>
0	18	1
1	19	4
2	21	11
3	18	18
4	12	21
5	7	18
6	3	13
7+	2	14

63% (Beneficiaries with 4 or more conditions)  
95% (Expenditures for 4 or more conditions)

# The Increasing Burden of Chronic Illness

## For Example: Diabetic Needs

Additional Diagnoses*	45%
Functional Limits**	50%
> 2 Symptoms***	35%
Not Good Health Habits	30%

\*Arthritis (34%), obesity (28%), hypertension (23%), cardiovascular (20%), lung 17%)

\*\* Physical (31%), pain (28%), emotional (16%), daily activities (16%)

\*\*\* Eating/weight (39%), joint pain (32%), sleep (25%), dizzy/fatigue(23%), foot (21%), backache (20%)

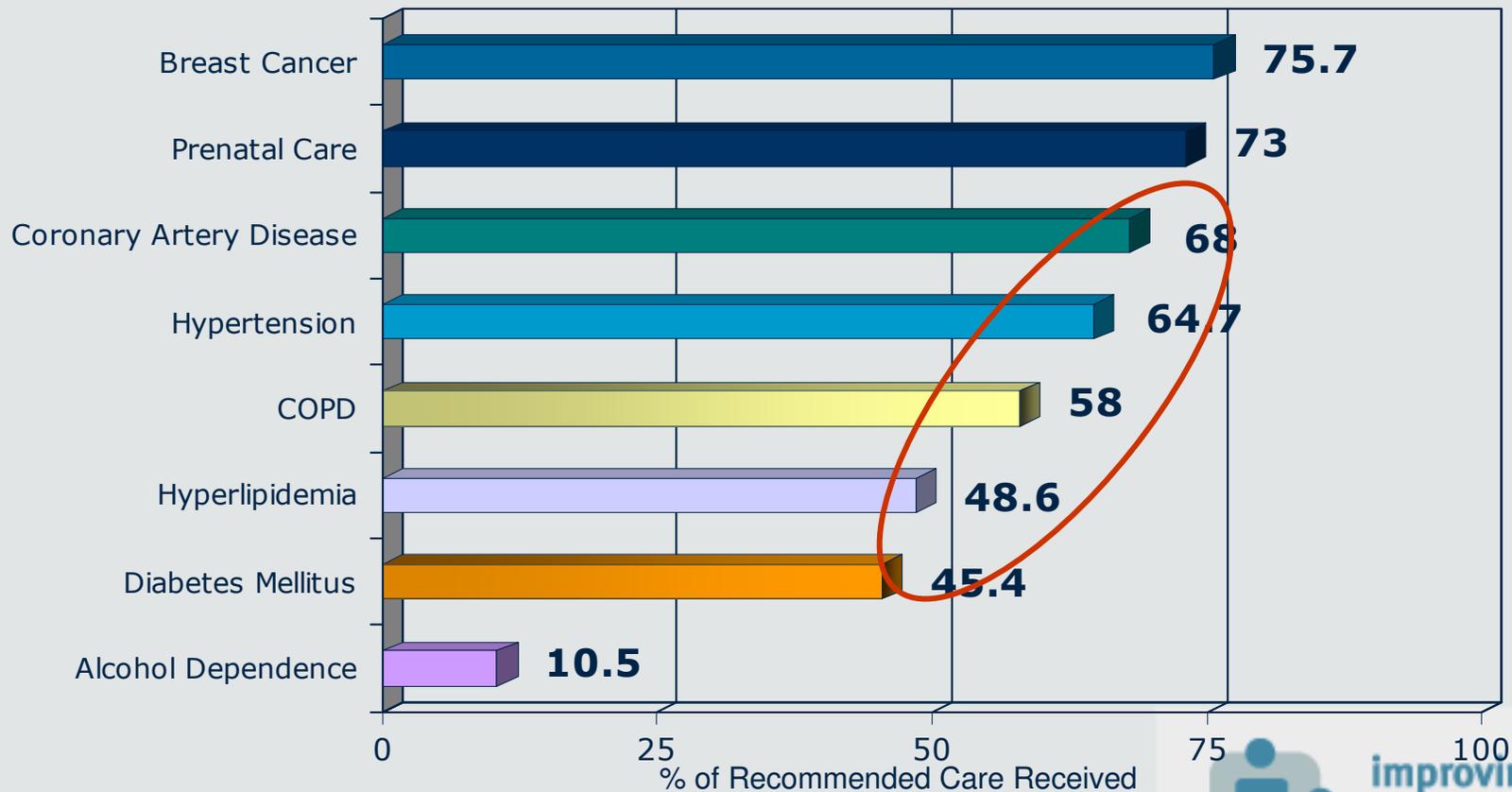


# Differences between acute and chronic conditions (Holman et al, 2000)

	<b>Acute disease</b>	<b>Chronic Illness</b>
<b>Onset</b>	Abrupt	Generally gradual and often insidious
<b>Duration</b>	Limited	Lengthy and indefinite
<b>Cause</b>	Usually single	Usually multiple and changes over time
<b>Diagnosis &amp; prognosis</b>	Usually accurate	Often uncertain
<b>Techno. Intervention</b>	Usually effective	Often indecisive; adverse effects common
<b>Outcome</b>	Cure possible	No cure
<b>Uncertainty</b>	Minimal	Pervasive
<b>Knowledge</b>	Prof.'s - knowledgeable Patients - inexperienced	Prof.'s & patients have complementary knowledge & exp.'s

# Figure 2: Care Gap for Chronic Conditions

Adherence to recommended care is low for chronic conditions



Source: McGlynn et al. NEJM 2003



## Figure 3: The toll on patients is high: US Data

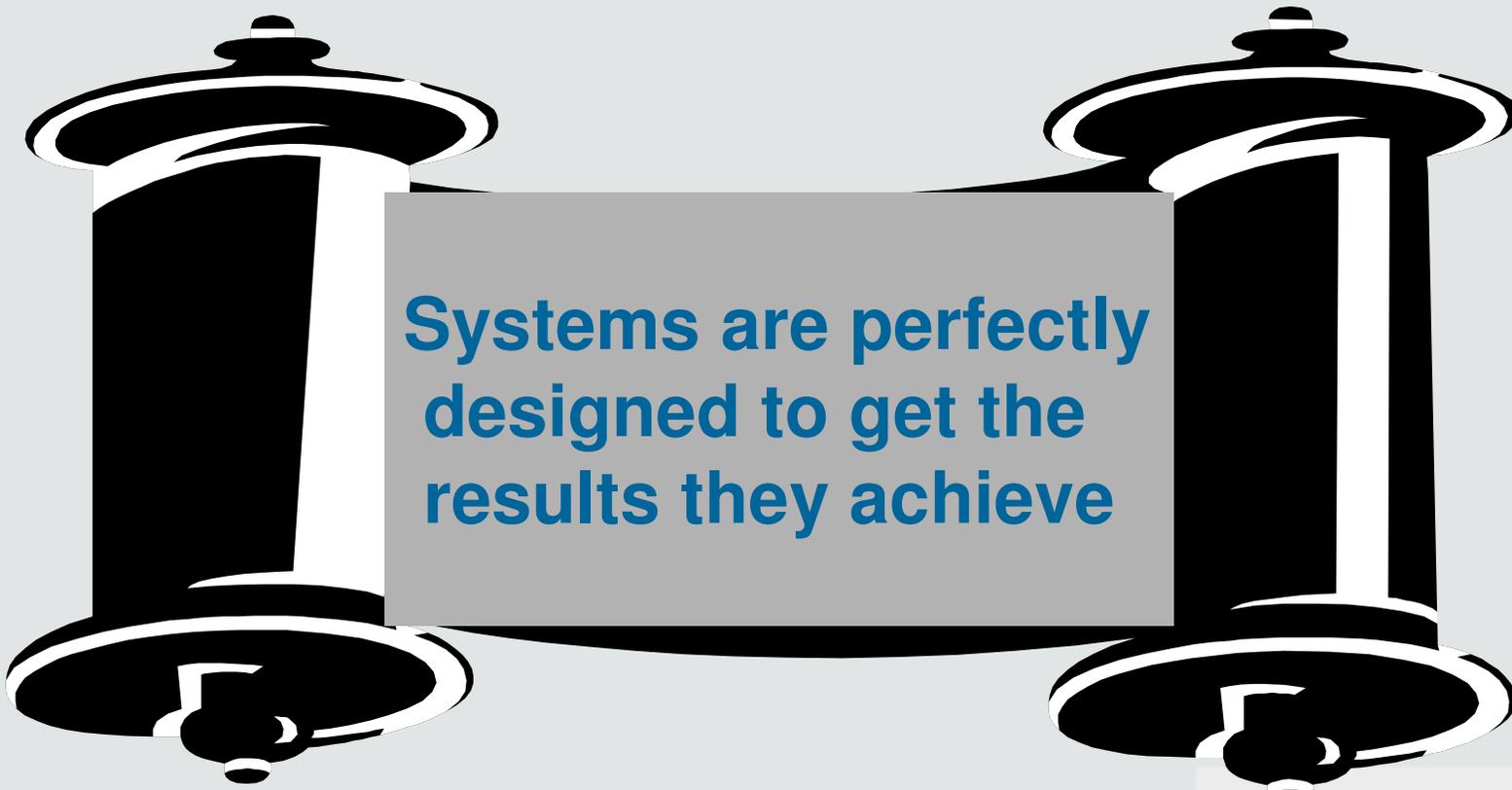
CONDITION	SHORTFALL IN CARE	AVOIDABLE TOLL
Diabetes	Average blood sugar not measured for 24%	29,000 kidney failures 2,600 blind
Colorectal cancer	62% not screened	9,600 deaths
Pneumonia	36% of elderly didn't receive vaccine	10,000 deaths
Heart attack	39% to 55% didn't receive needed medications	37,000 deaths
Hypertension	Less than 65% received indicated care	68,000 deaths

Source: Elizabeth McGlynn, et al. "The Quality of Health Care Delivered to Adults in the US." NEJM 2003; 348:2635-45



# The Watchword

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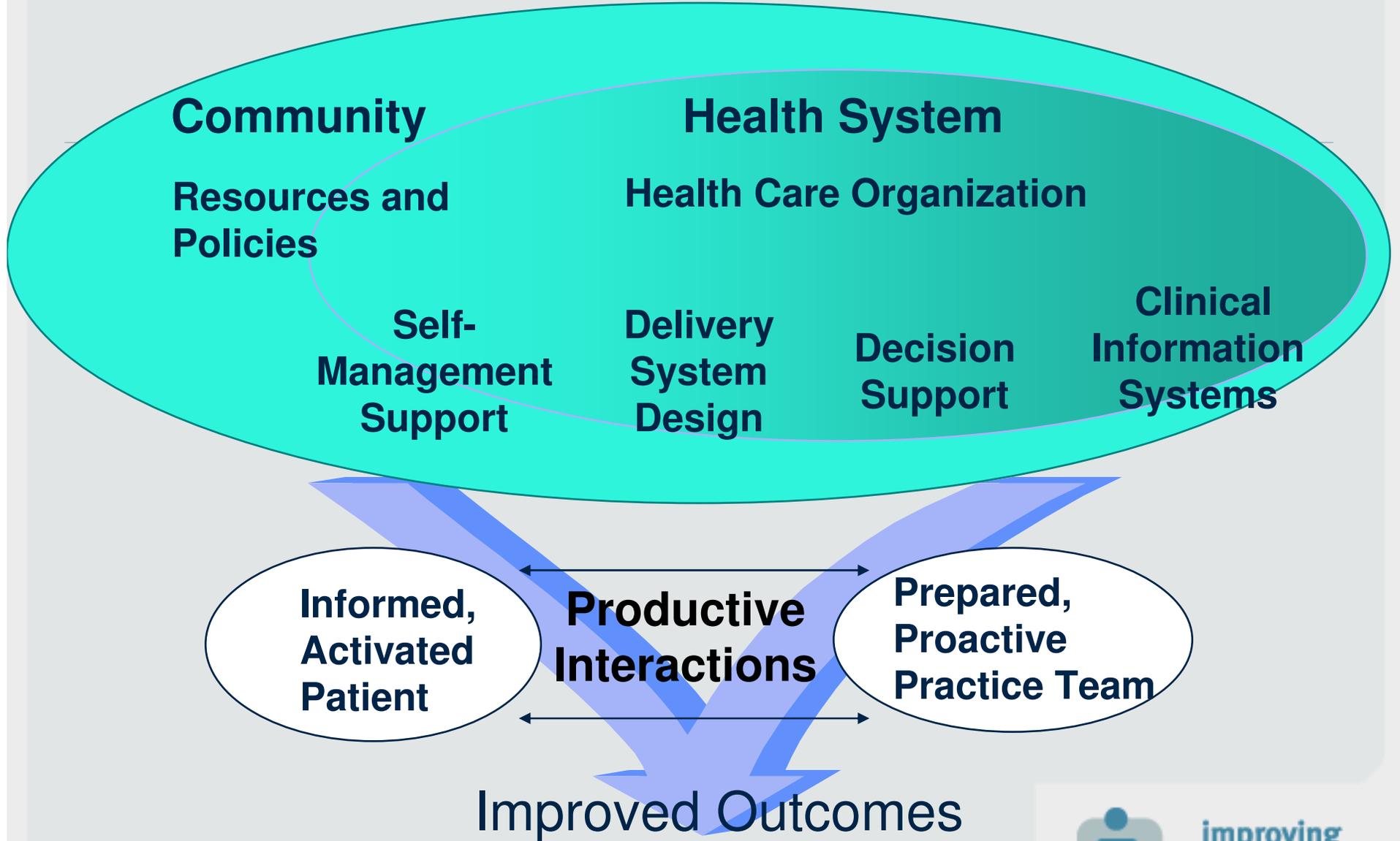
**Systems are perfectly  
designed to get the  
results they achieve**

# Problems with Current Disease Management Efforts

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- Emphasis on physician, not system, behavior
- Characteristics of successful interventions weren't being categorized usefully
- Commonalities across chronic conditions unappreciated.
- Competing organizational initiatives

# Chronic Care Model



# Model Development 1993 --

- **Initial experience at GHC**
- **Literature review**
- **RWJF Chronic Illness Meeting -- Seattle**
- **Review and revision by advisory committee of 40 members (32 active participants)**
- **Interviews with 72 nominated “best practices”, site visits to selected group**
- **Model applied with diabetes, depression, asthma, CHF, CVD, arthritis, and geriatrics**

# Essential Element of Good Chronic Illness Care

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# What characterizes a “prepared” practice team?

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**Prepared  
Practice  
Team**

**At the time of the visit, they have the patient information, decision support, people, equipment, and time required to deliver evidence-based clinical management and self-management support**

# What characterizes a “informed, activated” patient?

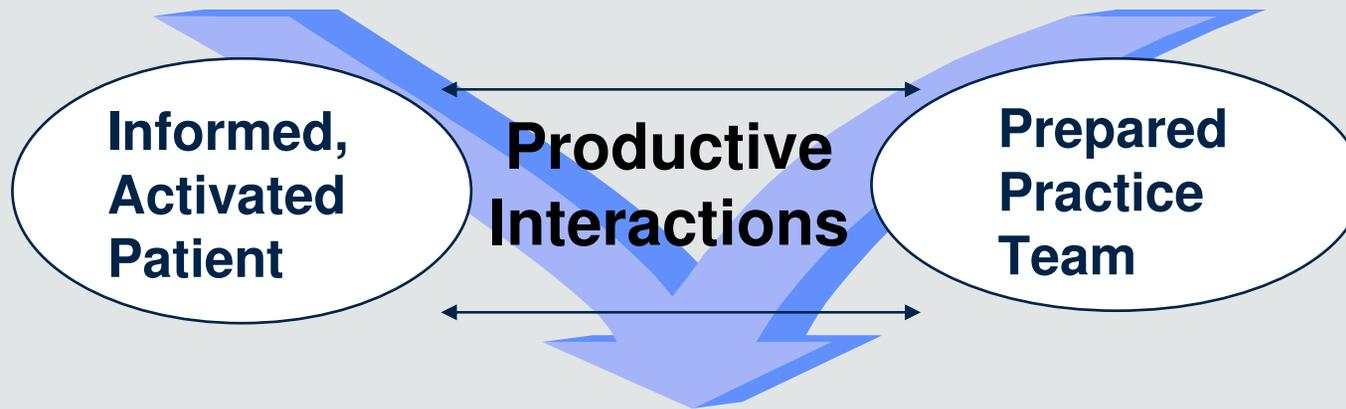
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**Informed,  
Activated  
Patient**

**Patient understands the disease process, and realizes his/her role as the daily self manager. Family and caregivers are engaged in the patient’s self-management. The provider is viewed as a guide on the side, not the sage on the stage!**

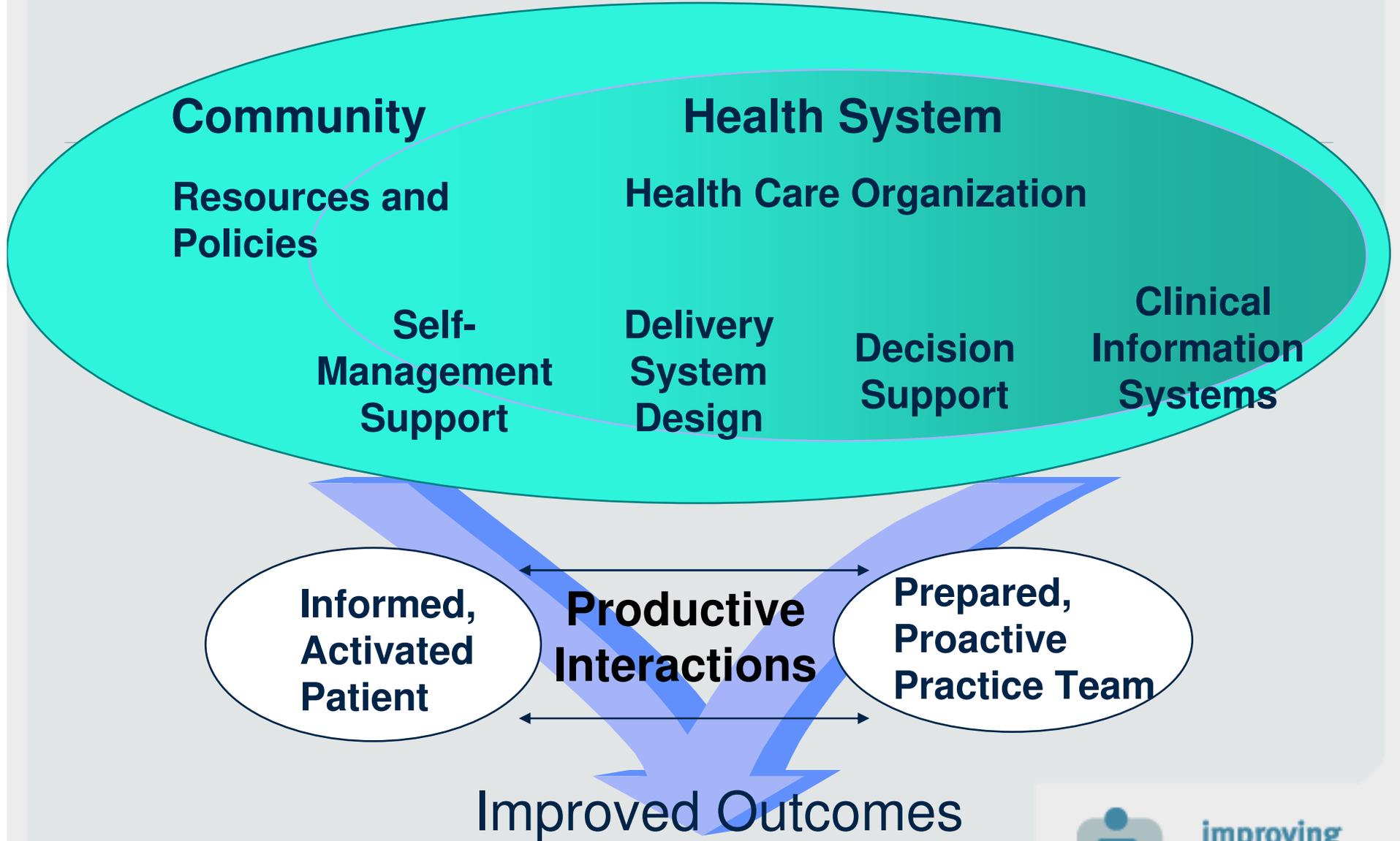
# *How would I recognize a productive interaction?*

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- **Assessment of self-management skills and confidence as well as clinical status**
- **Tailoring of clinical management by stepped protocol**
- **Collaborative goal-setting and problem-solving resulting in a shared care plan**
- **Active, sustained follow-up**

# Chronic Care Model



# Self-management Support

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- **Emphasize the patient's central role.**
- **Use effective self-management support strategies that include assessment, goal-setting, action planning, problem-solving and follow-up.**
- **Organize resources to provide support**

# Delivery System Design

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- **Define roles and distribute tasks amongst team members.**
- **Use planned interactions to support evidence-based care.**
- **Provide clinical case management services.**
- **Ensure regular follow-up.**
- **Give care that patients understand and that fits their culture**

# Features of case management

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- Regularly assess disease control, adherence, and self-management status
- Either adjust treatment or communicate need to primary care immediately
- Provide self-management support
- Provide more intense follow-up
- Provide navigation through the health care process

# Decision Support

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- Embed evidence-based guidelines into daily clinical practice.
- Integrate specialist expertise and primary care.
- Use proven provider education methods.
- Share guidelines and information with patients.

# Clinical Information System

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- Provide reminders for providers and patients.
- Identify relevant patient subpopulations for proactive care.
- Facilitate individual patient care planning.
- Share information with providers and patients.
- Monitor performance of team and system.



# Health Care Organization

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- **Visibly support improvement at all levels, starting with senior leaders.**
- **Promote effective improvement strategies aimed at comprehensive system change.**
- **Encourage open and systematic handling of problems.**
- **Provide incentives based on quality of care.**
- **Develop agreements for care coordination.**



# Community Resources and Policies

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- **Encourage patients to participate in effective programs.**
- **Form partnerships with community organizations to support or develop programs.**
- **Advocate for policies to improve care.**

# Advantages of a General System Change Model

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- Applicable to most preventive and chronic care issues
- Once system changes in place, accommodating new guideline or innovation much easier
- Fits well with other redesign initiatives
- Approach is being used comprehensively in multiple care settings and countries



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# Research and QI Findings about The Chronic Care Model

# Organizing the Evidence

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1. Randomized controlled trials (RCTs) of interventions to improve chronic care
2. Studies of the relationship between organizational characteristics & quality improvement
3. Evaluations of the use of the CCM in Quality Improvement
4. RCTs of CCM-based interventions
5. Cost-effectiveness studies



# 1: RCTs of interventions to improve chronic care results

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- “Complex,” “integrated care,” “disease management” programs show positive effects on quality of care
- Consistently powerful elements include: team care, case management, self-management support

## 2: Studies of the Relationship between Organizational Characteristics & Successful Implementation of QI Projects

### **Common organizational characteristics across studies:**

- Organized teams, including physicians, involved in quality improvement
- Reminder systems & patient registries
- Reporting data to external organizations
- Formal self-management programs

### **Others Characteristics associated with process improvement include:**

- Receiving income, recognition, or better contracts for quality
- Improved IT infrastructure
- Large size
- Receiving capitation payments
- Utilizing guidelines supported by academic detailing
- Primary care orientation



# 3: Evaluations of the Use of CCM in Quality Improvement

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- Largest concentration of literature
- RAND Evaluation of ICIC
- Wide variety in quality and type of evaluation design
- Majority of studies focus on diabetes

# 3: RAND Evaluation of Chronic Care Collaboratives

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- Two major evaluation questions:
  1. Can busy practices implement the CCM?
  2. If so, would their patients benefit?
- Studied 51 organizations in four different collaboratives, 2132 BTS patients, 1837 controls with diabetes, CHF, asthma
- Controls generally from other practices in organization
- Data included patient and staff surveys, medical record reviews



# 3: RAND Findings

## Patient Impacts

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- Diabetes pilot patients had significantly reduced CVD risk (pilot>control), resulting in a reduced risk of 1 cardiovascular disease event for every 48 patients exposed.
- CHF pilot patients more knowledgeable and more often on recommended therapy, had 35% fewer hospital days and fewer ER visits
- Asthma and diabetes pilot patients more likely to receive appropriate therapy.
- Asthma pilot patients had better QOL



### 3: Non-RAND Evaluations of CCM Implementation

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- In general, those studies with greater fidelity to the CCM showed greater improvements
- All but one showed improvement on some process measures
- Most showed improvement on outcomes & empowerment measures, as well.
- Sustainability & implementation of all CCM elements were challenges
- Physician & staff must be motivated to change



## **Successes of Teams in Collaboratives: The Benefit of Organized Chronic Care**

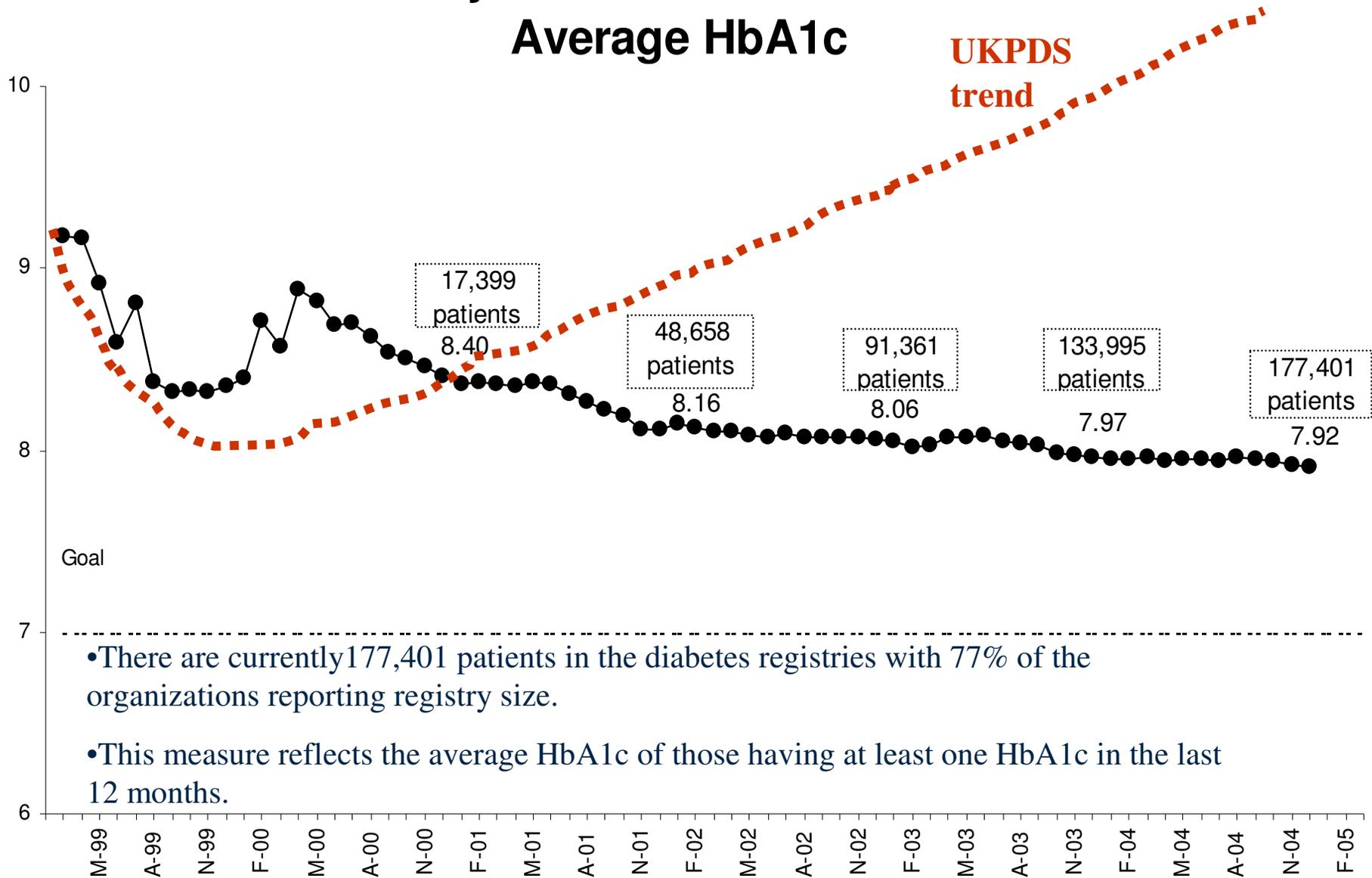
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- 1.5 - 2 times as many patients with major depression will be recovered at six months
- Inner city kids with moderate to severe asthma have 13 fewer days per year with symptoms
- Readmission rates of patients hospitalized with CHF will be cut nearly in half



# Key Measures: Diabetes

## Average HbA1c



- There are currently 177,401 patients in the diabetes registries with 77% of the organizations reporting registry size.
- This measure reflects the average HbA1c of those having at least one HbA1c in the last 12 months.

Source of data reported 1/1/05: [jlangle@apiweb.org](mailto:jlangle@apiweb.org); Slide preparation: [chupke@nibcomp.com](mailto:chupke@nibcomp.com) 2-2-05

# High Plains Community Center

- **Lamar, Colorado**
- **Serves 11,000 people**
- **29% uninsured**
- **14% monolingual in Spanish**
- **172 diabetics – A1c fell from 9.5% to 8.4%**
- **114 with CVD - % with BP < 140/90 rose from 35% to 62%**



# 4: RCTs of CCM-based interventions

## Results

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- All but one study shows that implementation of the Chronic Care Model significantly improves process and outcome measures compared to controls and – when included in the trial – less intensive interventions (e.g. physician training alone)
- Often CCM implementation is linked with improved patient empowerment & education scores, as well
- Active team motivation to change may be an important factor in predicting success

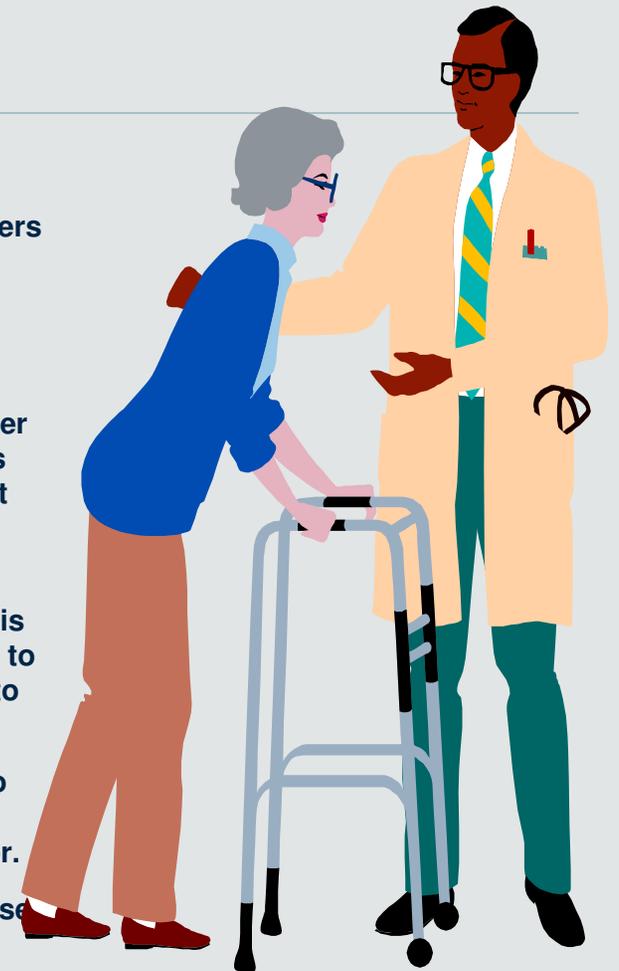


# 5: Cost Effectiveness Study Results

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- Some evidence that improved disease control can reduce cost, especially for heart disease & uncontrolled diabetes
- Achieving cost-savings depends on the disease management strategies employed
- Features of the healthcare market place – including displacement of payoffs in time and place and failure to pay for quality – act as barriers to a business case for quality

- In the new system Mrs. C is discharged after her first bout of breathlessness. The hospital providers her with information about CHF and the risk factors for diabetes, but assures her that follow-up will happen immediately.
- The discharge nurse notes Mrs. C's conditions and care in the EHR and then sends an email to her primary care physician's office about her recent hospitalization.
- The primary care nurse ensures the physician sees the information and calls Mrs. C to schedule a follow-up within 48 hours. Mrs. C is added to the care team's registry which ensures that evidence-based care prompts and reminders will alert the provider team to her future preventive care needs.
- Mrs. C comes in for her appointment which is scheduled for 30 minutes: 15 minutes with her physician and 15 minutes with the nurse (or medical asst.). The physician explains CHF and diabetes to her. He orders the appropriate diagnostic test for diabetes and assures her that all will be fine recognizing her fear and shock. He closes the loop with her to make sure she understood his recommendations and then briefly explained the concept of self-management support.
- Mrs. C then visits with the nurse who steps her through a collaborative goal setting and action planning process. While Mrs. C is a bit overwhelmed, she is assured that her care team will follow-up in the next couple of days by phone to make sure she understands her clinical and self-management care plan and to report on the results of diabetes test.
- The nurse calls within 48 hours and informs Mrs. C that she should be able to manage her blood sugar by better diet and exercise. She reviews the CHF medications with Mrs. C and adjust dosage since it seems to be bothering her.
- She is scheduled for a follow-up visit in one week to discuss her blood glucose in more depth. She is encouraged to call her team should she have any concerns or symptoms in the meantime.
- Mrs. C understands the hard work she needs to do to manage her conditions but is thankful for such a caring team.





# QUALITY

THE RACE FOR QUALITY HAS NO FINISH LINE-  
SO TECHNICALLY IT'S MORE LIKE A DEATH MARCH.

[www.despair.com](http://www.despair.com)

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For more information please see our web site:

[www.improvingchroniccare.org](http://www.improvingchroniccare.org)

Or contact me at [hindmarsh.m@ghc.org](mailto:hindmarsh.m@ghc.org)

Thank you

