# Health Quality Partners' Advanced Preventive Service℠

*Brief Overview – Framework for Design, Program Description, Results*

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# Health Quality Partners (HQP)
# Who we are and what we do

- Dedicated to Research and Development
- Non-profit, 501c3, founded in 2000
- Approach: use disciplines of public health, systems design & analysis, and quality improvement
- Mission: design, test, and spread new models of care that improve the health of populations, and the quality and experience of health care

# Current Areas of Work at HQP

- Medicare Coordinated Care Demonstration (CMS)
- Medicare Advantage (Aetna)
- Consultant\collaborators for urban Medicaid ACO (Camden Coalition of Healthcare Providers)
- Comprehensive Primary Care Initiative (Princeton Health Care Medical Associates)
- Health Systems Redesign
  - Improving Systems Initiative (Doylestown Hospital)
  - Cancer care coordination model (Clinical Cancer Center at Froedtert & the Medical College of Wisconsin)

# Framework for Designing a New Model

- We need effective systems of prevention for chronic disease
- Highly effective prevention improves health
- For higher risk populations, improved health reduces use of acute care services and lowers cost
- THE KEY: Understand and address the *root cause determinants of health* of a specific high risk population
  - DEFINE, DESIGN, DEPLOY, REFINE
  - Advanced Preventive Service

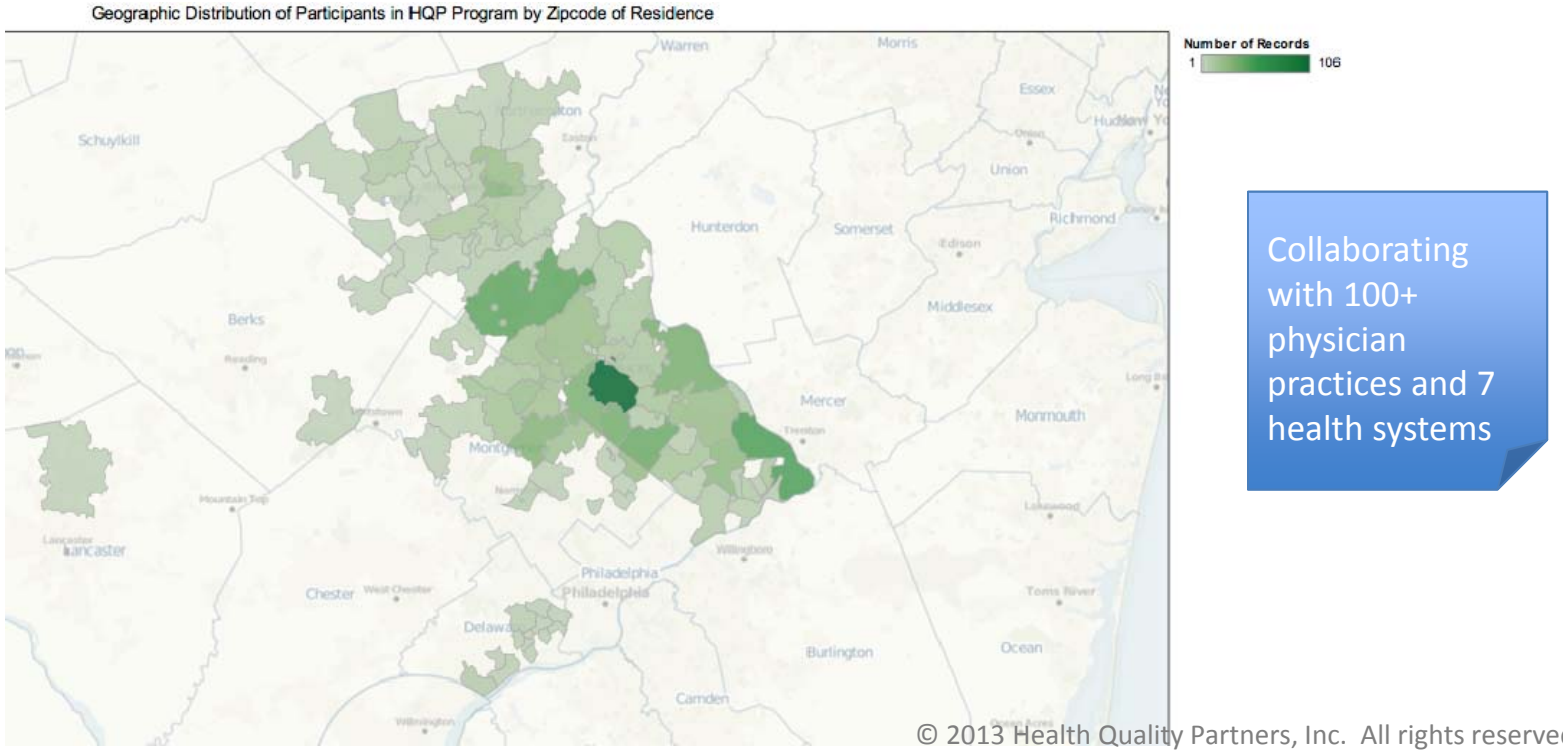
# Creating an Advanced Preventive Service

- Define
  - Target population and *root cause determinants of health*
- Design
  - Portfolio of several (dozens) of evidence-based preventive interventions
  - Standards, protocols, procedures, communication loops
  - Team roles, work flows, staff training, mentoring and monitoring
  - Participant education
- Deploy
  - Community-based approach with extensive collaborations and data sharing
  - Frequent contacts (1:1, group, phone)
  - Very longitudinal (absent significant, durable shift in participant risk status)
  - Case finding, outreach, engagement, individualized (person-centered)
  - Service data capture and advanced program analytics
- Refine
  - Ongoing improvement guided by performance analytics, outcomes, staff observations, participant feedback, collaborator feedback

High reliability

# Population Served

- Traditional Medicare and Medicare Advantage
- Chronically ill with heart failure, coronary heart disease, diabetes, chronic lung disease
  - Other risks as well; prior admission or high risk score
  - Median age 81 years




Collaborating with 100+ physician practices and 7 health systems

# Care team composition and locus

- RN's deliver the care (currently n=16)
- Program is freestanding and delivered throughout the community (home, doc offices, hospital, rehab, community centers, program office)
  - Touchdown space provided by major health system partners
- Significant administrative, management, data, and analytical support – commensurate with HQP's R&D mission
  - Medical Director, CEO (MD)
  - SVP, Program Architect (MSW)
  - Director of Operations
  - Senior Clinical Lead (NP)
  - Director of Care Management (RN)
  - Chief of Finance and Analytics (MBA)
  - Chief of Information Technologies
  - Administrative, Data Collection, and Outreach Support staff

Organizations adopting (rather than developing) the program need less infrastructure:

but strong management and clinical support still important

# Mode and freq

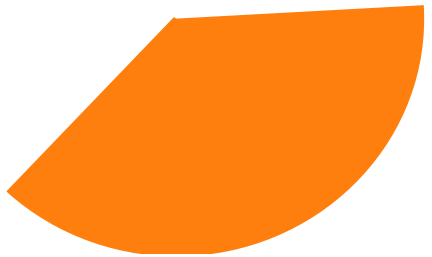
**In one year** (1/22/2012

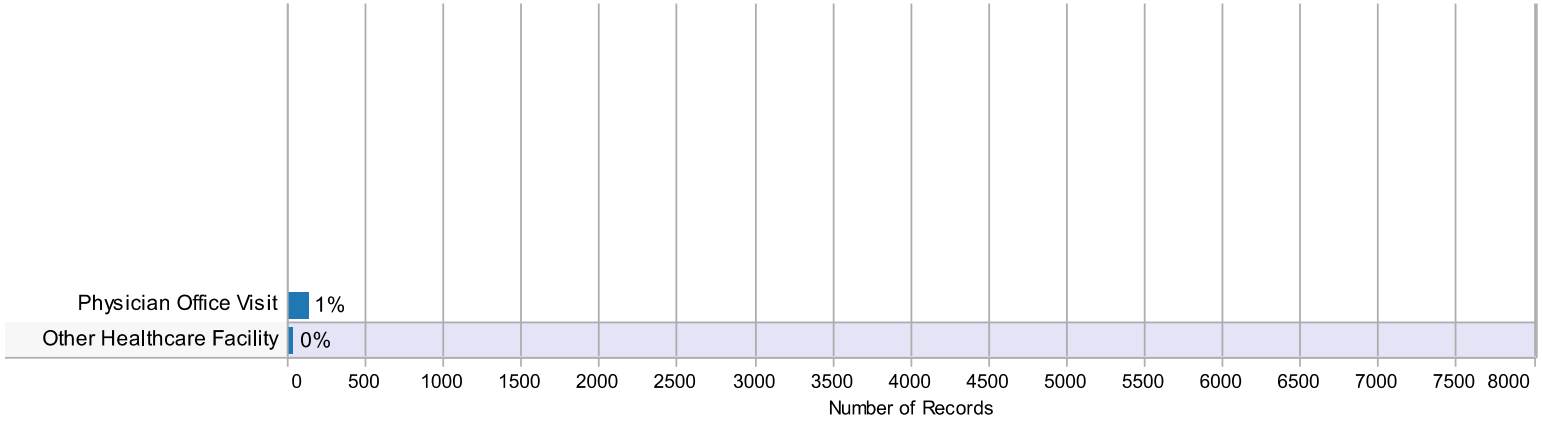
With approx. 660 active

Contacts = 19,240 conta

In-person = 11,926 (62%

At-home = 7,289 (38%)





# Mechanisms of coordinating with other providers

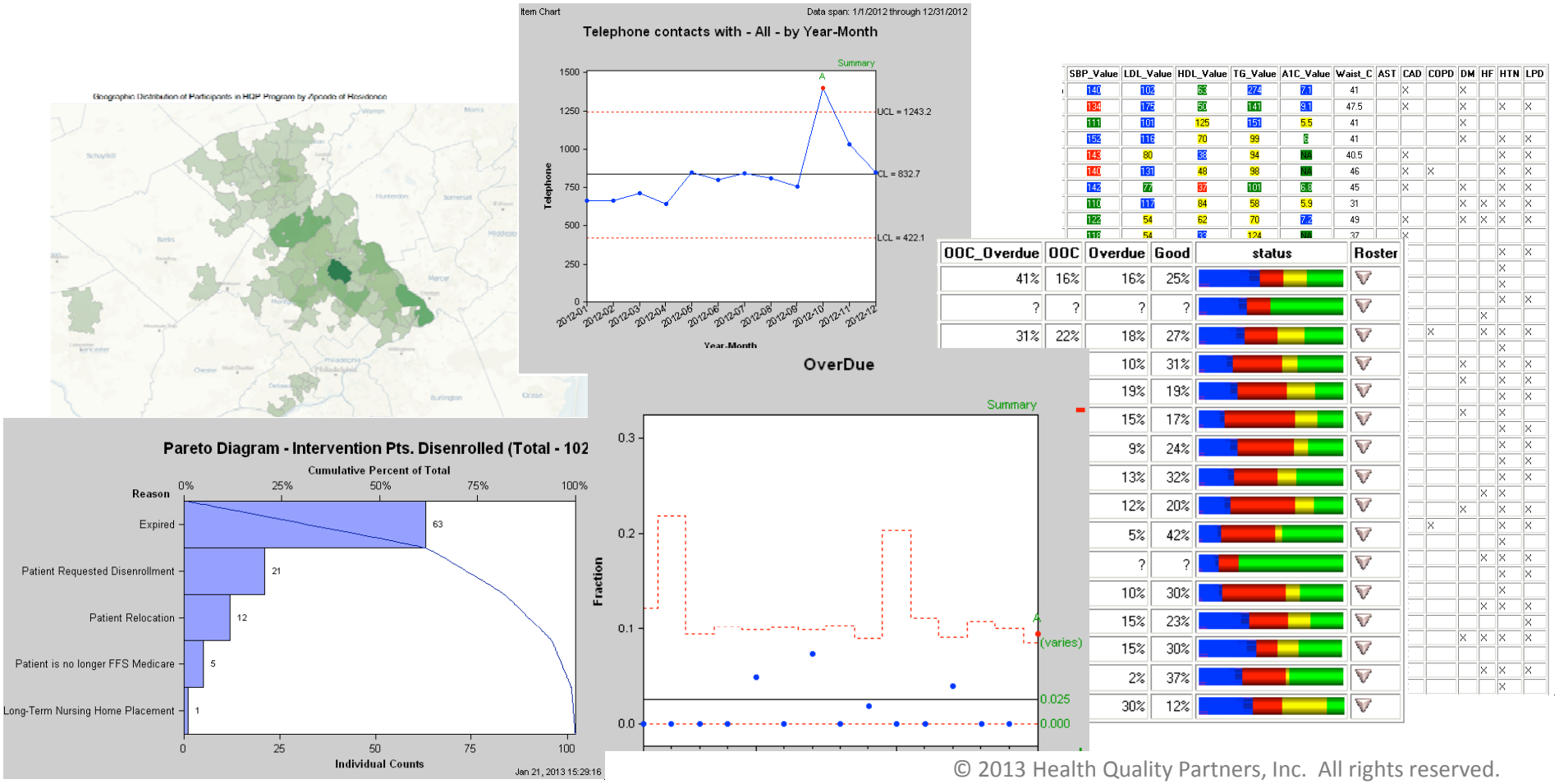
- The What:  Information Management is Essential
  - Disciplined and Reliable
    - Communication protocols or standards (internal and external to team)
  - Timely
  - Contextualized
  - High-value and important (to recipient)
- The How:  Ideally as the Recipient Prefers
  - Customize to individual physician or organization preference
  - Phone and Fax remain mainstays even in the digital age
  - EMR's are up and coming, but better for asynchronous, non-urgent communications
  - Occasional face-to-face meetings (used judiciously & ideally in care flow)

# Use of Technology

- Population health impact possible with minimal external data feeds
  - BIGGER impacts are possible WITH external data feeds (if well analyzed)
- Advanced Preventive Service Platform
  - First generation fully in use at HQP 10/2012
  - Secure, privately-hosted ‘cloud’ service
  - Scalable, resilient, adaptable
  - Mobile devices with cellular internet connect
  - Capture service data from field (near real-time) ESSENTIAL FOR RELIABILITY
  - Also includes Advanced Analytics, Policy Management, Staff Training and Patient Education Curriculum Management and Distribution
  - Available to others in late 2013

# Use of Technology: Advanced Analytics are KEY

- Separating the Signal from the Noise
  - Prioritize individuals with dynamically changing risk profiles
  - Identify variation in service delivery performance to direct root cause analysis, organizational learning, and management corrective actions



# Outcomes

| Population | N | Control PPPM | Deaths | Hospital admissions | ER visits | Part A & B expenditures; excl prgm fees | Part A & B expenditures; incl prgm fees | SNF cost |
|---|---|---|---|---|---|---|---|---|
| Medicare Coordinated Care Demonstration (randomized, controlled trial versus usual care) | | | | | | | | |
| All risk levels (low, mod & high) | 1,464 | | | -14% | | -14% * | Neutral | |
| | 1,721 | $731 | -25% ** | -7 % | | -4% | +9% | |
| Higher-risk 1 | 502 | $900 | -30% ** | -29% ** | | -20% * | | |
| Higher-risk 2 | 248 | $1,441 | -18% | -39% ** | -37% ** | -36% ** | -28% ** | -64% ** |
| Higher-risk 3 | 695 | $1,108 | | -25% ** | | -20% ** | -10% | |
| Higher-risk 4 | 273 | $1,363 | | -33% ** | | -30% ** | -22% | |
| Aetna (difference-in-differences analysis trended over time against a like comparison group) | | | | | | | | |
| Higher-risk 5 | 942 | | | -20% ° | | | 18% ° | |

** P ≤ 0.05, * P ≤ 0.1

° statistics not reported

Third Report to Congress, Deborah Peikes, et al., Jan 1, 2008, Mathematica Policy Research, Inc. (MPR)

Fourth Report to Congress, Jennifer Schore, et al., March 2011, MPR

PLoS Medicine, Ken Coburn, et al., July 2012, 9(7): e1001265. doi:10.1371/journal.pmed.1001265

JAMA, Deborah Peikes, et al., Feb 2009;301(6):603-618 (doi:10.1001/jama.2009.126)

MPR report shared with HQP with CMS permission, 2011 (unpublished)

Health Affairs, Randall Brown, et al., June 2012, 31, no.6:1156-1166

Aetna Medical Economics Team Report 2011 (unpublished)

Higher-risk 1; based on geriatric HRA
Higher-risk 2; (HF, CAD, or COPD) AND ≥1 hospitalization in prior year
Higher-risk 3; HF, CAD, or COPD
Higher-risk 4; [(HF, CAD, or COPD) AND ≥1 hospitalization in prior year] OR [(diabetes, cancer (not skin), stroke, depression, dementia, atrial fibrillation, osteoporosis, rheumatoid arthritis/osteoarthritis, or chronic kidney disease) AND ≥2 hospitalizations in the prior 2 years]
Higher-risk 5; (HF, CAD, COPD, Asthma, or diabetes) AND ≥ minimum cut-point on Aetna proprietary risk score

Abbreviations: PPPM= per person per month, ER= emergency room, SNF= skilled nursing facility, HRA= health risk assessment, HF= heart failure, CAD=coronary artery disease, COPD=chronic obstructive pulmonary disease

# Publications

JAMA®

Online article and related content current as of February 10, 2009.

**Effects of Care Coordination on Hospitalization, Quality of Care, and Health Care Expenditures Among Medicare Beneficiaries: 15 Randomized Trials**

Deborah Peikes; Arnold Chen; Jennifer Schore; et al.

*JAMA*. 2009;301(6):603-618 (doi:10.1001/jama.2009.126)

http://jama.ama-assn.org/cgi/content/full/301/6/603

"… HQP, also showed promise, … for this subgroup [highest severity cases] both differences were large (-29% for hospitalizations and -20% for expenditures) and statistically significant (P=.009 and P=.07, respectively)."

HEALTH AFFAIRS JUNE 2012 31:6

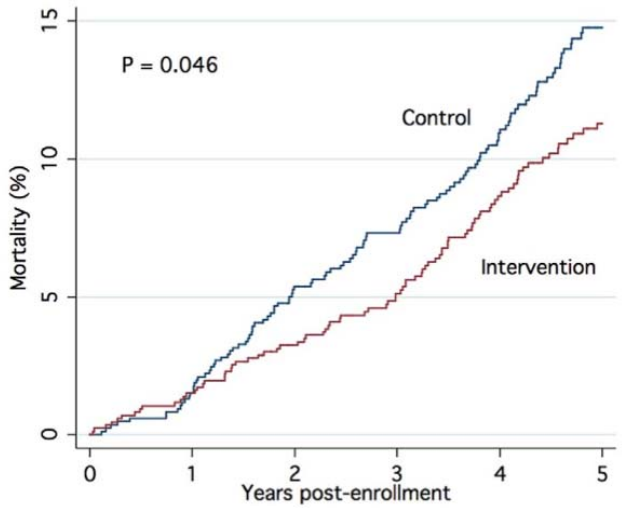
AVOIDABLE ADMISSIONS

By Randall S. Brown, Deborah Peikes, Greg Peterson, Jennifer Schore, and Carol M. Razafindrakoto

DOI: 10.1377/hlthaff.2012.0393
HEALTH AFFAIRS 31,
NO. 6 (2012): 1156–1166


**Six Features Of Medicare Coordinated Care Demonstration Programs That Cut Hospital Admissions Of High-Risk Patients**

"… Health Quality Partners, reduced hospitalizations by 30 per 100 beneficiaries (33 percent; *p*=0.02)"
" … The demonstration program with the largest effects, at Health Quality Partners, was very data-driven, tracking care coordinators' performance and continually assessing the effectiveness of newly introduced interventions component and refinements to existing ones …"




OPEN ACCESS Freely available online PLoS MEDICINE

**Effect of a Community-Based Nursing Intervention on Mortality in Chronically Ill Older Adults: A Randomized Controlled Trial**

**Kenneth D. Coburn*, Sherry Marcantonio, Robert Lazansky, Maryellen Keller, Nancy Davis**

Health Quality Partners, Doylestown, Pennsylvania, United States of America

"… Overall, a 25% lower relative risk of death (hazard ratio [HR] 0.75 … the adjusted HR was 0.73 (95% CI 0.55-0.98, *p*=0.033)."

# Essential Elements

- DEFINE, DESIGN, DEPLOY, REFINE
- In Define Phase – select a good target population
- In Design Phase
  - Challenge prevailing assumptions & mental models
  - Seek profound knowledge of root cause health determinants
  - Ensure that overall intervention is STRONG; engage participants
- In Deployment – Reliability is a must
- Technology
  - Unlock the signal from the noise in data through advanced analytics
  - Bring the program resources and decision support to the fingertips of the field staff via secure mobile devices

# Case Study

## Mrs. Z, Enrolled 9/2005; Age: 67

Sutter Level 4 High Risk with Geriatric Frailty

- Type 2 Diabetes with insulin therapy
- Peripheral neuropathy, Retinopathy
- Cardiomyopathy/Heart Failure w/biventricular pacemaker
- CAD
- Asthma (continuous oxygen therapy)
- Depression
- GERD
- Hypertension

## Problem Areas:

- Multiple co-morbidities requiring complex self-management
- Complex medication regimen with frequent changes
- Depression; Domestic Violence/Marital Issues
- Difficulty with Activities of Daily Living (ADLs)
- Safety/Fall Risk
- Numerous specialist s and other health care providers , communication breakdowns (patient-physician and physician-physician)
- Serious Financial issues, difficulty affording food, medicines, heat

3 hospitalizations in the 6 months prior to enrollment

Enrolled 9/2005

3/06 Adm Defibrillator discharged X 4; MI

1/06 Admission HF

1/06 & 4/06: Upper Respiratory Infections; treated w/ antibiotics steroids

11/07 Adm Dehydration, Shingles

1/08 Adm V-Fib, ICD
2/08 Adm UTI
6/08 Adm ICD
10/08 Adm Chole.

2009: New diagnoses: A-Fib started on Coumadin, Sleep Apnea started on bi-pap, retinal hemorrhage, migraine headaches. Taking 26 medications. HF, Diabetes, Asthma management improved with CM intensive interventions

2010-11

- + Depression
- Fall Risk
- UTI – early treatment
- 2/11 – adm 1 day pacemaker battery change
- New diagnoses: spinal stenosis, bursitis of hip and shoulder pain
- Incident of DV; safety plan and resources provided
- Age 73

2005 → 2006 → 2007 → 2008 → 2009 → 2010 → 2011

## HQP Contacts

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Total |
|---|---|---|---|---|---|---|---|---|
| **Home Visits** | 5 | 13 | 10 | 15 | 11 | 14 | 9 | 77 |
| **Telephone Calls** | 8 | 25 | 50 | 73 | 37 | 37 | 10 | 240 |
| **PCP Office Visits** | - | 1 | 1 | 3 | 1 | - | - | 6 |
| **HQP Office Visits** | - | - | 5 | 2 | - | - | 4 | 11 |
| **Hospital Visits** | - | 1 | - | 1 | 1 | - | - | 3 |
| **Group Sessions** | - | - | 22 | - | - | 1 | 4 | 27 |
| **Total** | 13 | 40 | 88 | 94 | 50 | 52 | 27 | 364 |

### 2005- 2006:

- Intensive management of HF, Diabetes and Asthma; 1:1 Patient education
- Recommended Pulmonary Rehabilitation
- Post hospital care transition support
- Collaboration with PCP to increase anti-depressant; referred-counseling
- Resources for DV and safety plan
- Referral to Area Office on Aging for heating and PACE (medications)

### 2007 – 2008:

- LEARN Weight Management Program 16 wk.
- Weight maintenance program
- Transition support and close follow up; collaboration with cardiology, endocrinology, VN
- Advanced Directives/Living Will
- Serious financial needs; referred for assist w/food stamps; heating, Lifeline

### 2010 - 2011

- Referred for subsidized housing
- Medication management
- Attending monthly weight maintenance group
- Referred again for counseling – depression/ DV with pastor
- Referred for physical therapy – fall risk
- Food bank referral
- AAA – for subsidized housing
- Tried chair exercise

### 2005 – 2011: Continuous Management & Monitoring & Education

Intensive management /action plans: - diabetes, heart failure and asthma; Patient education - diet, identifying early warning signs & symptoms of hypoglycemia, URI, heart failure; medication management – how to use medications long-term v. quick relief; skills training and monitoring: blood glucose and peak flow meter; collaboration with endocrinologist, cardiologist, pulmonologist and PCP to report abnormal findings and for frequent medication and treatment adjustments.

# Unsolved Challenges

- Only those we haven't had a chance to work on yet
- Replicating the program in other regions with other lead organizations serving as the local hub / anchor
  - Consultative engagement
  - "Franchise"
  - A la carte support service; e.g. Advanced Preventive Service Platform
- Using the Advanced Preventive Service approach to adapt and implement the model among other vulnerable populations
  - Medicaid
  - Dual-eligibles
  - Other groups with health disparities; e.g., Native Americans

# Contact Us

- HQP is interested in large projects related to scaling, replicating, adapting, or adopting our model and tools
- coburn@hqp.org
- http://hqp.org