



Literature Review on Selected DSRIP Programs: Reducing Hospital Admissions

Introduction

Provided in this document are brief summaries and/or descriptions of published studies on outcomes related to reducing hospital admissions for projects and strategies associated with each of three key DSRIP Domains 2 through 4, focused on those identified by New York State for planning considerations among Performing Provider Systems (PPSs) that are relevant to FQHCs’ participation.

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Domain 2. Created Integrated Delivery Systems (IDS)

Strategy A. Create Integrated Delivery Systems (IDSs) (Required)

Project 2.a.i. Create IDSs that focus on Evidence-based Med (EBM)/Pop Health Management

Colla CH, Wennberg DE, Meara E, et al. Spending differences associated with the Medicare Physician Group Practice Demonstration. JAMA. 2012;308(10):1015-23.

Thirty-day medical readmissions decreased overall (-0.67%, 95% CI, -1.11% to -0.23%) and in the dually eligible (-1.07%, 95% CI, -1.73% to -0.41%), while surgical readmissions decreased only for the dually eligible (-2.21%, 95% CI, -3.07% to -1.34%). Effects were mixed across institutions, but mostly positive for the dual eligible population.

Adamson, M. How ACOs Can Prevent Avoidable Hospital Admissions? Accountable Care News. November 2013. See: <http://www.zeomega.com/wp-content/uploads/acnews1113Adamson.pdf>

Theorized impact comes from establishing a strong medical home, and implementing evidence-based care management and coordination programs.

AHRQ. The State of Accountable Care Organizations. See: <http://www.innovations.ahrq.gov/content.aspx?id=3919#1>

Good background on the risks and promises of establishing an ACO/IDS.

Project 2.a.ii. Increase certification of PCPs with PCMH recognition or Advanced Primary Care (APC) models

<i>Study</i>	<i>Results</i>
POSITIVE (OR MIXED) FINDINGS ON HOSPITAL ADMISSIONS	
Steele GD, et al. "How Geisinger's advanced medical home model argues the case for rapid-cycle innovation." Health Affairs 29.11 (2010): 2047-2053. - Integrated delivery system - All disease/condition - Medicare FFS, Medicare Advantage, commercial payer - Varied age - Ongoing study	- With each program expansion, <u>risk-adjusted acute hospital admission rates fell significantly.</u>
Reid RJ, et al. "The Group Health Medical Home at Year Two: Cost Savings, Higher Patient Satisfaction, and Less Burnout for Providers." Health Affairs, 29, no. 5 (2010): 835-843.	- Though savings not statistically significant, authors estimate \$1.50 saved for every \$1 invested in program - ED/urgent care visit rate for study group was 29% lower than for controls

<i>Study</i>	<i>Results</i>
<ul style="list-style-type: none"> - Primary care clinic in an integrated delivery system - All disease/condition - Group Health payer - Adult population - 21 month duration 	<ul style="list-style-type: none"> - Savings of about \$4 pmpm in ED use - <u>6% reduction in all-cause admissions; 13% reduction in ambulatory care sensitive admissions</u> - Savings of about \$14 pmpm in hospitalization - 6% reduction compared to control group in primary care use - Increase of \$1.63 per member per month compared to control group in primary care use - 3% increase compared to control group in specialty care use - Increase of \$5.78 per member per month compared to control group in specialty care use - The results also show improvements in patients' experiences, quality, and clinician burnout through two years. .
<ul style="list-style-type: none"> - Reid RJ. "Patient-centered medical home demonstration: a prospective, quasi-experimental, before and after evaluation." Am J Manag Care. 2009 Sep 1;15(9):e71-87. - Primary care clinic in an integrated delivery system - Varied disease/condition - Group Health payer - Adult population - 12 month duration 	<ul style="list-style-type: none"> - No significant differences in overall costs at 12 months. - Rate of ED visits was 29% lower in study group than control group - Savings of \$54 per person per year in ED use - <u>Rate of ambulatory care sensitive hospital admissions was 11% lower</u> in study group than control group - Study group rate of primary care use was 6% lower than control group. - Cost increase of \$16 per person per year in primary care use - Study group had 8% higher rate of use of specialty care services. - PCMH patients gave higher ratings on 6 of 7 patient experience scales. - PCMH patients used more email and phone services.
<ul style="list-style-type: none"> - Dorr DA, et al. "Implementing a multidisease chronic care model in primary care using people and technology." Disease Management 9.1 (2006): 1-15. - Primary care clinics - Diabetes, depression - 18+ years old - 1 year duration 	<ul style="list-style-type: none"> - 8% reduction in total cost for patients with depression, compared to 19% increase for control group. - <u>3.2% fewer hospitalizations for care managed patients with diabetes.</u>
<p>Hoff T, Weller W, DePuccio M. "The Patient-Centered Medical Home: A Review of Recent</p>	<ul style="list-style-type: none"> - 7 of 10 that reported found significant reduction in ER use

<i>Study</i>	<i>Results</i>
<p>Research." Medical Care Research and Review 69.6 (2012): 619-644.</p> <ul style="list-style-type: none"> - Review of multiple studies - Varied disease/condition - Varied payer - Varied age 	<ul style="list-style-type: none"> - <u>4 of 7 that reported found reduction in hospitalization</u> - <u>1 of 5 that reported found reduction in total overall cost of hospitalization</u>, 1 increase, 1 no difference, 2 mixed of - 7 of 7 that reported found improved clinical quality of care, 3 of 6 that reported found improved patient experience
<p>Gilfillan RJ et al. "Value and the medical home: effects of transformed primary care." American Journal of Managed Care 16.8 (2010): 607-14.</p> <ul style="list-style-type: none"> - Primary care clinics - Medicare Advantage payer - 65+ years old - 4 year pre-post 	<ul style="list-style-type: none"> - Not statistically significant in total cost impact - <u>36% reduction in readmissions</u>
NO POSITIVE FINDINGS ON HOSPITAL ADMISSIONS	
<p>Jackson GL, et al. "The Patient-Centered Medical Home A Systematic Review." Annals of Internal Medicine 158.3 (2013): 169-178.</p> <ul style="list-style-type: none"> - Review of multiple studies - Varied disease/condition - Varied payer - Varied age 	<ul style="list-style-type: none"> - Overall, studies showed some evidence for reduction in ED visits for adults. - <u>No evidence of impact on hospitalization</u> - Small to moderate improvement in preventive services, Improved patient experience
<p>Klitzner TS, Rabbitt LA, Chang RKR. "Benefits of care coordination for children with complex disease: a pilot medical home project in a resident teaching clinic." The Journal of pediatrics 156.6 (2010): 1006-1010.</p> <ul style="list-style-type: none"> - Primary care clinic - Children with complex conditions - Medicaid payer - Over age 1 - Continuously enrolled in Medicaid for 12 months before and 12 months after intervention - 12 month duration 	<ul style="list-style-type: none"> - Statistically significant reduction in average number of ED visits per patient. - <u>No significant change in hospitalization</u> - No significant difference in primary care use

Other articles on Medical Homes from the Annals of Family Medicine:
http://annfammed.org/content/11/Suppl_1

Domain 2, Strategy B. Care Coordination

Project 2.b.ii. Development of co-located primary care services in the ED

Most research on co-location of primary care services is on co-locating in a mental health setting, or mental health services co-locating in a primary care setting. Little research is available on co-locating primary care

services in the ED. Most examples are ED diversion strategies in partnership with FQHCs to help patients who are chronic visitors to the ED for primary care needs, and are not linked to the area's limited safety-net primary care system, establish a medical home. Providing primary care directly in the ED has been criticized as perpetuating the problem "by encouraging patients to go to the emergency room for all of their problems."

AHRQ Innovations Exchange. Connecting Underserved Patients to Primary Care After Emergency Department Visits. See: <http://www.innovations.ahrq.gov/content.aspx?id=3702>

Over 5 years, the program transitioned 55 percent of active enrollees (uninsured or on Medicaid) out of the ED into primary care settings, resulting in a 42% cost reduction in preventable emergency department visits and avoidable hospitalizations

AHRQ Innovations Exchange. Emergency Department–Based Case Managers Throughout County Electronically Schedule Clinic Appointments for Underserved Patients, Allowing Many to Establish a Medical Home. See: <http://www.innovations.ahrq.gov/content.aspx?id=3665>

Case managers in Milwaukee County EDs scheduled 7,088 appointments at FQHCs and other safety-net clinics. Nearly half (47%) of patients scheduled at an FQHC attended their initial appointment. About 46% of patients who kept their first appointment during the second 6 months of 2012 returned for a second appointment within 6 months, suggesting they had made the FQHC their medical home. An evaluation conducted in 2012 showed that patients who kept their scheduled appointments had a 44% reduction in the number of ED visits.

Project 2.b.iv. Care transitions intervention model to reduce 30-day readmissions for chronic conditions

Study	Results
POSITIVE FINDINGS ON HOSPITAL ADMISSIONS	
<p>Peikes D, et al. "How Changes in Washington University's Medicare Coordinated Care Demonstration Pilot Ultimately Achieved Savings." Health Affairs v 31, no. 6, June 2012: 1216-1226.</p> <ul style="list-style-type: none"> - In-person clinic model, or telephonic model - Care coordination fee - Chronic illness - Medicare payer - 65+ years old - Medicare beneficiaries deemed to be at high risk of requiring hospitalization within the next 12 months - 42 months for original model with telephone and in-person for highest risk; 29 months for redesigned in-person only model 	<ul style="list-style-type: none"> - When intervention costs are included, only the savings for the higher-risk group was statistically significant (9.7% savings) - Claims costs declined by 9.6% and 14.8% respectively, for all program enrollees and the higher-risk group - <u>After redesign, hospitalizations among all program enrollees declined by 11.7% compared to control group and 17% for a higher-risk subgroup.</u>
<p>Coleman EA, Parry C, Chalmers S, Min S. "The Care Transitions Intervention: Results of a Randomized Controlled Trial." Arch Intern Med vol 166, sep25, 2006, 1822-1828</p>	<ul style="list-style-type: none"> - <u>Intervention patients had lower re-hospitalization rates and re-hospitalization for same diagnosis as index hospitalization at 30, 90 and 180</u>

<i>Study</i>	<i>Results</i>
<ul style="list-style-type: none"> - Care transitions across settings - Complex conditions - Medicare payer - 65+ years old - Admitted to study hospital with 1 of 11 selected conditions - 6 month duration 	<p>days than comparison group. Results were statistically significant for 90 days and 180 days (same diagnosis)</p> <ul style="list-style-type: none"> - <u>Nonelective hospital costs were lower</u> for intervention patients at 30, 90, and 180 days.
<p>Naylor MD, Brooten DA, Campbell RL, Maislin G, McCauley K, Schwartz JS. "Transitional Care of Older Adults Hospitalized with Heart Failure: A Randomized, Controlled Trial." J Am Geriatr Soc. 2004 52:675-684</p> <ul style="list-style-type: none"> - Hospital setting - Heart failure - Medicare payer - 65+ years old - Hospitalized patients - 52 week duration 	<ul style="list-style-type: none"> - Mean 52-week total costs (including intervention costs) were \$7,636 for intervention group vs. \$12,481 for control group (adjusted for unequal follow-up). - <u>At 52 weeks, re-hospitalizations or deaths were lower in the intervention group (48% vs. 61%).</u> - <u>Fewer hospital days for intervention patients.</u> - Increase in home visits - Increased cost for home visits was offset by savings in hospitalization costs
<p>Sharma G, et al. "Continuity of Care and Intensive Care Unit Use at the End of Life." Arch Intern Med. 2009;169(1):81-86.</p> <ul style="list-style-type: none"> - Hospital setting - Lung cancer - Medicare payer - 66+ years old - Died within 1 year of diagnosis - 10-year retrospective study 	<ul style="list-style-type: none"> - <u>Patients with outpatient-to-inpatient continuity of care had a 25.1% reduced odds of entering the ICU during their terminal hospitalization</u>
<p>Wasson JL. "Continuity of Outpatient Medical Care in Elderly Men: A Randomized Trial." JAMA. 1984;252(17):2413-2417.</p> <ul style="list-style-type: none"> - Veterans administration hospital general - VA payer - 55+ years old - 18 month duration 	<ul style="list-style-type: none"> - <u>Patients randomized to the care continuity group had fewer emergent hospital admissions than those in discontinuity group (20% v. 39%), and shorter average length of stay (15.5 v 25.5 days)</u> - Patients who had been randomized to the continuity group perceived that the providers were more knowledgeable.
NO OR LIMITED POSITIVE FINDINGS ON HOSPITAL ADMISSIONS	
<p>Peikes D, Chen A, Schore J, Brown R. "Effects of Care Coordination on Hospitalization, Quality of Care, and Health Care Expenditures Among Medicare Beneficiaries: 15 Randomized Trials." JAMA. 2009;301(6):603-618</p> <ul style="list-style-type: none"> - Varied – 15 separate demonstration projects - Each care coordination program received monthly fee 	<ul style="list-style-type: none"> - Medicare expenditures in three groups of the 15 were less than control groups. Savings offset care coordination fees for two locations, but for one of these two were too small to be sustainable. - <u>13 of the 15 programs had no significant difference in hospitalization.</u> Of the two programs with significant

Study	Results
<ul style="list-style-type: none"> - Chronic illness (primarily congestive heart failure) - Medicare payer - Mostly 65+ years old - 3 year duration 	<p>changes, one program found fewer hospitalizations per person per year, and the other found more.</p>

Domain 2, Strategy C. Connecting Settings

Project 2.c.ii Expand use of telemedicine in underserved areas

Telemedicine or Telepsychiatry:

Reducing admissions is strongest for ED-based services. Pilots and recent expansions in pediatric telepsychiatry in outpatient settings show positive clinical and access outcomes, especially for ADHD.

ACEP News. ED Telepsychiatry Cuts Admissions, Saves Money. July 2011. See:
<http://www.acep.org/Content.aspx?id=80804>

AHRQ Innovations. Statewide Partnership Provides Mental Health Assessments via Telemedicine to Patients in Rural Emergency Departments, Reducing Wait Times, Hospitalizations, and Costs. See:
<http://www.innovations.ahrq.gov/content.aspx?id=4027>

From March to December 2009 11% of ED patients assessed by a psychiatrist were hospitalized, half the 22% admission rate among similarly cared-for patients in South Carolina EDs not offering this program. Telepsychiatry consultations saved an estimated \$1,400 per mental health patient per year, due primarily to the reductions in hospital admissions.

Szeftel, R. Clinical Use of Telemedicine in Child Psychiatry. Focus. Summer 2008, Vol. VI, No. See:
<http://psychiatryonline.org/data/Journals/FOCUS/1835/foc00308000293.pdf>

This article describes several types of pediatric telemedicine models for child psychiatry.

Home-based telehealth services:

Morrison, J., et al. Telemedicine: cost-effective management of high-risk pregnancy. Managed Care. 2001 Nov;10(11):42-6, 48-9. See: <http://www.ncbi.nlm.nih.gov/pubmed/11761593>

Good evidence for reducing length of stay for deliveries and NICU admissions through telehealth services at home for uterine-activity monitoring for women who've experienced preterm labor.

American Telemedicine Association. Telemedicine's Impact on Healthcare Cost and Quality, April 2013. See:
<http://www.americantelemed.org/docs/default-source/policy/examples-of-research-outcomes---telemedicine's-impact-on-healthcare-cost-and-quality.pdf>

This summary of various recent studies suggests that positive outcomes for home-based telehealth were related to overall disease management and disease self-management programs for chronic conditions such as CHF and diabetes.

Domain 3: Clinical Improvement Projects

Strategy A. Behavioral Health (required)

3.a.i Integration of behavioral health into primary care settings

<i>Study</i>	<i>Results</i>
POSITIVE FINDINGS ON HOSPITAL ADMISSIONS (using net impact on costs as a proxy if hospital admissions not addressed directly)	
<p>Butler M, Kane RL, McAlpine D, et al. "Integration of Mental Health/Substance Abuse and Primary Care." Rockville (MD): Agency for Healthcare Research and Quality (US); 2008 Oct. (Evidence Reports/Technology Assessments, No. 173.) 3, Results.</p> <ul style="list-style-type: none"> - Integration of mental health and primary care - Review of multiple studies - Depression, anxiety disorders, somatizing disorders, ADHD - Varied age - Varied duration 	<ul style="list-style-type: none"> - <u>Evidence of potential savings</u>, but significant barriers remain.
<p>Unützer, Jürgen, et al. "Long-term Cost Effects of Collaborative Care for Late-life Depression." Am J Manag Care 14 (2008): 95-100.</p> <ul style="list-style-type: none"> - Primary care-based collaborative care model for late-life depression in 18 primary care clinics across the US - 1-year stepped collaborative care program: a nurse or a psychologist care manager works in the participant's primary care clinic to support the patient's primary care clinician. - Collaborative approach to defining goals and developing a personalized treatment plan. Treatment plan includes patient preferences, proactive follow-up and outcomes monitoring by a depression care manager, targeted use of specialty consultation, and protocols for stepped care - Randomized control trial of 1801 depressed primary care patients 60 years or older measured long-term health care costs of patients in program 	<ul style="list-style-type: none"> - Over a four year period, IMPACT patients had lower average net costs for their medical care (\$3,363 less) than patients receiving usual care (total healthcare costs were \$29,422 compared to \$32,785 for usual care patients) - <u>Intervention patients had lower health care costs in every cost category: outpatient and inpatient mental health, outpatient and inpatient medical and surgical, pharmacy, and other outpatient costs</u> - Corresponds to an ROI of \$6.50 per dollar spent - At the Kaiser Permanente Southern California site, total health care costs decreased 14% per year during the IMPACT study and an additional 9% for one year post-study
<p>Khatri, Parinda. "Bring it Together: Blending Behavioral Health into Primary Care." Advancing Care Together Learning Collaborative Webinar. 24 October 2012. Embedded Behavioral Health Consultant on the Primary Care Team</p> <ul style="list-style-type: none"> - Real time behavioral and psychiatric consultation available to PCP - Shared decision-making among the team members 	<ul style="list-style-type: none"> - <u>28% decrease in medical utilization for Medicaid patients</u> - 20% decrease in medical utilization for commercially-insured patients - 27% decrease in psychiatry visits - 34% decrease in psychotherapy sessions

<i>Study</i>	<i>Results</i>
NO OR LIMITED POSITIVE FINDINGS ON HOSPITAL ADMISSIONS (using net impact on costs as a proxy if hospital admissions not addressed directly)	
Parthasarathy S, Mertens J, Moore C, et al. "Utilization and cost impact of integrating substance abuse treatment and primary care." <i>Med Care</i> . 2003;41:357-367. <ul style="list-style-type: none"> - Outpatient chemical dependency recovery program - Adult patients being treated for chemical dependencies - 18+ years old - 24 month 	<ul style="list-style-type: none"> - Total medical costs per member-month declined by more for study patients with substance-abused related medical conditions (SAMC) than for control group patients with SAMC. - Decline in ER use for both the study and control groups, with no significant difference between the two groups. - <u>Decline in hospitalization for both the study and control groups, with no significant difference between the two groups.</u>
Druss B, Rohrbaugh R, Levinson C, Rosenheck R. "Integrated Medical Care for Patients with Serious Psychiatric Illness: A Randomized Trial." <i>Archives of General Psychiatry</i> 58 (2001): 861-868. <ul style="list-style-type: none"> - Integration of mental health and primary care - VA mental health clinic - Serious mental illness - 12 month duration 	<ul style="list-style-type: none"> - <u>No net impact on cost</u> - Study group less likely to have ED visit than control group (11.9% vs. 26.2%) - Study group more likely to have primary care visit than control group (91.5% vs. 72.1%) - Study group had greater improvement in health status, more likely to receive recommended preventive services.
Katon W, Russo J, Lin E, Schmittdiel J, Ciechanowski P, Ludman E, Peterson D, Young B, Von Korff M. "Cost-effectiveness of a Multicondition Collaborative Care Intervention." <i>Archives of General Psychiatry</i> 69:5 (2012), 506-514. <ul style="list-style-type: none"> - Primary care clinics - Patients with poorly controlled diabetes, coronary heart disease or both and coexisting depression - 24 month duration 	<ul style="list-style-type: none"> - <u>No statistically significant difference in cost</u> - Study population had better health outcomes and quality of life.

In addition to the information included above, the following publications offer detailed information about a number of integrated care initiatives, including information on cost savings and other efficiency measures:

- Butler, Mary, et al. "[Integration of mental health/substance abuse and primary care.](#)" AHRQ Publication No. 09-E003. (2008).
- Edwards, Barbara C., Susan P. Garcia, and Alicia D. Smith. "[Integrating Publicly Funded Physical and Behavioral Health Services: A Description of Selected Initiatives.](#)" Health Management Associates. (2007).

- Kim, Jung et al. "[SMI Innovations Project in Pennsylvania: Final Evaluation Report](#)." Mathematic Policy Research. (2012).
- Mauer, Barbara J., Dale Jarvis. "[The Business Case for Bidirectional Integrated Care](#)." MCPP Healthcare Consulting. (2010).

Domain 3, Strategy B. Cardiovascular Health

Project 3.b.i. Evidence-based best practices for disease management in high risk/affected populations (adults only)

<i>Study</i>	<i>Results</i>
POSITIVE FINDINGS ON HOSPITAL ADMISSIONS	
<p>Lorig KR, Sobel DS, Stewart AL, Brown BW, Bandura A, Ritter P, Gonzalez VM, Laurent D, Holman HR. "Evidence Suggesting That a Chronic Disease Self-Management Program Can Improve Health Status While Reducing Hospitalization: A Randomized Trial." <i>Medical Care</i> Jan 1999 vol 37:1:5-14</p> <ul style="list-style-type: none"> - Community-based patient self-management education course - <u>Chronic illness</u> - Varied payer - 40+ years old - Chronic lung disease, <u>heart disease</u>, stroke, chronic arthritis or other chronic conditions - 6 month duration 	<ul style="list-style-type: none"> - Estimated ROI at >10 by study authors (no claims data) - Estimated \$820 6-month savings for study patients vs. control patients. Net savings estimated at \$750 per participant accounting for costs of intervention. - No effect on ER use - <u>Reduction in number of admissions and inpatient days.</u> - No significant difference in primary care use - Treatment group had significant improvement in five of the health status variables (self-rated health, disability, social/role activities limitation, energy/fatigue, health distress).
<p>Wheeler JR. "Can a Disease Self-Management Program Reduce Health Care Costs?: The Case of Older Women With Heart Disease." <i>Medical Care</i> June 2003; 41(6): 706-715</p> <ul style="list-style-type: none"> - Hospital setting - <u>Heart disease</u> - 60+ years old - Females - 3 month intervention, with 21-month follow-up 	<ul style="list-style-type: none"> - Cost savings were estimated to exceed program costs by a nearly 5:1 ratio. - Estimated savings of about \$1,800 per participant per year. - No effect on ER use - <u>For heart disease, 41% fewer admissions and 61% fewer inpatient days than control group. In total, 46% fewer hospital inpatient days than control group.</u> - <u>44% decline in inpatient cost for heart-related hospitalizations.</u>
<p>Rice KL. "Disease Management Program for Chronic Obstructive Pulmonary Disease: A Randomized Controlled Trial." <i>Am J Respir Crit Care Med</i>. 2010 Jan 21</p>	<ul style="list-style-type: none"> - Disease management group had a 41% composite reduction in hospitalizations and ED utilization for COPD. - <u>Decrease in hospitalizations for other</u>

<i>Study</i>	<i>Results</i>
<ul style="list-style-type: none"> - Veterans Affairs medical centers - COPD - VA payer - 21+ years old - Patients determined to be at high risk for hospitalization - 1 year duration 	<p><u>cardiac and pulmonary conditions</u></p> <ul style="list-style-type: none"> - Study group participants also had significant improvement in self-reported respiratory health status compared to control group.
NO POSITIVE FINDINGS ON HOSPITAL ADMISSIONS	
<p>Dorr DA, Wilcox AB, Brunner CP, Burdon RE, Donnelly SM. "The effect of technology-supported, multidisease care management on the mortality and hospitalization of seniors." J Am Geriatric Soc. 2008;56 (12):2195-2202.</p> <ul style="list-style-type: none"> - Primary care clinics - <u>Chronic conditions</u> - 65+ years old - 2 year duration 	<ul style="list-style-type: none"> - No significant impact in ER use - <u>No significant impact on total hospitalizations or ambulatory care sensitive hospitalizations.</u> - Reduced mortality
<p>Esposito D, et al 2008. "Impacts of a Disease Management Program for Dually Eligible Beneficiaries." Health Care Financing Review. 2008; 30(1): 27 - 45.</p> <ul style="list-style-type: none"> - Telephonic patient education and monitoring services - \$162 PMPM payment incentive - <u>CHF, diabetes, heart disease</u> - Dual eligible – Medicare and Medicaid payer - 65+ years old - 18 month duration 	<ul style="list-style-type: none"> - Overall, no effect. One subpopulation in one community had 9.6% lower cost - Very small difference in proportion of patients with an ED visit, but no significant difference between treatment and control groups in number of ED visits. - <u>No effect on hospitalization</u> - Participants were more satisfied with care outcomes and provision of needed services such as transportation.
<p>Lin WC, Chien HL, Willis G, O'Connell E, Rennie KS, Bottella HM, Ferris TG. "The Effect of a Telephone-Based Health Coaching Disease Management Program on Medicaid Members with Chronic Conditions." Medical Care vol 50:1:91-98, 2012.</p> <ul style="list-style-type: none"> - Integrated delivery system - <u>Chronic illness</u> - Medicaid payer - 18 – 64 - High-risk patients - 2 year duration 	<ul style="list-style-type: none"> - No effect on total cost - In year 2, ED visits decreased by more for control group than for the study group. - <u>No effect on hospitalization</u>

Domain 3, Strategy C. Diabetes Care

Project 3.c.i Evidence-based best practices for disease management in high risk/affected populations (adults only)

Assessing the Value of the Diabetes Educator

Ian Duncan, et al. *The Diabetes Educator* 2011 37: 638; published online 30 August 2011. See: <http://tde.sagepub.com/content/37/5/638>

People with diabetes in both the Medicare population and the commercial population who had diabetes self-management training (DSMT) encounters provided by diabetes educators in accredited/recognized programs are likely to show lower cost patterns (due to fewer admissions, for which savings exceeded increased outpatient and pharmacy costs) when compared with a control group of people with diabetes without DSMT encounters. People with diabetes who have multiple episodes of DSMT are more likely to receive care in accordance with recommended guidelines and to comply with diabetes-related prescription regimens, resulting in lower cost trends due to lower hospital utilization trends.

Diabetes Prevention Program (see attached Thorpe article)

Positive effects are well-documented on the community-based Diabetes Prevention Program currently administered locally by YMCAs. The prevention program is an intensive lifestyle intervention designed to achieve and maintain at least a 7 percent reduction in body weight among overweight adults who do not yet have diabetes. This intervention has been evaluated through randomized controlled trials at both the individual and community levels. Both levels have produced weight loss of 4.2% to 7% overall and even greater loss among people age sixty and older.

Thorpe KE, Yang Z. Enrolling people with prediabetes ages 60–64 in a proven weight loss program could save Medicare \$7 billion or more. *Health Aff (Millwood)*. 2011;30(9): 1673–9.

Knowler WC, Barrett-Connor E, Fowler SE, Hamman RF, Lachin JM, Walker EA, et al. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med*. 2002;346(6): 393–403.

Diabetes Prevention Program Research Group, Knowler WC, Fowler SE, Hamman RF, Christophi CA, Hoffman HJ, et al. 10-year follow-up of diabetes incidence and weight loss in the Diabetes Prevention Program Outcomes Study. *Lancet*. 2009;374(9702): 1677–86.

Vaughan L. The YMCA Diabetes Prevention Program [Internet]. Chicago (IL): YMCA of the USA; 2010 Jul 24 [cited 2011 Dec 20]. Available from: <http://www.allhealth.org/briefingmaterials/LynneVaughanPresentation--doc-1825.ppt>

Weight loss in the original Diabetes Prevention Program trial generated a 58% reduction in diabetes incidence (relative to a placebo), as well as reductions in high blood pressure and metabolic syndrome. A 10-year follow-up of the original DPP showed that the cumulative incidence of diabetes over a 10-year period was 34% lower among those in the intensive lifestyle intervention, compared to the placebo group.

Study	Results
POSITIVE FINDINGS ON HOSPITAL ADMISSIONS	
<p>Rosenzweig JL , Taitel MS, Norman GK, Moore TJ, Turenne W, Tang P. “Diabetes disease management in Medicare Advantage reduces hospitalizations and costs.” Am J Manag Care. 2010 Jul 1;16(7):e157-62.</p> <ul style="list-style-type: none"> - Telephonic diabetes disease management intervention - “high-risk, high-cost” Medicare Advantage population with <u>diabetes</u> or CAD - 2-year duration 	<ul style="list-style-type: none"> - <u>Intervention group had significantly decreased all-cause hospital admissions and diabetes-related hospital admissions (P <.05).</u> - Intervention group decreased their all-cause total medical costs by \$985 per member per year (PMPY) compared with a \$4547.06 PMPY increase in the comparison group (P <.05). - All clinical measures significantly improved (P <.05) in the intervention group.
<p>Sommers LS, Marton KI, Barbaccia JC, Randolph J. "Physician, nurse, and social worker collaboration in primary care for chronically ill seniors." Arch Intern Med. 2000; 160(12):1825-1833.</p> <ul style="list-style-type: none"> - Primary care setting - <u>Chronic conditions</u> - Medicare payer - 65+ years old - 2 year duration 	<ul style="list-style-type: none"> - Average annual per-patient savings estimated at \$90, net of program cost. - No significant change in year 1 on hospitalization. In year 2, intervention patients had fewer admissions than control group. - No significant change in year 1 on readmissions. <u>In year 2, intervention patients had fewer readmissions than control group.</u> - No significant change in year 1. In year 2, intervention patients had fewer visits than control group. - Improvements in self-reported health and quality of life.
<p>Lorig KR, Sobel DS, Stewart AL, Brown BW, Bandura A, Ritter P, Gonzalez VM, Laurent D, Holman HR. "Evidence Suggesting That a Chronic Disease Self-Management Program Can Improve Health Status While Reducing Hospitalization: A Randomized Trial." Medical Care Jan 1999 vol 37:1:5-14</p> <ul style="list-style-type: none"> - Community-based patient self-management education course - <u>Chronic illness</u> - Varied payer - 40+ years old 	<ul style="list-style-type: none"> - Estimated ROI at >10 by study authors (no claims data) - Estimated \$820 6-month savings for study patients vs. control patients. Net savings estimated at \$750 per participant accounting for costs of intervention. - No effect on ER use - <u>Reduction in number of admissions and inpatient days.</u> - No significant difference in primary care use - Treatment group had significant

<i>Study</i>	<i>Results</i>
<ul style="list-style-type: none"> - Chronic lung disease, heart disease, stroke, chronic arthritis or <u>other chronic conditions (including diabetes)</u> - 6 month duration 	<p>improvement in five of the health status variables (self-rated health, disability, social/role activities limitation, energy/fatigue, health distress).</p>
NO POSITIVE FINDINGS ON HOSPITAL ADMISSIONS	
<p>Dorr DA, Wilcox AB, Brunner CP, Burdon RE, Donnelly SM. "The effect of technology-supported, multidisease care management on the mortality and hospitalization of seniors." J Am Geriatric Soc. 2008;56 (12):2195-2202.</p> <ul style="list-style-type: none"> - Primary care clinics - <u>Chronic conditions</u> - 65+ years old - 2 year duration 	<ul style="list-style-type: none"> - No significant impact in ER use - <u>No significant impact on total hospitalizations or ambulatory care sensitive hospitalizations.</u> - Reduced mortality
<p>Esposito D, et al 2008. "Impacts of a Disease Management Program for Dually Eligible Beneficiaries." Health Care Financing Review. 2008; 30(1): 27 - 45.</p> <ul style="list-style-type: none"> - Telephonic patient education and monitoring services - \$162 PMPM payment incentive - CHF, <u>diabetes</u>, heart disease - Dual eligible – Medicare and Medicaid payer - 65+ years old - 18 month duration 	<ul style="list-style-type: none"> - Overall, no effect. One subpopulation in one community had 9.6% lower cost - Very small difference in proportion of patients with an ED visit, but no significant difference between treatment and control groups in number of ED visits. - <u>No effect on hospitalization</u> - Participants were more satisfied with care outcomes and provision of needed services such as transportation.
<p>Lin WC, Chien HL, Willis G, O’Connell E, Rennie KS, Bottella HM, Ferris TG. "The Effect of a Telephone-Based Health Coaching Disease Management Program on Medicaid Members with Chronic Conditions." Medical Care vol 50:1:91-98, 2012.</p> <ul style="list-style-type: none"> - Integrated delivery system - Chronic illness - Medicaid payer - 18 – 64 - High-risk patients - 2 year duration 	<ul style="list-style-type: none"> - No effect on total cost - In year 2, ED visits decreased by more for control group than for the study group. - <u>No effect on hospitalization</u>

Domain 3, Strategy D. Asthma

3.d.i. Development of evidence-based medication adherence programs (MAP) for asthma in community settings

3.d.ii. Expansion of asthma home-based, self-management

3.d.iii. EBM guidelines for asthma management

Self-management education and regular practitioner review for adults with asthma. See:

<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD001117/abstract>

Self-management education reduced hospitalizations (relative risk 0.64, 95% confidence interval 0.50 to 0.82)

Effects of educational interventions for self-management of asthma in children and adolescents: systematic review and meta-analysis. See: <http://www.bmj.com/content/326/7402/1308>

Education in asthma was associated with improved lung function (standardized mean difference 0.50, 95% confidence interval 0.25 to 0.75) and self-efficacy (0.36, 0.15 to 0.57) and reduced absenteeism from school (-0.14, -0.23 to -0.04), number of days of restricted activity (-0.29, -0.33 to -0.09), and number of visits to an emergency department (-0.21, -0.33 to -0.09).

Domain 3, Strategy F. Perinatal

3.f.i Increase support programs for maternal and child health;

CMS. Strong Start for Mothers and Newborns Initiative. See: <http://innovation.cms.gov/initiatives/Strong-Start/>

Describes models CMS is funding to test improvements in birth outcomes and increase the rate of full-term deliveries (not before 39 weeks)

Domain 4: Population-wide Projects

Strategy B. Prevent Chronic Diseases

Project 4.b.ii Implement a community strategy to improve cancer screening

CDC. Gynecological cancers. See: <http://www.cdc.gov/cancer/cervical/index.htm>

Highlights cervical cancer as one of the most preventable cancers due to effective treatment when detected early, through the success pap smears (HPV vaccine also helps prevent cervical cancer)

Cancer screening practices among women in a community health center population. See:

<http://psycnet.apa.org/psycinfo/1997-07271-003>

Highlights characteristics associated with cancer screening compliance (pap tests, mammography, clinical breast exams) among low income women served by a community health center.

Strategy D. Promote Healthy Women, Infants and Children

4.d.i Reduce premature births

CMS. Strong Start for Mothers and Newborns Initiative. See: <http://innovation.cms.gov/initiatives/Strong-Start/>

Describes models CMS is funding to test improvements in birth outcomes and increase the rate of full-term deliveries (not before 39 weeks).