Southern California CSU DNP Consortium

California State University, Fullerton
California State University, Long Beach
California State University, Los Angeles

UTILIZATION OF PRECEDE-PROCEED MODEL IN EVALUATING A NURSE PRACTITIONER-RUN GROUP MEDICARE ANNUAL WELLNESS VISIT

A DOCTORAL PROJECT

Submitted in Partial Fulfillment of the Requirements

For the degree of

DOCTOR OF NURSING PRACTICE

By

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ABSTRACT

The purpose of this DNP project was to perform a process evaluation of a quality improvement project, nurse practitioner-led group Medicare Annual Wellness Visit (AWV), using the PRECEDE-PROCEED Model. The Affordable Care Act (ACA) became a law in the United States in 2011. Under the ACA, Center for Medicaid and Medicare Services (CMS) ceased payment for annual physical examinations. Instead, CMS will reimburse for Annual Wellness Visits (AWV) with personalized preventive plan services (PPPS) without cost sharing to patients effective January 1, 2012. Health plans foresaw an increased demand for AWV with PPPS by large numbers of new insurance enrollees. A large health maintenance organization anticipated access problems and proactively determined that group Medicare AWV might avert access problems. Senior (65+) Kaiser Permanente (KP) Health Plan members covered by Medicare Part B were the target population for group visits. Group AWVs were implemented in the ambulatory care clinic at KP Medical Center in Panorama City, California. This center serves a moderately diverse patient population with a large percentage of Latinos and Filipinos.

The PRECEDE-PROCEED MODEL was used in the evaluation of the planning, implementation, and outcomes of these nurse practitioner-led group visits. Findings indicate that although the steps of the PRECEDE-PROCEED model had been followed, patient input and involvement was not solicited in the initial phase. Three screening tests,
(i.e., Timed Up and Go Test, Patient Health Questionnaire-9, and Clock Drawing Test) were chosen at the regional level as quality indicators for the AWVs. Since 2013, completion rates of these screening tests have been higher in patients seen in group AWVs versus individual AWVs; Panorama City typically had higher completion rates of these indicators, as compared to 12 other medical centers within the region, attributable to the group AWVs. During this period, documented patient evaluation for group AWVs showed high patient satisfaction with anecdotes of improved patient care experiences. Cost calculations indicate that cost savings occur when groups have at least six patients. Other cost savings estimated come from potential prevention of fall injuries among high risk patients referred to physical therapy for gait, balance, and muscle strength training.
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INTRODUCTION

On March 23, 2010, the Patient Protection and Affordable Care Act 2010 HR3590 or Affordable Care Act (ACA) became the new health care reform law in the United States. Under the ACA Final Rule Section 4103, Center for Medicaid and Medicare Services ceased payment for annual physical exams, effective January 1, 2012. Instead, CMS started reimbursement for Annual Wellness Visit (AWV) with personalized preventive plan services (PPPS). Health plans foresaw an increased demand for AWV with PPPS appointments by a large number of new insurance enrollees in the Health Reform Law. A large health maintenance organization anticipated access problems and proactively designed a group Medicare Annual Wellness Visit (AWV) to avert access problems.

At Kaiser Permanente, Panorama City, it was estimated that in 2013, approximately 3300 Medicare recipients would be eligible for AWVs with PPPS. In calculating the number of 40-minute AWV slots for 3300 members, 6600 appointment slots would be needed in Internal Medicine/Family Practice Department, based on 20 minutes per slot. Given the scarcity of resources that already existed in the department, meeting this high demand for access caused great concerns among physicians and department administrators. One strategy recommended to address this issue and improve health outcomes was the implementation of group visits (Agency for Healthcare Research and Quality, 2015). Group visit (GV) was first implemented in 1991, as an efficient approach in addressing health conditions and reducing healthcare utilization among elderly patients (Beck et al., 1997). Typically, GVs include medical care, patient education, and patient engagement and empowerment. Group visits, later called shared
medical appointments (SMAs), have been implemented throughout the United States to improve access, health service utilization, health care cost, and outcomes (Booth, Cantrell, Preston, Chambers, & Goyder, 2015). At this time, empirical data is lacking on successful implementation of group Medicare wellness visits run by nurse practitioners (NPs).

In 2012, Kaiser Permanente Medical Center piloted a NP-run group Medicare AWV in Panorama City, California. Senior (65+) Kaiser Permanente (KP) Health Plan members covered by Medicare Part B were the target population for group visits. The group AWV was designed to maximize utilization of resources in providing high quality care that meets the increased demand for wellness visits as required by the CMS. The group AWV includes most of the components of an individual patient visit with a provider, plus group education and interaction with an educator or facilitator. Vital signs (blood pressure, pulse, weight, height, and body mass index [BMI]) are taken and recorded by a nurse. Health questionnaires and medication lists are completed by patients. Providers reconcile medications that patients are taking with the institution record. Each visit takes 90 to 120 minutes; groups consist of eight to 12 patients with one or more chronic conditions; such as hypertension (HTN), prediabetes, diabetes mellitus (DM), heart disease, heart failure (HF), arthritis, or depression.

The group AWV is a collaborative medical appointment with the nurse practitioner, health educator, and nurse (medical assistant or licensed vocational nurse). A medical social worker is available to see any patient who needs further assessment and intervention for depression or social issues.
To improve completion of recommended preventive services, both the nurse practitioner and health educator utilize motivational interviewing (MI) techniques. Motivational interviewing is integrated in the group visit to foster engagement of the Medicare recipients in the discussion of healthy aging, goal setting, and self-management. In a systematic review, MI was found to increase the likelihood of producing positive outcomes in medical care settings (Lundahl et al., 2013; Miller & Rollnick, 2012).
BACKGROUND

Medicare Wellness Visit

Section 4103 of the ACA Final Rule Section states that effective January 1, 2012, CMS will no longer pay for annual physical exams. Instead, CMS will reimburse for AWV with PPPS, as specified under provision IV of the ACA. There are two types of AWV and both must include PPPS for Medicare recipients. The first type is an initial wellness visit and the second is an annual wellness visit (Medicare.gov, n.d.).

Part B Medicare recipients are eligible to have an AWV without cost sharing within the first 12 months of eligibility. After that initial visit, AWV visits are covered once every 12 months. The initial AWV includes a review of medical, personal, and social history related to health and health risk factors, medication history, functional ability and safety, as well as screening for depression and cognitive impairment. It also must include education and counseling about preventive services, specific screenings, flu and pneumonia immunizations, and referrals to specialists, as needed. Additional assessments covered include height, weight, a calculation of BMI, and blood pressure (BP) measurement. At the end of the visit, the Medicare beneficiary receives a screening schedule and/or a checklist for appropriate preventive services to be implemented over the next five to ten years (Medicare.gov, n.d.).

Providers eligible to perform and be reimbursed for performing an AWV include doctors of medicine or osteopathy, physician assistants, NPs, and/or clinical nurse specialists. A non-physician professional or team can only receive Medicare reimbursement for an AWV when working under direct supervision of a physician. However, a nurse practitioner can provide and receive reimbursement for AWV services
and additional reimbursements for other medical conditions addressed during the same visit (e.g., atherosclerosis, HTN, DM, etc.) without requiring direct medical supervision.

**Physical Examination vs. Medicare Wellness Visit**

Traditionally, Medicare and health insurance paid for physical examinations that included diagnosis and treatment, with limited preventive services covered (e.g., mammography and cervical cancer screening) (Dewilde & Russel, 2004). In 2011, the focus of reimbursed services changed from solely reimbursing for physical examination to reimbursement for preventive visits. In the “Evidence Brief: Role of the Annual Comprehensive Physical Examination,” Bloomfield and Wilt (2011) reported that “comprehensive routine physical examinations are not recommended for the asymptomatic adult” (p. 6) and when preventive services are provided, patients are more likely to receive the care required for better health outcomes.

The preventive services included in the AWV are based upon the U.S. Preventive Services Task Force (USPSTF) recommendations. Farley, Dalal, Mostashari, and Frieden (2010) developed two mathematical models to estimate the health benefits resulting from increased use of clinical preventive services and reported that using these services could prevent 50,000 to 100,000 deaths per year in people 79 years and younger. In another study, Maciosek, Coffield, Flottenmesch, Edwards, and Solberg (2010) estimated that using these services could have prevented over two million deaths in 2006; in areas with 100,000 residents, they posited that about 800 people would live longer without increasing health care spending. One of the strengths of the AWV program is the yearly sensory assessment for vision and hearing problems, risk for fall, memory impairment,
and depression. Early detection can facilitate early diagnosis and treatment, which could potentially lower cost and improve outcomes.

**Federal Health Reform**

The ACA expanded health insurance coverage to millions of Americans. Two key provisions in the ACA emphasized prevention and wellness and curbing increasing healthcare costs. The ACA Title IV provided the impetus to increase access to healthcare and remove barriers to clinical preventive services. To encourage more Medicare senior recipients to utilize clinical preventive services, Medicare eliminated cost-sharing for covered preventive services that are recommended by the USPSTF.

**Benefits to Medicare Beneficiaries**

For Medicare beneficiaries, Medicare coinsurance and Part B deductibles do not apply to the AWV. Title IV notes that the following are the most effective preventive services recommended for people 65 years old and older:

- Screening for diabetes, high cholesterol, osteoporosis, glaucoma, abdominal aneurysm, safety risk, and cognitive impairment
- Cancer screening, such as colorectal cancer, breast cancer, and prostate cancer
- Immunizations for influenza, pneumonia, and herpes zoster virus
- Orders for laboratory tests, electrocardiograms, bone mass measurement, and counseling for weight loss prevention and tobacco cessation

(Medicare.gov, n.d.).
Benefits to Health Plans and Providers

For health plans and providers, increased performance of Medicare AWVs with PPPS leads to more reimbursements. Therefore, performing more AWVs can generate more revenue for health insurance providers such as Kaiser Permanente, an organization with 40% of its members being Medicare recipients. Certain medical diagnoses are reimbursable yearly by CMS; however, this is possible only when the diagnosis codes are updated. Some healthy patients who have chronic conditions under control may not see their primary care provider yearly. However, patients come to the AWV and when providers review their chronic conditions, the providers may update the diagnosis codes and receive additional reimbursement from CMS.

In 2011, as a major provider of Medicare services, Kaiser Permanente expected a high volume of new enrollees and feared problems with access. The group AWV was proactively developed to alleviate the anticipated increased demand for access. In the past, appointments for physical exam visits were 40 minutes with a primary care provider (PCP). Since 2012, patients requesting AWVs were offered appointments with either their PCP (20 minutes with a nurse and 40 minutes with PCP), or a 120-minute group AWV with a NP and educator (combined private individual visit and group education).
Motivational Interviewing

Chronic conditions are prevalent among Medicare beneficiaries. From 21.8% in 2001, these conditions have increased to 26% in 2010 (Ward, Schiller, & Goodman, 2014). Most beneficiaries have two or more chronic conditions. Not only do chronic conditions increase physical disability and mortality, but they also increase healthcare costs from hospitalizations and emergency room utilization. To curb the rising costs of chronic conditions, patients need to be informed, motivated and engaged as partners in their care. Maximizing use of MI is one strategy that improves self-care management through patient activation (AHRQ, 2012; Mayberry, Willock, Boone, Lopez, Qin, & Nicewander, 2010).

Motivational interviewing is an evidence-based, goal-oriented, and person-centered approach in counseling medical patients. The provider assists patients to address ambivalence and fear of change, elicit internal motivation and change talk resulting in the desired behavioral change (Shorey, Martino, Lamb, LaRowe, & Santa Ana, 2015). The use of MI enhances a counselor’s effectiveness in addressing motivation issues such as patient engagement, activation, or resistance to change (Resnicow & McMaster, 2012).

The 5A’s of MI gives health care providers a structured approach to engage patients in their care. The 5As are: (1) Assess the behavior, (2) Advise by giving a clear message of encouragement, (3) Agree with patient’s goals, (4) Assist by providing information, skills and other support, and (5) Arrange for referral or follow-up (AHRQ, 2012). Evidence of the effectiveness of MI in producing positive outcomes is robust in patients with chronic conditions and in different medical care settings (Lundahl et al., 2013; Moral, Torres, Ortega, & Rejano, 2015).
Purpose Statement

The purpose of this Doctor of Nursing Practice (DNP) project was to perform and describe a process evaluation of a nurse practitioner-run Group Medicare AWV, comparing results to individual AWVs to ensure equality of care in one site. The process evaluation was based on the PRECEDE-PROCEED model (Green & Krueter, 2005).

Project Objectives

The objectives of this doctoral project were to:

- Evaluate the implementation process of the group Medicare AWV using the PRECEDE-PROCEED model, a theoretical framework for health program planning.
- Describe program strengths and areas for improvement and make recommendations for further improvement of the group Medicare AWV.
- Compare performance and completion of quality measures in the group Medicare AWV versus the individual AWV to assure equality of care delivery.

Theoretical Framework - PRECEDE-PROCEED Model

Green and Kreuter (2005) introduced the PRECEDE-PROCEED Model (PPM), a comprehensive framework to assist health promotion efforts in public health. Precede and Proceed are acronyms. The first part of the model is PRECEDE, which stands for Predisposing, Reinforcing and Enabling Constructs for Educational/Environmental Diagnosis and Evaluation. These are the diagnostic and assessment components of the model. During these phases, information from patients and from an organization or institution is utilized to identify priorities and health goals. The next step is to generate ideas and design strategies to help patients maintain health and prevent disease. The
PROCEED represents Policy, Regulatory, and Organizational Constructs in Educational and Environmental Development. During this phase of the model, interventions and evaluation ensues.

Precede-Proceed is a complex planning model that makes program planners keep the final objective in mind and work backwards to achieve program goals. It can be used with other models in order to fit the research context (Green & Krueter, 2005). The model has been widely used, tested, and found valuable in program planning in public health, schools, and the community. It is valuable in developing a coherent plan that addresses issues at hand. PRECEDE answer questions pertaining to the quality of life, health, behavioral, and environmental problems; target population, and causes and determinants of health. PROCEED answer questions regarding barriers, policies, regulation needed to be addressed to make a program work and facilitates development of implementation and evaluation plan. Utilization of this model provided the framework in describing and evaluating the different phases of an actual program that was implemented at Kaiser Permanente: nurse-practitioner-led Group AWVs for Medicare recipients.

As seen in Figure 1, the PRECEDE-PROCEED model has eight phases (Green & Kreuter, 2005). In Phase 1: Social assessment, a needs assessment is done, which includes identification of social and health problems that affect the quality of life of the community of interest, resource availability, as well as stakeholder readiness to change. Primary data, such as demographics, health status, health needs and risk factors are gathered using questionnaires, interviews, focus groups and appropriate secondary data from government agencies, clinics, hospitals, and literature.
In Phase 2, epidemiological assessment identifies the health priorities of stakeholders and their behavioral and environmental determinants. In this phase, the importance of personal behavior, social norms, and environmental factors influencing health problems among the target population are collected. The data are used to identify health priorities and create indicators for evaluation. Data can be obtained from vital statistics, health surveys and medical or administrative records.

In Phase 3, educational and ecological assessments are performed. Predisposing, enabling, and reinforcing factors affecting behaviors and attitudes are identified to facilitate planning for interventions that can initiate and sustain the change process. Predisposing factors that must be considered include patient knowledge and beliefs of
personal health risks and health needs, as well as their value of health, skills, attitudes toward behavioral change, and confidence in motivation to change. Reinforcing factors are elements that increase patient motivation and desire to continue or repeat a recommended behavior. These factors encompass home and work environment, healthcare providers’ attitudes, and policy-makers’ attitudes. Enabling factors are antecedents to change that allow a motivation or policy to be realized. These include resources in the home, community, and the organization; for individuals, enabling factors include knowledge of the disease, health-related skills, and healthcare providers’ attitude and MI skills. Educational curriculum is developed with the goal of increasing patient knowledge, skills and abilities to improve or manage health.

Phase 4 is comprised of administrative and policy assessments (e.g., organizational policies, budget, staff requirements and availability, economic, other barriers, and healthcare regulations). During this phase, assessment of resources, management support, development and allocation of budget for staff, venue, scheduling, and clinic set-up are performed. The compatibility of the program goals and objectives with those of the organization and administration is assessed. Program components are selected and aligned according to the administrative assessment.

Phase 5 is the implementation phase and initiation of the PROCEED component of the framework. A Gantt chart, which shows activities in horizontal lines and progress in relation to time in vertical bands, may be developed. Pilot testing could be done during this phase. Educational strategies for health promotion include theory-based risk reduction education, printed materials, health education classes, and online resources.
Phases 6, 7, and 8 are the evaluation components of the model. Phase 6 denotes the process evaluation. This phase establishes whether the implemented strategy met the program objectives as planned. Phase 7 is the impact evaluation and demonstrates if the program resulted in deeper planned changes. Usually this is done by measuring changes over extended periods of time, which can be costly. Lastly, Phase 8 is the evaluation of the outcomes. It indicates what outcomes have changed and how the program has affected the participants’ quality of life.
REVIEW OF LITERATURE

Overview

As seen in Table 1, a comprehensive search of literature was conducted using the following electronic databases: Cumulative Index of Nursing and Allied Health Literature (CINAHL) and PubMED. Key words included group visits, shared medical appointments, chronic conditions, and annual wellness visit. In the review, study designs included randomized controlled studies and controlled clinical trials. Articles selected for the review were conducted between 2010 and 2016, peer reviewed, and taken from scholarly journals. Only English publications were included. Bibliographies of studies were searched for related articles. A second literature review was conducted using the Mesh term motivational interviewing in CINAHL and PubMED. Articles extracted were peer reviewed and published between the dates of 2010 and 2016 (see Table 2). Evidence types included all study types, systematic reviews, and meta-analysis studies. This provided a comprehensive literature search that documents evidence about outcomes from group visits and motivational interviewing.

Evidence Synthesis for Group Visits

The Literature Gap

Results from the literature search found that most of the scholarly articles on group visits were published before 2010. Most studies on group visits included samples of patients with diabetes mellitus and other chronic diseases. Only two articles specific to group Medicare AWVs were found, one describing visits conducted by physicians and another by a pharmacist.
Table 1.

*Table of Evidence: CINAHL Search*

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*Note. Articles excluded were based on title and relevance to project topic.*

Table 2.

*Table of Evidence: PubMed Search*

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*Note. Articles excluded were based on title and relevance to project topic.*
Health Care Need Addressed by the Group Visit

When the ACA became a law, enhanced patient-centered access became a major focus for health plans, including a large medical group in Southern California. It was also projected that the increase in the ageing population in the United States would result in an increase in patients with chronic conditions requiring primary care visits, potentially causing more problems with health care access (Suzman, Beard, Boerma, & Chatterji, 2011). Access requires the availability of health care providers, organizations, institutions, and systems to meet the health care needs of the population and the ability of individuals to obtain and utilize economical and satisfactory health services (Levesque, Harris, & Russel, 2013).

In a survey documenting wait times for physician appointments for Medicaid and Medicare recipients (Miller, 2014), the average cumulative wait time for new patients to be seen by physicians was 10 to 28 days. Bodenheimer and Pham (2010) reported a 17% increase in 2006 to 2008 of Medicare beneficiaries who had problems obtaining a primary care physician. In addition, 22% of beneficiaries and 31% of privately insured patients had unwanted delays in obtaining routine care appointments.

A feasible solution to increased demand and access issues in the primary care setting is the group visit. The capacity to see more patients in two or more hours by a provider would also relieve the increased pressure for productivity. Group visits reduce health care utilization (repeat hospital admissions, fewer emergency room and sub-specialist visits) and increase both patient and provider satisfaction (AHRQ, 2015).
**Effectiveness of Group Visits**

Group visit or SMA is one approach to improve access and efficiency, improve quality of care and outcomes, and reduce health service utilization and costs, especially in the context of increased prevalence of chronic conditions (Noffsinger, 2009). Patient education is a key component of GVs. Patient education along with patient engagement can improve self-management (Beebe & Schmitt, 2011) and health outcomes (Quinones, Richardson, Freeman, O’Neil, & Kansagara, 2012) among patients with chronic diseases. Chronic diseases, many of which are preventable, are the main drivers of increasing health care cost (Center for Disease Control and Prevention [CDC], n.d.). Group visit is a cost effective approach in chronic condition management because it integrates the six components of the chronic condition model (i.e., self-management support, delivery system design, decision support, clinical information systems, organization of health care, and the community).

Multiple studies have provided evidence for the effectiveness of group visits (Dickman, Pintz, Gold, & Kivlahan, 2012; Edelman, McDuffie, Oddone, Gierisch, & Williams, 2012; Smith et al., 2014). For patients, the benefits include prompt access, enhanced patient education, patient satisfaction, and improved chronic disease management (Edelman et al., 2012; Heyworth et al., 2014; Palaniappan, Muzaffar, Wang, Wong, & Orchard, 2011) and better quality of life (QOL; Booth et al., 2015; Dorsey et al., 2011; Edelman et al., 2012). For providers who have high-volume patients and find themselves giving repetitive information, increased productivity and provider satisfaction have been documented (Beck et al., 1997; Clancy, Dismuke, Magruder, Simpson, & Bradford, 2008; Heyworth et al, 2014; Seesing, Groenewoud, Drost, van Engelen, & van
thus, group visits can simultaneously enhance access, increase provider productivity, reduce utilization and costs, and improve health outcomes while leading to patient and provider satisfaction.

Enhanced Access to Care

Some studies have shown similar health outcomes between participants of group visits and usual care, along with the ability for providers to see multiple patients at one time (Cole, Boyer, Spanbauer, Spraque, & Bingham, 2013; Remick & Remick, 2014). In a study of 1842 patients, Heyworth et al. (2014) examined patient experiences for both GV and usual care. The GV was 90 minutes long, with 10 patients in each group; each patient was seen individually by a primary care internist and participated in a group session with another team member (social worker, psychologist, or NP). Findings among GV patients were the following: more timely access to care (OR 1.49; 95% CI, 1.21-1.92, \( p < .001 \)), more describing office hours as convenient (OR 1.22; 95% CI, 1.02-1.45; \( p < .03 \)), and less wait for lab tests (OR 1.49; 95% CI, 1.21-1.92; \( p < .03 \)). Similarly, Kaider-Person et al. (2006) reduced the average waiting period of 50 to 57.7 days to 25 days (\( p = .06 \)) in a large bariatric clinic while maintaining high patient satisfaction.

Health Outcomes

Although some studies have conflicting results, most support health outcomes among patients with chronic diseases, particularly DM, seen by providers in GVs that are consistent with or better than those receiving individual visits. In a systematic review, Edelman, Gierisch, McDuffie, Oddone, and Williams (2015) reported the greatest effect of the GV was in decreasing A1C of patients with diabetes (mean difference -0.55; 95% CI, 95-1.00, \( p < .01 \)) and maintaining high patient satisfaction.
CI) and SBP (mean difference -5.22; \( p < .00001 \)); they found non-significant improvements in total cholesterol (\( p = .45 \)) and LDL-C (\( p = .17 \)).

Similar findings were found by Booth et al. (2015) in another systematic review on GVs implemented among patients with chronic conditions. In addition, a systematic review found that the improvement in A1C in GV participants was modest and short-term (Quinones et al., 2012). Limitations in the studies included inconsistency in the results of GVs and highly varied methodologies across studies (Quinones et al., 2012).

Among patients with comorbid DM and HTN, GVs have also shown to improve biophysical measures. Crowley et al. (2014) evaluated the effect of GV on 239 veterans with poorly controlled DM2 (A1c > 7.5) and HTN (>140/90). Treatment intensification occurred in 52% of the GV patients vs. 37% (\( p = 0.04 \)) in the control group. The GV patients achieved lower total cholesterol (14.2 mg/dl, \( p = .01 \)) and lower LDL-C (9.2 mg/dl, \( p = .02 \)) than the control group; no difference in triglycerides and HDL-C were found. Similarly, a systematic review of 26 older studies on group visits for diabetes in the US and Europe found evidence in small to medium-size trials that GVs significantly reduced A1C (-.46%, 95% CI -.80% to -.31%) compared to usual care (Housden, Wong, & Dawes, 2013). These authors found no difference in SBP or DBP, weight, and BMI across studies. They also found that the duration of treatment, but not the frequency of group visits, had a direct effect on A1C. A year increase in the duration of treatment has an effect size of 0.25 or an A1C reduction of one quarter of 1%. Housden et al. (2013) concluded that the small reduction in A1C would result in improvement in clinical outcomes (i.e., less microvascular complications, myocardial infarction and risk of death from diabetes).
Another health benefit of GV was enhanced physical activity which should lower cardiovascular risk. Liu et al. (2012) found that among patients with diabetes, who participated in GV, physical activity duration was increased (>40 minutes per week, \(p = .001\)), SBP was reduced (-3.72, \(p = .04\)), fatigue improved (\(p = .001\)), and patients reported less illness intrusiveness (\(p < .05\)) as compared to usual care. Another RCT on GV among patients with hypertension in China found GV reduced DBP (\(p = .047\)); however, the effect was not significant on SBP (\(p = .621\); Junling, Yang, Junming, Pinpin, & Hua, 2012).

In the Quinones et al. meta-analysis (including 81 publications) on group visits among patients with chronic diseases (2012), outcome measures included were patient self-efficacy, risk of falls in patients with history of falls, exercise capacity decline in COPD, BP control in HTN, pain coping skills in patients with arthritis. Authors found consistent, fair-to-good quality evidence that GV was associated with modest improvement in A1c, although this effect was not long-term. The component of GV found to be associated with intervention effects was education. They concluded that (1) GV may improve short and medium-term health measures and (2) GV may be equally effective as individual education visits and a reasonable alternative, but not a sole alternative for educating patients with chronic disease.

Contrary to these findings were the results of a systematic review by Riley and Sorensen (2010) who only reviewed studies in diabetes. Here, GV failed to demonstrate consistent improvement in A1C, lipids or BP, although GV for DM patients may reduce cost and some clinical outcomes. There is evidence that GV participants can achieve the same health outcomes as patients seen individually (Cole et al., 2013; Quinones et al.,
2012). In addition, among patients with neuromuscular disease (i.e., Parkinson disease), the effects of GV was not different than UC on PD symptoms, \( p = .99 \); depression, \( p = .23 \); and cognition, \( p = .14 \) at 12 months (Dorsey et al., 2011). This study showed health outcomes may be equivalent in GV and UC.

**Effect of GVs on Weight Loss**

In a clinical trial of GV among patients with hypertension in China, Junling et al. (2012) found GV reduced BMI (\( p = .168 \)) and DBP (\( p = .047 \)). The effectiveness of GV was also found in a study of a 90-minute group for weight loss held every other week with a physician (Palaniappan et al., 2011). Participants were mostly women (76% vs. 64% men, \( p < .05 \)) and older (mean, 52.4 years, \( p < .01 \)). The GV participants had a significant mean BMI percent change and weight loss (1%, -2.0 lbs), while the comparison group had 0.8% weight gain, 1.4 lbs.

**Effect of GVs on Quality of Life**

Findings about QOL varied among studies of GVs for different patient populations. Booth et al. (2015) found GVs significantly improved HRQOL in DM (\( p = .04 \)) and in older adults (\( p = .002 \)). Edelman et al. (2012) also reported GVs for chronic medical conditions were associated with increased HRQOL (\( p = .02 \)) and that effects were greater when disease-specific measures were used (\( p < .00001 \)).

However, not all studies reported improvement in HRQOL. Housden et al. (2010) measured the effect of GV on HRQOL of GV participants with DM and found no difference in QOL. Likewise, among veterans with poorly controlled DM2, QOL was improved, but findings were not statistically significant (-29.30, 95% CI - 60.64 to 2.05). Dorsey et al. (2011) found no difference on the primary outcome: QOL measured 12
months after GV among patients with neuromuscular disease. These researchers concluded that although GV did not improve HRQOL in patients with Parkinson’s Disease, GV may be a feasible method of providing care to individuals with PD and it may be an alternative or complementary method of care delivery for some patients and physicians (Dorsey et al., 2011).

**Effects of GVs on Patient Satisfaction**

In addition to GV improving participants’ HRQOL, there is also evidence that GV participants rate GV care the same or better than usual care. An evaluation of GV on patient satisfaction showed that post laparoscopic adjustable gastric banding (LAGB) patients had an overall mean satisfaction rating increase of $4.13 \pm 0.163$ ($p < 0.01$) (on a scale of 1 to 5, 1 = very poor and 5 = excellent) compared to preconceptions before the clinic visit ($3.59 \pm .175$; Seager et al., 2012). Heyworth et al. (2014) performed an exploratory analysis of patients who attended GVs vs. usual care from 2008 to 2010 in a multispecialty group. They found overall satisfaction with GV vs. usual care was higher ($OR$ 1.26; 95% $CI$, 1.05-1.52). In addition, patients who had previously attended GVs had higher satisfaction rate as compared to those who attended for the first time.

GVs improved patient satisfaction over usual care in both small and large settings. In a large multispecialty group practice, GVs improved overall patient satisfaction ($OR$ 1.26, 95% $CI$ 1.05 - 1.52, $p = < 0.01$) and patient-centered care (PCC) experiences (Heyworth et al., 2014). In a small study of a physician-run annual group wellness visit for elderly, Kainkaryam (2013) reported 95% (18/19) of patients were highly satisfied, strongly agreeing that they would recommend GVs.
Remick and Remick (2014) switched from individual visits to group visits in order to improve access in an outpatient psychiatric clinic in Canada. Patients who had seen the same psychiatrist individually and later switched to group visits were asked to complete a 9-item patient satisfaction survey, in order to determine patient preference and satisfaction with care. They found that among patients with mood and anxiety disorders who were seen by the same specialist, patient satisfaction with group visits and individual visits was equivalent ($p = .19$). The results also showed treatment preference was slightly higher for GVs, 38.4%; 31.3% of participants had no treatment preference, and 30.3% preferred individual treatment.

**Effect of GVs on Provider Productivity, Satisfaction, and Economic Outcomes**

To determine the impact on utilization, GVs were implemented for high-utilizer, chronically ill older health maintenance organization members. One of the earliest GVs reduced overall group cost by $14.79 less per member per month over the control group (Beck et al., 1997). The GV participants had fewer emergency room visits ($p = .001$), fewer visits to subspecialists ($p = .028$), and fewer repeated hospital admissions per patients ($p = .0510$). Another finding in the study was GV positively impacted physician satisfaction (Beck et al., 1997).

In a GV study in the Netherlands, Seesing et al. (2015) found a savings of €329.45/ patient with chronic neurovascular disease. However, GV was cost effective only with 6 or more patients in a group. The GV intervention increased providers’ productivity by allowing them to see six to nine patients.

Edelman et al. (2012) found that GVs among older adults resulted in lower ED visits and hospitalizations, although the strength of evidence was low. The most
consistent effect of GVs in DM was less hospitalizations. Twenty-five percent of patients had higher number of GV visits, indicating high interest in GVs. These patients had two or fewer emergency room visits over two years. Edelman et al. (2012) also reported total costs for GV were lower (-$178 to $1599) across studies in their analysis. One of the limitations in this study was that incentives were provided to participants.

Performing group visits may improve health outcomes (A1c and SBP), positively impact provider productivity, enhance provider satisfaction, and reduce health care cost and utilization; particularly among frequent utilizer, older patients with chronic conditions.

**Motivational Interviewing**

Controlling healthcare costs among seniors with chronic conditions necessitates the use of effective strategies, such as MI, to improve self-management (AHRQ, 2012). Most of the early studies on MI focused on behaviors such as addiction, including alcoholism, and now have expanded to include other conditions (Miller & Rose, 2009). Several systematic reviews found evidence that MI is effective in different settings, and with different populations and conditions. In a systematic review, Morton et al. (2015) reported that 50% of included studies demonstrated effectiveness of MI in changing behaviors (diet, exercise, weight management, smoking cessation, medication adherence, and alcohol consumption) among patients without specific diseases in primary care settings. Similarly, in a systematic review of 12 meta-analyses, McKenzie, Pierce, and Gunn (2015) found that use of MI techniques was more effective in changing different behaviors (alcohol, smoking, diet, exercise, medication adherence, and weight loss) than interventions without MI. The effect of MI was small to medium on a wide variety of
single diseases and different lifestyle factors among patients without specific chronic disease.

Another systematic review of 48 studies (9618 participants) with follow-up of 13 months or more also provided evidence of the effectiveness of MI in different clinical outcomes and settings (Lundahl et al., 2013). Interventions with MI improved blood pressure, cholesterol, HIV viral load, mortality, QOL, lifestyle changes, and self-monitoring ($OR \ 1.55$, $95\% \ CI \ 1.40$ to $1.71$). However, no significant effect was found for eating disorders, medication adherence, breast feeding, and number of cigarettes smoked or marijuana use. The effects of MI at different time points were mixed ($p < .001$), significantly higher at seven to 12 months after intervention and five weeks to six months after intervention ($p < .001$) than after 13 months (Lundahl et al., 2013). This may mean that the effect of MI wears off after a year.

Moreover, MI has also been utilized to improve self-management among different populations (VanBuskirk & Wetherell, 2014) and for different interventions: older adults (Cummings, Cooper, & Cassie, 2009), diabetes (Wolever et al., 2010), hypertension (Ma, Zhou, Zhou, & Huan, 2014; Schoenthaler et al., 2011), chronic kidney disease (Sanders, Whited, & Martino, 2013), chronic conditions (Lawn & Schoo, 2009), and physical activity (Aadahl et al., 2014), and older adults (Cummings, Cooper, & Cassie, 2009). According to Falk, Ekman, Anderson, Fu, and Granger (2013), MI needs to be adjusted to literacy to be more effective in self-management of chronic conditions. There is also evidence that utilization of MI focused on self-management in group visits was more effective than group didactic education alone (Quinones et al., 2012).
To understand the mechanism of how MI works, Copeland, Mccnamara, Kelson, and Simpson (2015) looked for potential MI mechanisms present in studies evaluated in a systematic review. They found that 74% of the papers support the link between MI and outcomes. Potential mechanisms identified were counselors’ skills (empathy or MI spirit) and client behavior (commitment talk predicted behavior change, not change talk). Self-efficacy was not found to be a mechanism of MI, although it is the most researched variable. However, Copeland and colleagues noted that poor quality studies and lack of identified mechanisms made it difficult to make conclusions. There is a lack of evidence in literature on the cost-effectiveness of MI and further studies are needed. However, motivational interviewing may be cost effective because it is a brief intervention that can easily be integrated in healthcare settings.

**Conclusion**

Group visits have been widely used in the US among patients with chronic conditions (i.e., diabetes mellitus, hypertension, heart failure, weight loss, Parkinson disease, etc.). There is evidence to indicate the effectiveness of GVs in improving A1c and SBP and reducing health care cost and utilization among patients with chronic conditions, particularly diabetes mellitus. However, heterogeneity in the GV format, duration, number of visits, patient population, and lack of detailed definition of interventions in GVs may have limited the ability to evaluate evidence on the effectiveness of GVs for chronic diseases. The combination of group education and individual visits with a PCP in GVs may potentially improve some clinical outcomes, while increasing provider productivity and enhancing patient and provider satisfaction (Edelman et al., 2012).
An essential aspect of chronic disease management is self-management (Wagner et al., 2001). With group visits often used to improve self-management among persons with chronic conditions, integrating MI into GVs has led to behavioral change in patients (Naik et al., 2011; Ogedegbe et al., 2013). Thus, the use of MI within group visits for AWV may potentially elicit behavior changes essential in maintaining health and preventing chronic diseases among elderly patients.

This project aims to present the evidence supporting and filling the gap in literature describing implementation of a nurse practitioner-run group Medicare AWV, with a process evaluation based on the PRECEDE-PROCEED Model.
METHODS

This quality improvement project aimed to evaluate and compare the actual implementation of Group Medicare AWV to individual AWV to ensure equality of PPPS required by CMS. This project was conducted at an ambulatory clinic in a large medical center in Southern California. Prior to Group AWV implementation, a synthesis of evidence was performed to develop evidence-based recommendations for the group AWV, which was implemented to address an anticipated increased healthcare access issues by Medicare recipients for AWV. The basis for evaluating this intervention was the PRECEDE-PROCEED model.

Target Population

It was estimated that in 2012, approximately 3300 KP Medicare patients would be eligible for the Medicare AWVs at Panorama City. Targeted for Group AWVs were these senior Kaiser Permanente (KP) Health Plan members covered by Medicare Part B, which includes KP Senior Advantage, KP Medicare, and other group Medicare plans. The majority of these patients had one or multiple chronic conditions (i.e., heart disease, stroke, cancer, diabetes, arthritis). These were the patients eligible for the AWVs and the focus of this project.

Setting

The setting was the ambulatory care clinic at Kaiser Permanente Medical Center in Panorama City California, a neighborhood within the San Fernando Valley. The Panorama City population is moderately diverse with a high percentage of Latinos and Filipinos (Panorama City, n.d.).
Ethical Consideration

Institutional Review Board approval was not sought for this quality improvement project. In the evaluation, only aggregate data from clinic reports was used; no individual patient or individual provider data was reported. Permission to utilize regional reports is given in Appendix A.

Procedure for Group AWV Implementation Evaluation

Development of the group AWV was described including the planning, development, implementation, and program components. The development and implementation processes were evaluated using the PRECEED to compare health outcomes of group AWV participants with participants receiving individual AWV.

In 2012, most primary care providers were still performing routine physical exams, as they had done prior to ACA implementation. Physical exams did not routinely include screening for depression, memory loss, and risk for falls. These three health conditions are highly prevalent and unscreened among the elderly population (World Health Organization [WHO], 2016). Falls impact quality of life, cause depression and social isolation, and is the leading cause of fatal injury among elderly (CDC, n.d.). Thus, in 2012, Kaiser Permanente Southern California Region chose these three screening tests as quality indicators of providers’ Medicare AWV performance within the health system. The Region started monthly reports of providers’ completion of follow up actions when patients responded “yes” to the following items: (a) Patient Health Questionnaire-2 (PHQ) for screening depression, (b) having fear of falling or history of fall in the past six months for fall risk assessment, and (c) patient or family concern about the patient’s memory loss. Data were collected from the KP standardized Medicare AWV
questionnaire. Providers are required to complete the PHQ-9 questionnaire for positive PHQ-2 depression screen, timed-up and go (TUG) test for patients at-risk for fall, and brief mental status assessment of older adults, called Mini-Cog test, for memory loss.

**Plan for Evaluation of AWV Process Outcomes**

In this project, data analysts at KP Southern California Region reported outcomes as follows.

- Completion rates of regionally selected screening tests in individual AWVs and group AWVs were compared to assure equality of care among seniors attending the AWVs from 2012 to 2016.
- Patient ratings of satisfaction with group AWVs were collected for 2014 to 2015 and were included, as well.
- Cost calculation models using varied numbers per group AWV group (1 to 12 patients) were performed.

Patient satisfaction in individual AWVs were unavailable. No data were collected on patient satisfaction with individual AWVs, disallowing comparison of patient satisfaction with group and individual AWVs.

**Follow-up Procedures**

Based upon project findings, recommendations will be provided for program improvement with reference to the evidence reviewed and best practices. The recommendations will be submitted to the Group Medicare Wellness Visit committee for the purpose of integrating best practices in the group AWV visit and facilitating implementation in other facilities within the organization.
RESULTS

This chapter documents the implementation of the group Medicare annual wellness visit in light of the phases and recommended steps of the PRECEDE-PROCEED model. See Table 3 for Phases of the PRECEDE-PROCEED MODEL in the Group AWV.

Phase 1. Social Assessment

A social assessment is necessary as part of the development of a comprehensive AWV program for the elderly. An online search was conducted on the topic of healthy aging and CMS requirements for Medicare wellness visits. Social needs of the elderly must take into account declining physical reserves, family changes, retirement, awareness of own mortality, and a high prevalence of chronic conditions (American Psychological Association, n.d.). This population is vulnerable to the development of chronic conditions, defined as non-communicable diseases of one-year or more, requiring long term medical attention and restricting the ability to perform daily activities. In general, chronic conditions are incurable and contribute to frailty and disability among the elderly (USDHHS, 2010). In the US, costs associated with chronic conditions account for 86% of all health care expenditures (Gerteis et al., 2014). The burden of chronic disease is fueled by the unhealthy lifestyle of many in the US, which includes tobacco use, poor diet, physical inactivity, and excessive alcohol consumption (CDC, n.d.). This information facilitated the inclusion of healthy lifestyle topics in the group AWV curriculum. Another resource utilized in the social assessment was local data from the Pharmacy Online Interactive Network Tool (POINT) data base (a robust database of all KP members) that supported the inclusion of healthy lifestyle topics in the AWV.
Phase 2. Epidemiological Assessment

Epidemiological data included information taken from the social assessment. According to the CDC (n.d.), 80% of older adults in the US have at least one chronic condition and one of every two older adults have at least two. In 2010, one in five (20%) or 117 million older American adults had two or more chronic health conditions (Anderson, 2010; Ward & Schiller, 2010). Among the elderly, in 2008, mental health concerns were present one in five (CDC, n.d.). At KP, data obtained from POINT included population specific data such as demographics, chronic diseases, and risk factors. This database facilitated program planning within Southern California (SoCal) KP. Populations and subpopulations with chronic conditions were identified.

In 2011, KP Panorama City had 33,306 patients who were 65 and older. Sixty seven percent of these patients had hypertension; 31% had diabetes, and 16% had cardiovascular disease. Nine percent had two chronic conditions; 6% had three (hypertension, diabetes, and cardiovascular disease). Almost 90% did not engage in muscle strengthening physical activity despite the fact that it is recommended that an individual engage in 150 minutes a week of exercise or physical activity for disease prevention (CDC, n.d.). This information provided evidence for the inclusion of information about physical activity in the AWV curriculum. In order to improve physical activity among the participants, the instructor engaged them by including one-minute exercises after discussion of the benefits of exercise. The participants walked for a minute after 30 minutes of sitting in the classroom.

Aside from age, other epidemiological factors for seniors include race, socioeconomic factors, low utilization of prevention screening, difficulty accessing health
care, diet, and mistrust of the healthcare system (Natale-Pereira, Enard, Nevarez, & Jones, 2011). Potential problem related to health care access was a key epidemiological factor that triggered the design and development of the AWV group.

**Phase 3. Educational and Ecological Assessments**

In this phase, stakeholders developing the group AWV assessed predisposing, reinforcing, and enabling factors. Some predisposing factors related to aging were memory impairment, hearing impairment, visual misperception, fatigue, medication side effects, gait changes and poor balance (American Psychological Association, n.d.). All these elements affect older adults’ independence and quality of life (Boss, & Seegmiller, 1981) and were included in the KP Medicare AWV intake questionnaire. Also, predisposing factors for the development of chronic illness were patient knowledge of risk factors, value of physical activity, attitudes toward behavioral change, beliefs of personal health risks, health needs and confidence in motivation to change. In the Group AWV, the NP assessed patients for predisposing, reinforcing and enabling factors during the individual sessions.

Reinforcing factors included attitudes of healthcare provider and policy-maker, both of which were very supportive of the program. The presence of family members, who often attended group visits with patients, was another positive reinforcing factor. Enabling personal factors included accessibility and availability of resources in the home, community, and KP, individual patient skills, and provider MI skills. An enabling organizational factor was KP’s HealthConnect, the electronic health record system. Evidence-based guidelines were embedded in the system allowing decision support for physicians and the healthcare team. Timely reminders and “Best Practice Alerts” were
visible on the computer during clinic visits to improve provider compliance with guidelines.

To implement the group AWV, instructor and participant materials were developed (i.e., curriculum, participant binders in English and Spanish, program evaluation tools). Educational topics for AWV were enumerated in the Medicare.gov website. Other topics (i.e., healthy aging, health problems common among seniors) were also included. Although the KP Group AWV curriculum was started by Masters of Public Health (MPH) Interns in the Department of Health Education in 2011, it was not completed until 2012. The NP revised the PowerPoint slides to ensure key points and potential patient questions were addressed, hence reducing questions and ensuring a smooth flow during one-on-one interaction with the NP. Based on concerns/questions common among elderly patients (i.e., erectile dysfunction, female sexual dysfunction, chronic pain, and improving memory), the NP also developed a one-page educational flyer to facilitate instructions and improve information delivery during interactions with patients. A class binder was designed containing educational materials for all topics discussed in group sessions. For a table of contents of the class binder, see Appendix B.

An online search for standardized and evidence-based screening tools was conducted which was later determined to be unnecessary since the Southern California Region KP developed their own two-page AWV intake questionnaire. Every medical center in the KP network, including Panorama City was required to use this standardized AWV questionnaire. However, in order to expedite gathering of necessary information, the NP added questions regarding nicotine and substance use, exercise, sleep, and sexual problems.
Phase 4. Administrative and Policy Assessments

The Chief of Internal Medicine requested development of a new program to meet the increased demands for AWV access, which was also supported by administrative leaders. In August 2011, the Chief of Internal Medicine, Department Administrator of Health Education, health educators and NP attended an initial planning meeting to discuss new CMS requirements. The team determined available staff, needed resources, and proposed strategies to implement the AWV. Operational workflow was discussed and established. Stake holders from other departments (Department Administrators of Member Services, Data Quality Analysis, Call Center, and Internal Medicine/Family Practice, and Social Services) were invited to subsequent monthly meetings. Meanwhile, the Department Administrator of Health Education and NP participated in monthly Regional Wellness Visit teleconferences (TC).

Southern California Regional Consultant was hired and began monthly AWV TCs in 2011 to address issues across medical centers. Although providers were proficient in performing physical examination, there were issues brought up related to lack of clarity on performing more comprehensive AWVs that included PPPS. Thus, in 2012, Southern California Regional consultant developed a CME activity delineating requirements of Medicare Wellness Exams and a review of geriatric assessment; this addressed providers’ issues and improved billing practices and AWV documentation. As awareness of the AWV increased, Southern California Region started monitoring AWV issues: erroneous bookings for physical exam, which is non-reimbursable visit code, and provider documentation of AWV quality care indicators.
In 2012, Panorama City administrators developed scheduling and staffing policies. Group AWV key staff members were identified: NP, nurse/health educator, medical assistant or licensed vocational nurse, and project manager. Smart phrases for provider documentation, appointment template and workflow, marketing materials [brochures, outreach letters, phone scripts], and Call Center scripts for scheduling appointments were also created.

When the Regional Office of Data Quality Analysis became aware of the novel group AWV intervention, the director conducted chart audits of the group AWV documentation to ensure compliance with CMS requirements. Although the director found services provided were comprehensive and documentation satisfied CMS requirements, this analysis identified issues related to the department code and visit type code under which AWVs were booked. Center for Medicare Services does not reimburse services provided under the Health Education Department because it is not a clinic. Additionally, although the NP was using the correct billing code (G0438, Annual Wellness Visit, Initial), there was no existing KP visit code for group AWV. This was evident in the absence of data for group AWV in 2012 (See Appendix I). Early in the implementation of the AWVs, completions of documentation were reported. Reports indicated completion of group appointment documentations were 100%, compared to individual visits at 82%.

Subsequently, KP Panorama City changed the group department code to Internal Medicine, although the venue (Health Education Department) and staff (NP and health educators) remained the same. A group AWV code (MWEG 160) for regional utilization began to be used in 2013. Booking of group AWV appointments switched from Health
Education to the Call Center. While waiting for the creation of group AWV code, Health Education continued to offer group AWVs (2012).

At the October 2012 workgroup meeting, the Chief of Internal Medicine, administrators of Internal Medicine, Family Practice, Call Center, MPH staff, and NP discussed and approved final changes in group AWV policy and educational materials. The Southern California regional team developed a training tool for schedulers; the Department Administrator of Call Center revised their policy and included the training tool for schedulers. Health Education staff revised a phone script for schedulers to utilize in reassuring patients they will be receiving comparable or better service in group AWVs and answering questions about the group AWV. In addition, a marketing tool was distributed to physicians and nurses in Internal Medicine and Family Practice. Local meetings were held every other month to address issues and patient recruitment process until the pilot was completed in 2013.

**Phase 5. Implementation**

**Recruitment Process**

In 2012, a list of patients with chronic conditions who had not had PCP visit in the prior 12 months and with no upcoming appointments was generated. Health Education MPH staff invited appropriate patients from this list to come to group AWV using an invitation letter developed earlier by the AWV workgroup and signed by the Chief of Internal Medicine contained information on services provided in the group AWV. Interns mailed letters to these patients. Another recruitment technique was setting up a station for an MPH intern at the entrance of the Department of Optometry, a high traffic area. The intern gave AWV information sheets and asked elderly patients if they
had been seen by their PCP in the last 12 months. When patients said no, the intern solicited interested patients and registered them in the group AWV. Other approaches piloted included electronic referrals from physician, phone outreach and direct marketing to members. All strategies improved enrollment in the Group AWV, but were laborious. Many involved lack an understanding of what a wellness visit is about. Lastly the recruitment was streamlined by using Call Center agents to book all group AWV appointments. A script was developed to ensure consistent messaging among the staff. Through all efforts, group AWV registration increased and participants had more appropriate expectations of the appointment. In 2013, group AWV patients were 2% of the total AWVs seen in Panorama City. The number went up to 6% in 2014, 24% in 2015 and 26% in 2016.

**The Group AWV**

From September 2012 to March 2013, Panorama City piloted 18 group AWVs with 196 participants. Run by the NP with a health educator, group AWV in English was fully implemented and scheduled one to two times a month in 2013. By 2015, group AWVs were scheduled in English and Spanish two to three times a week.

Although the maximum number of patients for each group visit was 12, walk-ins or drop-ins were welcome. Multiple times, spouses who came with patients were accommodated, if they agreed to be seen after pre-registered patients were seen. The largest number of patients in the group was 16. This happened early in implementation as a result of misbooking (i.e., patients had appointment slips, but were not booked). The NP opened up more Group AWVs whenever there was an increased demand.
Previsit

The NP performed chart reviews prior to visits, using the Care Management Summary Sheet (CMSS) to develop an action plan/PPS schedule, as required by the CMS. The CMSS contains chronic conditions and level of risks, recommendations for tests/procedures, immunizations, medications and dates filled at any KP pharmacy, last two blood pressure readings in 12 months, common laboratory test results (A1c, lipids, kidney function, liver function, hemoglobin, thyroid, potassium, calcium, vitamin D), and last emergency room visit and hospitalization. Care gaps (quality indicators that patients and providers need to address to achieve excellent health outcomes) can be found in patient CMSS. Examples include missing labs (A1c, lipid profile, creatinine, potassium) and immunizations. Using the pre-printed CMSS and prefilled PPPS schedule (called AWV action plan) and doing the chart reviews prior to the visit enabled the NP to deliver care and manage patient chronic conditions efficiently. To see a sample PPPS, see Appendix D.

The Visit

The CMS requires providers to (1) acquire beneficiary information, (2) begin assessment, and (3) counsel beneficiaries during the wellness visit. Acquisition of patient information was achieved by participant completion of the AWV intake questionnaire. Assessment begins with vital signs (i.e., blood pressure, height and weight, body mass index calculation, physical activity, and sensory assessment for vision and hearing). In the group AWV, the NP focuses on total health which is made easy by the electronic medical record (Young, 2014). Counseling with MI is done in the group session by the health educator and in individual sessions with the NP with the goal of engaging patients.
Engagement of patients is fundamental for ensuring effective use of preventive services (Koh & Sebelius, 2010). During the visit, the NP engages patients by reviewing individual health information from the pre-printed CMSS. This helps patients understand their conditions better and actively participate in goal setting and action planning. When the NP gives a particular handout, patients are advised to read and ask questions or discuss concerns with primary care physicians (PCP) in follow-up appointments. An example of how the health educator also engages and motivates patients to increase physical activity was by having patients walk in place or do arm exercises for a minute. This was done after the discussion of the benefits of walking after prolonged sitting (Aadahl et al., 2014).

Educational handouts were developed to expedite individual sessions. Some handouts include: “How to Read and Understand Your CMSS or Report Card,” “Are you at goal?” “Strategies to Control Your Blood Sugar and Blood Cholesterol,” “Ways to Improve Memory,” and “Erectile Dysfunction.” Existing print regional materials, if available, were used in the binder.

**Health Screenings**

Aside from screenings for diabetes, heart disease, osteoporosis, and cancer (colorectal, breast, and prostate), other PPPS included screening for memory loss, fall risk, and depression. Provider performance of these three screens were monitored and reported quarterly.

According to the Alzheimer’s Disease International (ADI, 2011), dementia is a profoundly life-changing condition. About half of persons with dementia are routinely underdiagnosed. Since brain pathologies occur well in advance of the onset of clinical
signs and symptoms, and patients usually delay seeking treatment, systematic screening for dementia is included in the AWVs. Early diagnosis and treatment of dementia may reduce health care cost by delaying placement in a nursing home (Alzheimer’s Association (n.d.). When a patient responded positively to the question on memory loss, providers should perform a memory test. In the Group AWV, memory was assessed using the mini-cog test, a three-minute screening tool for dementia (Borson, Scanlan, Chen, & Ganguli, 2003). It included a three-item recall and a clock-drawing test (CDT). One point was given for each word recalled. When a patient drew a normal clock with all numbers in the correct position and sequence, s/he scored 2 points. Zero points were given if patient refused or was unable to draw a clock. Scoring <3 on the mini-cog is positive for dementia. A score of 3 is a negative screen for dementia (Tsoi, Chan, Hirai, Wong, & Kwok, 2015). In the group visits, NP referred patients with positive screens to the Geriatrics Department for a thorough evaluation of dementia with patient or caregiver consent. Not all physicians referred patients with positive screens to the Geriatrics Department.

Under the AWV standards, Medicare recipients should be assessed for falls. When a patient responded “Yes” on having fallen in the past 12 months or being afraid of falling, the provider is to perform a timed-up and go (TUG) test. The goal is early identification of at-risk patients and early intervention to reduce fall injury. TUG test is a measure of function and is correlated to balance and fall risk (Podsiadlo & Richardson, 1991). After the patient is given instructions, s/he is timed starting from standing up from an arm chair; s/he walks 10 feet, turns around, walks back to the chair, and sits down. Patients who took 14 seconds or more to finish the test were at high risk for fall. With
patient agreement, the NP sent a referral to physical therapy for gait, balance, and muscle strength training. According to Gschwind et al. (2013), older people at high risk for fall benefit from individualized intervention, including a referral to physical therapy for gait, balance and muscle strengthening exercises. The educator also showed a 10-minute fall prevention video, followed by a discussion on fall prevention. Unfortunately, primary clinics in the medical center have no capability of showing the video during individual AWV.

Initial assessment for depression is performed with the PHQ-2, a screening test for major depressive episode using two questions (Kroenke, Spitzer, & Williams, 2003). A positive response to either question triggered the use of the Patient Health Questionnaire-9 (PHQ-9), a 9-item depression screening tool based on the diagnostic criteria for major depressive disorder in the DSM-IV (Diagnostic and Statistical Manual Fourth Edition; Kroenke, Spitzer & Williams, 2001). If a patient answered positively to having thoughts of suicide, the social worker is paged to come, assess the patient, intervene and follow-up. The NP kept the primary care provider (PCP) informed of positive depression screens by sending an electronic message linked to the patient chart. A follow-up appointment was scheduled with the PCP and included in the action plan given to the patient. In addition, the appointment was also in the after visit summary (AVS) which was given to the patient at the end of the visit. In individual visits, patients usually see their own primary care provider.

Improving health and managing chronic conditions requires more than information dissemination. In the individual sessions, the NP reviewed lab results and behaviors (i.e., smoking, alcohol, and physical activity) and assisted patients in
identifying personal health goals through motivational interviewing. As lab results and normal ranges were discussed with patient, the NP indicated in form’s green, yellow, and red columns, “Are you at goal?” results of cholesterol, glucose, blood pressure; physical activity level, smoking status, and BMI. Results written in the green column meant the patient’s health measure was at goal, yellow meant results needed to be improved, and red means definite changes are needed. This visual tool helped patients visualize their health status. Patients find reading the results under the green column very reaffirming (of their healthy lifestyle or that medications are effective). Results in the yellow and red column alerted patients of the need to change their lifestyle or medications. Consequently, at-risk patients often asked “What do I need to do?” The NP used another tool, a handout titled “How to manage your blood sugar and blood cholesterol” to assist patients with goal setting and action planning. Patients chose action/s from the list in the handout and the NP circled the chosen action.

**Group Session**

Bundling educational topics into a group session responded to the Medicare requirements. The foci of the class were healthy aging and healthy lifestyle, and the goal was empowering patients to manage chronic conditions. According to the National Council on Aging (NCOA, 2014), lifestyle intervention reduces cardiovascular risk of older Americans by 71%. Lifestyle recommendations were integrated in the class by the health educator who facilitates the discussion on healthy living (healthy eating, physical activity, avoiding nicotine and alcohol abuse). Other topics covered were insomnia, incontinence, depression, falls, and advance directive. Participants received a binder of class topics and an evaluation form that was completed at the end of the session.
Phase 6. Process Evaluation

The group AWV was evaluated by reviewing patient feedback, based on the group AWV evaluation, assessment of effectiveness of the intervention in meeting CMS requirements (i.e., chart review of provider documentation), and cost analysis. Based on this, the physician champion recommended the continuation of the GV. Although the program was successful, the NP had several challenges in providing services during the group AWV.

Support Staff

One of the barriers to starting class on time was the lack of a nurse dedicated to the program. The Departments of Internal Medicine and Family Practice alternated in sending a nurse/MA to assist in group visits. Hence, often, a different or newly hired staff member, who was usually unfamiliar with the AWV was sent; the NP ended up orienting the nurse. This was disruptive and delayed the NP from seeing patients. To facilitate orientation, an instruction guide for these assisting staff members was developed by the project manager. Finally, in 2016, a part-time licensed vocational nurse for the group AWV was hired in Health Education.

Office Space

Another barrier was lack of dedicated clinic space. To do group visits, space is needed for individual exams as well as group activities (up to 15 patients). In the beginning, the NP had to set up in a different room each time. A rolling cart was a temporary solution. When two classes were scheduled in a day, the NP had to set up twice. Starting in 2016, a permanent space and conference rooms were assigned. Thus, after three years the group AWV settled into those two office spaces.
Form Completion

The Medicare AWV intake questionnaires were mailed to patients for completion prior to the clinic visit. Nevertheless, some patients failed to bring them. Therefore, form completion took time out of the Group AWV; also, some patients came late for the appointment. In the evaluation, patients indicated they needed more time to answer the questionnaire before the visit. To resolve this issue, starting in January 2013, the schedule was adjusted to dedicate the first 30 minutes to form completion, answering questions about the program, and taking vital signs.

Attendance

Although registration for individual AWVs was higher than group AWVs, the “no show” rate was lower in group AWVs (10%) than individual AWVs (40%). No show is defined as patients who did not come to a scheduled clinic appointment. Another advantage found for the group AWV was the ability to accommodate drop-ins or walk-ins. Once, a new member was brought to the Health Education Department in a wheelchair and booked to attend the group visit that afternoon. The frail-looking patient had chronic obstructive pulmonary disease, and was on oxygen and multiple medicines. After the visit, the patient and his son left with multiple prescriptions, lab requests, referrals to multiple departments, and follow-up appointment with a PCP. They verbalized feeling well taken care of and impressed with the coordinated care received.

Phase 7. Outcomes Evaluation

Patient Evaluation

At the end of the group AWV, participants were given evaluation forms with items rated using a four-point Likert scale: 1 = strongly agree, 2 = agree, 3 = disagree,
4 = strongly disagree (See Appendices E and F for the evaluation form and analysis).

Evaluations indicated a high patient satisfaction rate:

- 98% said they learned more about healthy aging and healthy style
- 97% agreed that they learned what can be done to prevent or manage problems common among adults 65 and older
- 97% agreed that their health history, medicines, and lab and test results were reviewed
- 100% indicated that topics discussed were important for them to know how to take care of their health
- 99% reported that the program helped prepare them for a visit with their physician
- 99% would recommend the program to a family member or friend
- 99% stated that instructors answered questions fully to their satisfaction
- 100% stated that they were glad they participated in the program
- 92% indicated that the length of the class was just right.
- On a scale of 1 to 10, (1 = not confident, 10 = very confident), average confidence level was 8.5 that they are able to carry out their preventive action plan.

Patients reported being very pleased and talked highly about the program with their doctors. Several patients attended the GV because a friend or relative advised them to attend. Some patients exclaimed in front of the nurse from Internal Medicine/Family Practice, “This is better than my doctor’s visit,” and “You really have it all together.” Many patients have asked, “Why doesn’t my doctor tell me/explain my test results like you do?” Some participants have come every year for three years in a row. Unfortunately, repeat visits are not tracked.
Providing PCC is one of the goals in healthcare under the ACA. According to Robinson, Callister, Berry, and Dearing (2008), fundamental characteristics of PCC include patient involvement in care and individualization of patient care. These evaluations show that group AWV is an effective strategy that enhances communication, shared decision making, and patient education, which are effective PCC practices (Robinson et al., 2008).

**Regional Evaluation**

The Southern California Region sends out monthly quality performance reports on AWV, which include individual medical center completion rate of TUG test for positive response to falls/fear of falling, mini-cog for memory problem, and PHQ9 for depression, if patients have positive PHQ2. Panorama City consistently achieves high marks on these AWV quality indicators (See Appendices G1-3).

At KP Panorama City, higher completion rates for these indicators have been found for group AWVs compared to individual AWVs. This may be attributable to having a single NP who runs the GVs.

A decreasing trend in number of Medicare recipients having AWVs with PPPS at KP Panorama City occurred in 2016, which may be related to barriers mentioned by Jensen, Salloum, Hu, Ferdows, & Tarraf (2015) (i.e., decision making, lack of awareness, lack of physician counseling, patient comorbidities, poor functional status, language barriers).
Phase 8. Impact Evaluation

**Patient Volume**

In 2013, 2% of patients who came for AWVs attended the group AWVs. The number steadily increased to 6% in 2014, 23% in 2015, and 26% in 2016. One-fourth (437) of 1888 patients who came for AWV in 2014 were seen in the group visit.

**Cost Savings**

Southern California Region performed a cost analysis of the group AWV in 2014. Patients seen individually by a physician in the clinic cost $85 per patient compared to $51 per patient in a group visit of six patients; or $38 per patient in a group of 12 patients. In 2015, there were 485 patients who attended group visits, which would have cost $41,225 if these patients had been seen individually. In a group visit of six patients, the cost was $24,735 yielding a cost saving of $16,490. For a group of 12, the cost was $18,430, yielding a savings of $22,795 per group. The finding of cost saving in a group of more than six is consistent with the result in a study by Seesing et al. (2015).

According to the Gschwind et al. (2013) an efficacious intervention in preventing falls is exercise, particularly balance, muscle strength, and gait training. For the group AWV, a standard practice was referring all identified high risk patients (with their consent) to physical therapy for gait, balance, and muscle strength, training. In 2013, 32% (61/172) of the group AWV patients were thus referred for physical therapy. If falls were prevented in 20 patients (30% of the high risk patients), estimated cost savings would be $600,000 in one year, based on average hospital cost of over $30,000 for a fall injury (Burns, Stevens & Lee, 2016).
SUMMARY

The PRECEDE PROCEED model is a comprehensive and widely applied model for health promotion and has been valuable at evaluating the group AWV. It was easy to understand, once the two key aspects of the intervention were understood: planning and evaluation. While not using the PRECEDE-PROCEED model specifically, the group AWV planners began with the end in mind: promoting healthy aging by making it easy for patients to make the right choice and access resources. Administrative and leadership support and departmental collaboration of Internal Medicine, Family Practice, Call Center, Member Services, and Health Education facilitated the implementation of the group AWV. Organizational factors that enabled successful planning and performance of AWVs were KP health information system and electronic medical records. Taking into consideration the predisposing, reinforcing, and enabling factors of the elderly facilitated the development of the group AWV curriculum, educational materials, and binder. Integrating motivational interviewing techniques helped the nurse practitioner and health educator to engage patients in their care. Along the way of implementing the group AWV, changes and modifications in the schedule and educational materials were made based on patient feedback. Since its pilot in 2012 and full implementation in 2013, group AWV attendance has steadily increased from 6% to 26% of total AWVs in 2016. Numerous strategies have been used to recruit participants with the most helpful being the Call Center script that addressed patient questions about the group AWV and its benefits. Patient feedback consistently indicated high satisfaction and positive experiences with group AWV. Provider performance rating on quality indicators of group AWVs was found higher than individual AWVs and Panorama City Medical Center was
higher than other medical centers within the region. Savings occurred when groups consisted of six or more participants. Another potential savings occurred from preventing fall injury of high risk patients who were referred to physical therapy.
DISCUSSION AND IMPLICATIONS FOR PRACTICE

Group AWV was found to be cost effective and patient evaluation of the group AWV indicated high patient satisfaction, a measure of patient-centered experience. Both patient-centered care and satisfaction are recognized important components of health care quality (Berwick, 2002) and positive outcomes of large scale GV’s (Kowalczyk, 2008). Use of the PRECEDE PROCEED model enabled the evaluator to examine critical aspects of planning, implementation and evaluation. In evaluating the group AWV using this model, one learning was that patient input should have been solicited in the early phase of planning. However, once implemented, patient feedback of Group AWV led to modifications as implementation unfolded. All elements of group visits had to be taken into account during the planning phase. Logistical issues such as space and scheduling, adequate administrative and nursing support, and resources while discussed still were issues during implementation. These issues were major challenges during the first two year; they were eventually resolved after two years.

The prework done by the NP before patients were at the appointment were critical to its success. Chart reviews and reviewing prefilled intake (with PPS) were extremely helpful in expediting individual care during the group AWV. The chart review done on the day of the GV was especially beneficial because results of laboratory tests were included. However, doing this prework way ahead of time may be a waste of time because some patients cancel appointments just before they are scheduled or rarely, are no shows. Given the current situation, the best time is one to two hours before the group AWV.
During the pilot year, the NP found discussion of health problems or risks identified through the AWV questionnaire time consuming. Thus, 1- to 2-page handouts on those topics were developed. Proactively developing handouts that address frequently encountered problems in elderly patients would have been helpful from the beginning, if done during creation of the AWV binder. Since the AWV binders are very comprehensive and group AWV found them helpful and valuable, AWV binders should also be made available to AWV patients seen in the primary care clinics. These binders are available and maybe ordered in Health Education.

Video on fall prevention should be made available in the primary care clinic to enable patients at high risk for fall to watch it. This is new quality indicator that the SoCal Region started monitoring in 2017. Having the video on a tablet may be a good solution so patients and family members can watch it in the waiting room. The CMS recommends a using a checklist for PPS. Group AWV patients receive a checklist (see Appendix D), in addition to after-visit summary. In the individual AWVs, patients receive only after-visit summaries. For physicians to use a checklist, SoCal Regional AWV Consultant needs to develop a checklist and workflow, and also make it easy for physicians or nurses to complete. Perhaps, a checklist template in HealthConnect might make it feasible for provider use.

The standard practice for the NP is to refer high risk patients, with their consent, to specialists. Data on AWV referrals of high risk patients seen by primary care physicians to specialists were not available. Availability of referral data for comparison with group AWV would have been helpful. First, a standard of practice for referrals of
high risk patients to specialists needs to be developed before compliance can be monitored by the SoCal Region.

To improve effective use of clinical and preventive services, the CMS requires and reimburses AWVs with PPPS. Group AWV is one strategy that can improve compliance with PPS and meet the challenges from the enactment of the ACA. Use of MI in the group AWV empowers patients to take control of their health through self-management. Patient empowerment guarantees better outcomes for individuals (Robinson et al. 2008). Moreover, in order to effectively use MI in the elderly, the health educator and the NP needed to be flexible and use collaboration. Both worked to clearly state the purposes of activities within the Group AWV, and gave directions slowly, reinforcing information as needed. Repetition is needed to increase retention of information (Kang, 2016). According to patients who have been attending the group AWV for three years, they wanted information reviewed at each visit in order to refresh their knowledge and motivation.

Booth et al. (2015) recommended clarification of circumstances under which group clinics are an appropriate alternative to individual visits. In the existing group AWV, patients presenting with acute or chronic medical complaints should not be in the group AWV, since the focus is on wellness. Patients with dementia and cognitive impairment would probably not benefit from group education. However, caregivers who attended the group AWV appreciated the information, medical review, and education binder they received. A patient group that seemed to especially benefit from group AWVs are new KP members; they valued the class binder and instructions about educational topics and health resources (maps of the outlying medical offices, location of
laboratories, pharmacies, and other departments). New KP members and current members, including at-risk patients and patients with chronic conditions found the group AWV very informative and helpful.

Finding a decreasing trend in the number of Medicare recipients having AWVs with PPPS at KP Panorama City in 2016 would warrant investigation of the cause. Could it be due to misbookings of physical examination visits instead of AWVs, or is there a need to remind patients to schedule an AWV? If patients need reminders, this can be programmed electronically in the system.

In spite of the benefits of GVs and physicians recommending group AWVs to patients, only one physician has shown interest in performing group AWV at KP Panorama City. According to Kirsh, Lawrence, and Aron (2008), physician resistance to GV may be due to fear of disrupting patient relationship as a result of being seen by GV providers. In addition, GVs necessitate major redesign of the system for new workflows and collaborative relationships. Hence, it is necessary to include all stakeholders in the early phase of planning. McCuistion et al. (2014) reported lack of dedicated time and resources resulted in abandonment of GVs. For successful implementation of GV, important features of GV need to be considered and addressed by GV planners. Essential elements for GV success include a committed physician champion, staff support, and clinic space. If no one in the facility had experience with GV, it may be necessary to include a GV expert to assist in initiating GV in clinics with access issues.


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APPENDIX A

PERMISSION LETTER TO USE AWV DATA

May 3, 2016

To whom it may concern,

This letter gives permission and authorization for Monette Lalimar to use and share data from the Medicare Annual Wellness Visits (AWV) for quality improvement analyses for her Doctor of Nursing Practice Final Project. Data used will not include any protected health information and will be used for the project study purpose only. The goals of this project are to (1) evaluate the effectiveness and efficiency this quality improvement project, nurse practitioner-run group AWV and (2) share best practices within Kaiser Permanente.

The signatures below give Monette Lalimar authorization to proceed with her project until completion in May 2017.

Monette Lalimar, MSN, RNP, BC-APRN

Date 5/3/2016

Anna Marie Salvador, MPH
Assistant Department Administrator

Date 5/3/2016
APPENDIX B

COMPARISON OF CMS MEDICARE COMPONENTS IN GROUP AND INDIVIDUAL AWV

<table>
<thead>
<tr>
<th>Medicare Initial Preventive Physical Examination (IPPE) – Pan City '12</th>
<th>Regional Medicare Program</th>
<th>Pan City Senior Health Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMS Medicare IPPE component</td>
<td>Regional Medicare program</td>
<td>Pan City Senior Health Program</td>
</tr>
<tr>
<td>A. Interventions</td>
<td>1:1 with MD</td>
<td>Group Visit with 1:1 NP visit</td>
</tr>
<tr>
<td>B. Visit length</td>
<td>40 minutes per patient w/ MD</td>
<td>Group visit length: 90-120 mins.</td>
</tr>
<tr>
<td>Number of patients seen in % of LTR</td>
<td>15 minutes w/ MA</td>
<td>MA: 15 mins, RNP: 10-15 mins,</td>
</tr>
<tr>
<td>6 patients</td>
<td>10-12 patients</td>
<td></td>
</tr>
<tr>
<td>C. History (0): PMH, PSH</td>
<td>AWV Questionnaire entered by</td>
<td>AWV Questionnaire entered by</td>
</tr>
<tr>
<td>Physical activities</td>
<td>MA/LVN in HealthConnect</td>
<td>MA/LVN in HealthConnect</td>
</tr>
<tr>
<td>FH</td>
<td>By LVN/MA/MD</td>
<td>By NP</td>
</tr>
<tr>
<td>ETOH, Tobacco, drug</td>
<td>By LVN/MA/MD</td>
<td>By LVN/MA/MN</td>
</tr>
<tr>
<td>Diet</td>
<td>Assess for Wt loss of ≥ 10 lbs</td>
<td>Assess for Wt loss of ≥ 10 lbs</td>
</tr>
<tr>
<td>D. Review of potential Risk Factors (0): Depression or mood disorders</td>
<td>1. Stress assessment</td>
<td>1. Stress assessment</td>
</tr>
<tr>
<td>2. Living situation</td>
<td>2. Living situation</td>
<td>2. Living situation</td>
</tr>
<tr>
<td>4. Sleep</td>
<td>4. Sleep and impact in class</td>
<td>4. Sleep and impact in class</td>
</tr>
<tr>
<td>E. Review of functional ability and level of safety (5)</td>
<td>Screen by MA/LVN, rev w/ MD</td>
<td>Screen by NP, PHQ2, ref PHQ9</td>
</tr>
<tr>
<td>1. PHQ2, if + do PH9</td>
<td>2. Hearing assessment-ref audiometry</td>
<td>2. Hearing assessment-ref audiometry</td>
</tr>
<tr>
<td>2. Hearing impairment- y/n</td>
<td>3. Fall risk</td>
<td>3. Fall risk – high risk, refer for PT</td>
</tr>
<tr>
<td>5. Memory loss</td>
<td></td>
<td>6. Memory loss-failed, refer to Geria</td>
</tr>
<tr>
<td>F. EXAMINATION (4)</td>
<td>1. Ht, wt, BP, visual acuity screen, BMI</td>
<td>1. Ht, wt, BP, visual acuity screen, BMI</td>
</tr>
<tr>
<td>1. VS</td>
<td>2. EOL planning</td>
<td>2. EOL planning - in class, SSW refer</td>
</tr>
<tr>
<td>2. End-of-life (EOL) planning (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. COUNSEL, EDUCATION, REFERRAL</td>
<td>A. MA (20 minutes):</td>
<td>I. Pre-class: A questionnaire completion by patient</td>
</tr>
<tr>
<td>1. Review of above 5 components (2)</td>
<td>1. Ensure completion of AWV questionnaire</td>
<td></td>
</tr>
<tr>
<td>2. Counseling &amp; education, referral</td>
<td>2. Do VS, weight, height</td>
<td>B. MA to ensure completion of questionnaire, VS, wt, ht</td>
</tr>
<tr>
<td>3. Preventive schedule setup:</td>
<td>3. Perform screenings (vision test, TUG test, clock drawing,</td>
<td>C. Available staff assist with group activities</td>
</tr>
<tr>
<td>a. screenings</td>
<td>PHQ9, show No More Falls DVD</td>
<td></td>
</tr>
<tr>
<td>i. Bone mass measurement</td>
<td>B. MD (40 minutes):</td>
<td>II. In Class (2 hrs) (education)</td>
</tr>
<tr>
<td>ii. CV blood test</td>
<td>1. Review VS, HC and Medicare Questionnaires</td>
<td>A. Virtual tour of PC MC-10min</td>
</tr>
<tr>
<td>iii. Colorectal cancer</td>
<td>2. Address results based on the review of all 5 components;</td>
<td>B. 20-minute- common health topics for seniors: preventive screenings</td>
</tr>
<tr>
<td>v. Glaucoma</td>
<td>3. Educate 1:1</td>
<td>C. 20-minute on healthy nutrition</td>
</tr>
<tr>
<td>vi. HIV screening</td>
<td>4. Screenings and preventive services</td>
<td>and preventing malnutrition, constipation, osteoporosis</td>
</tr>
<tr>
<td>viii. Mammography</td>
<td>5. Use dot-phrase in AVS</td>
<td>E. AWV Program Education Binder</td>
</tr>
<tr>
<td>ix. Pap and pelvic exam</td>
<td>C. Post visit- AVS</td>
<td>III. Clinical session (10-15m)</td>
</tr>
<tr>
<td>x. Ultrasound for AAA</td>
<td></td>
<td>A. RNP Assessment and referral</td>
</tr>
<tr>
<td>b. vaccinations</td>
<td></td>
<td>B. 1:1 preventive schedule planning with patient (checklist)</td>
</tr>
<tr>
<td>i. Flu</td>
<td></td>
<td>+ use dot-phrase in AVS</td>
</tr>
<tr>
<td>ii. Pneumonia</td>
<td></td>
<td>IV. Post visit: AVS + checklist</td>
</tr>
<tr>
<td>iii. Hep B</td>
<td></td>
<td>V. Evaluation (3-10)</td>
</tr>
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APPENDIX C

GROUP AWV BINDER TABLE OF CONTENTS

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  • Insomnia
  • Natural ways to Manage Urinary Incontinence
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  • KP Resources
  • Where to Find My Important Papers
APPENDIX D

PERSONALIZED PREVENTIVE PLAN SCHEDULE (PAGE 1)

**Your Preventive Schedule**

<table>
<thead>
<tr>
<th>Health Topic</th>
<th>Date Done</th>
<th>Date To Do</th>
<th>Repeat when</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HEART HEALTH AND DIABETES SCREENING</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cholesterol test: TC 178 TRG 129 HDL 37 LDL 03</td>
<td>6/14</td>
<td></td>
<td>yearly</td>
</tr>
<tr>
<td>EKG Stenosis, severe 50%</td>
<td>7/14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes Screening:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fasting Blood Sugar 77</td>
<td>6/14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A1C 5-1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urine Microalbumin: Normal: less than 30</td>
<td>1/15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creatinine (kidney test): Normal: 0.7 - 1.3</td>
<td>1/15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DM foot exam</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eye Exam: Retinal exam/photo</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refraction</td>
<td>7/13</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PREVENTIVE CARE</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Abdominal Aneurysm Screening (US)</td>
<td></td>
<td>Not needed</td>
<td></td>
</tr>
<tr>
<td>Oral Health (See your dentist)</td>
<td></td>
<td>1-2x a yr</td>
<td></td>
</tr>
<tr>
<td>Bone Health (DEXA): Low bone mass</td>
<td>0/14</td>
<td></td>
<td></td>
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<tr>
<td>Osteoporosis</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Breast Cancer Screening (Mammogram):</td>
<td>2/15</td>
<td>2/14</td>
<td></td>
</tr>
<tr>
<td>Benign</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Cervical Cancer Screening (Pap Test):</td>
<td>2/14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(not needed after age 65)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Prostate Cancer (PSA not needed after 3 normal)</td>
<td>2/14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colorectal Cancer Screening:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FOBT (stool test)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sigmoidoscopy/ Colonoscopy</td>
<td>2/7</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>IMMUNIZATION</strong></td>
<td></td>
<td>9/14</td>
<td>9/15</td>
</tr>
<tr>
<td>Influenza/flu</td>
<td>11/1</td>
<td>11/15</td>
<td></td>
</tr>
<tr>
<td>Pneumococcal</td>
<td></td>
<td>2/2007</td>
<td></td>
</tr>
<tr>
<td>Tetanus/Pertussis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis B (x3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shingles shot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>YEARLY WELLNESS VISIT</strong></td>
<td></td>
<td></td>
<td>yearly</td>
</tr>
<tr>
<td>LIVING WILL - complete and bring/send a copy to:</td>
<td>9/9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kaiser Permanente, Medical Records</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13652 Cantara Street, North 3, Panorama City, CA 91402</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Keep this record handy where you can easily find it.*
## Resources Numbers

<table>
<thead>
<tr>
<th>Health Topic</th>
<th>*Department Phone Number</th>
<th>Notes</th>
</tr>
</thead>
</table>
| **Blood pressure**
(The goal is 139/88 or less) | | |
| **Body Mass Index (BMI)**
(Normal: 18.5 to 25. Overweight: 26 to 29.9. Obese: 30 & above) | | |
| **Exercise:**
- Continue your regular exercise.
- Slowly increase your exercise to goal.
- Attend Exercise Class Orientation (free) | (818) 375-3018 | Your goal is to exercise for 150 minutes each week; or walk 10,000 steps a day. |
| **Nutrition:**
- Attend to Weight Orientation Class
- Nutrition Consultation | (818) 375-3096, (818) 375-3018 | |
| **Alcohol:** 1 alcoholic drink is equal to 12 oz beer, 5 oz wine, or 1 oz hard liquor.
- Behavioral Health and Addiction | (818) 758-1200 | Limit alcohol each day:
- Men: 2 drinks or less
- Women: 1 drink or less |
| **Smoking:**
- Please read “Smoking Cessation Strategies”
- Smoking Cessation Class | (818) 375-3018 | |
| **Depression:**
- Depression Class
- Social Services | (818) 375-3018, (818) 375-2977 | |
| **Sleep:**
- Sleep Well Class | (818) 375-3018 | |
| **Urinary Incontinence:**
- Bladder Control Class | (818) 375-3018 | *Do Kegel exercises* |
| **Fall Prevention/Balance and Muscle Strength:**
- Physical Therapy | (818) 375-1607 | *Timed voiding* |
| **Daily Living:**
- Social Services | (818) 375-2977 | |
| **Healthy Living Helpline:** KP Lifestyle coaches can help you quit smoking, lose weight, get active or fit, and eat healthy. Call a lifestyle coach. Monday - Friday 8:00am - 4:30pm | Lifestyle coach (866) 403-4320 | |
| **Health Education Department:**
- Mammogram: Panorama City Radiology
- Mammogram: Santa Clarita Radiology
- DEXA scan (Bone density test)
- DM Retinal (Eye Exam) (Pan City/SCL)

*PC Health Ed. Department - Rev. 2/15*
How to Read and Understand Your “Report Card” or Care Management Summary Sheet (CMSS)

Kaiser Permanente Panorama City

Your name
Your Doctor’s name
Last BP (blood pressure): The goal is 139/89 or less.

Recommended Care

Kaiser Permanente is here to provide you with excellent care. We have listed what you still need to help us reach this goal. If there are no recommendations, you have currently reached that goal. (Example) Start aspirin in 81 mg daily.

Diseases/Risks

ASCVD/FRS: (Framingham Risk Score) 0% to 20% is your estimated risk of having a heart attack or stroke in 10 years. 10% is high risk.
CAD: Coronary Artery Disease includes heart attack, angina, balloon, and heart bypass.
CKD: Chronic Kidney Disease (Stage 1, Stage 2, Stage 3, Stage 4, Dialysis).
CVD: Cardiovascular Disease includes CAD, DM, HF, HTN, Hypertension or high blood pressure (BP), AMI or Acute myocardial infarction (heart attack).
Asthma: narrow airways causing wheezing and shortness of breath.

Drug: 4 Lifesaving Heart Medicines

1. Aspirin: Dose: 81 mg to 325 mg
2. Vasodilators: medicines that widen blood vessels. Both ACE (Angiotensin Converting Enzyme) inhibitor and ARB (Angiotensin Receptor Blocker) block the effect of angiotensin, a hormone that tightens blood vessels.
   - ACE inhibitor: lisinopril, captopril, etc.
   - ARB: cozaar or losartan, if you cannot take an ACE-inhibitor.
   - Hydralazine plus isosorbide are used if you are an ACE-inhibitor or ARB.
3. Beta-blockers: medicines that block the effect of the stress hormone or adrenaline.
   - Carvedilol or Coreg
   - Metoprolol or Lopressor
   - Bisoprolol or Zebeta
   - Atenolol or Tenormin
4. Statins or cholesterol medicines - lower cholesterol and prevent plaques from breaking, which cause a heart attack or stroke.
   - Lovastatin or Mevacor
   - Simvastatin or Zocor
   - Atorvastatin or Lipitor
   - Vytorin (Ezetimibe [Zetia] and simvastatin)
   - Rosuvastatin (Crestor)

Laboratory values (Last 2 in 12 months)

- A1C is the average blood sugar in 3 months.
- Albumin 3.3 to 4 & Prealbumin 20 to 40: test for malnutrition.
- ALT is a liver function test. Normal is less than 54.
- Calcium Normal range: 8.5 to 10.
- CR: Creatinine is a test to measure kidney function. Normal: 0.6 to 1.1. Increased with CKD.
- FBS: Fasting blood sugar. Normal: 80 to 120.
- GFR: Glomerular Filtration Rate is a kidney function test. Normal range: 30 to 60.
- Potassium in the blood. Normal range: 3.5 to 5.
- TSH: Thyroid stimulating hormone. Normal range: 0.35 to 4.
- Vitamin D Normal range: 50 to 100. Between 40 to 50 ng/ml:

CHOL means cholesterol. Target level is less than 200.
TRG means triglycerides. Target level is less than 150.
HDL means High Density Lipoprotein or good cholesterol. Target level is 40 and above for men, 50 and above for women. Sixty and above is protective.
LDL means Low Density Lipoprotein or bad cholesterol. For CVD patients the target level is below 100, close to 70 for people who have CAD, DM, or had a heart attack.

Are your numbers at goal? See reverse side.

Please talk to your doctor or provider if you have any questions. Health Education Dept. 8/11
HOW TO READ AND UNDERSTAND YOUR CMSS (PAGE 2)

Are you at goal?

Having your numbers at goal will help you live longer and healthier.
Place a “✓” under the green, yellow, or red column for your health measures.

<table>
<thead>
<tr>
<th>You are at goal if your ✓ marks are in the green column.</th>
<th>Green</th>
<th>Yellow</th>
<th>Red</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood pressure</td>
<td>139/89 or less</td>
<td>140/90 to 159/109</td>
<td>160/110 and up</td>
</tr>
<tr>
<td>Total Cholesterol</td>
<td>Less than 200</td>
<td>200 and above</td>
<td></td>
</tr>
<tr>
<td>Triglycerides (body’s fuel for energy)</td>
<td>Less than 150</td>
<td>130 to 189</td>
<td>200 and up</td>
</tr>
<tr>
<td>HDL –cholesterol (good chol)</td>
<td>Men: 40+</td>
<td>Women: 50+</td>
<td>Men: 30 or less</td>
</tr>
<tr>
<td>LDL –cholesterol (bad chol)</td>
<td>Less than 100</td>
<td>100 to 130</td>
<td>130 and up</td>
</tr>
<tr>
<td>Fasting blood sugar (FBS)</td>
<td>99 or less</td>
<td>100 to 119</td>
<td>120 and up</td>
</tr>
<tr>
<td>A1c (average blood sugar in 3 months)</td>
<td>4.8 to 5.6 (normal A1c)</td>
<td>5.7 to 6.4 (pre-diabetes)</td>
<td>6.5 and above (diabetes)</td>
</tr>
<tr>
<td>A1c goal, if you have diabetes</td>
<td>If diabetic: 6.9 or ✓</td>
<td>7 and above</td>
<td>8.5 and above</td>
</tr>
<tr>
<td>Exercise or physical activity (walking, dancing, doing household chores, gardening, etc.)</td>
<td>150 minutes/week</td>
<td>Less than 150 minutes/week</td>
<td>Sedentary</td>
</tr>
<tr>
<td>Smoking</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>BMI (body mass index)</td>
<td>18.5 to 24.9 (normal)</td>
<td>25 to 29.9 (overweight)</td>
<td>30 and above (obese)</td>
</tr>
<tr>
<td>Waist circumference</td>
<td>Women: 34 inches or less</td>
<td>35 inches or more</td>
<td>40 inches or more</td>
</tr>
<tr>
<td></td>
<td>Men: 40 inches or less</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What will you do to live healthier and longer?

What would you do when something gets in the way?
APPENDIX F

GROUP ANNUAL WELLNESS VISIT EVALUATION FORM

Name (optional) ______________________________________________________

Date _____________________________

<table>
<thead>
<tr>
<th>Please circle your answer.</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I learn more about healthy aging and healthy lifestyle.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2. I learn about what I can do to prevent or manage problems common among adults 65 +</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3. My health history, medicines and lab and test results were reviewed with me.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>4. Reviewing my lab and test results helped me understand my health goals.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>5. I understand my preventive screening schedule.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>6. The presenters answered my questions</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>7. The binder is a useful tool for me.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>8. I would recommend this class to anyone 65 and over.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

9. The length of the class was:  □ Good  □ Fair  □ Poor

10. How sure are you that you can follow or complete your preventive schedule?
(Not sure) 0 1 2 3 4 5 6 7 8 9 10 (Very Sure)

11. What I found most helpful: ___________________________________________

12. Other topics would be helpful to me: __________________________________

13. Comments or suggestions: ____________________________________________

Thank you for your time!

Panorama City Health Education Department
01/2013

Kaiser Permanente
APPENDIX G

GROUP ANNUAL WELLNESS VISIT EVALUATION ANALYSIS

Medicare Group Annual Wellness Visit Evaluation Analysis
153 Medicare Group Annual Wellness Visit evaluation forms were collected from April 24, 2014 - April 6, 2015

- 98.0% said the binder was a useful tool
  o 37 - agree
  o 123 - strongly agree
  o 1 - disagree
  o 2 - missing

- 99.3% said he/she would recommend this class to anyone 65 and over
  o 22 - agree
  o 130 - strongly agree
  o 1 - missing

- When asked his/her opinion about the length of the class:
  o 90.8% said it was good (139)
  o 5.8% said it was fair (7)
  o 0.7% said it was poor (1)
  o 2.6% were missing (6)

- On average, reported confidence level was 8.5 out of 10 in following/completing his/her preventive action plan.

- When asked what he/she found most helpful, some responded:
  o "Everything was helpful"
  o "Moving into/Leaving clinic sharing my prevention schedule with me"
  o "General presentation coupled with binder and handouts"
  o "Screening tests for prevention"
  o "Going over areas in the booklet on healthy eating"
  o "Going through my lab test results and explain it"
  o "Controlling your health problem particularly your eating habits"
  o "Was both the class and the one-on-one with the nurse"

- Comments and suggestions made:
  o "Glad I came today"
  o "Well worth the time. Two lovely ladies who taught the class."
  o "Shannon was extremely informative and up to date. Very thorough!"
  o "Leanne did an excellent presentation, very pleasant. Monette did a thorough explanation of all the things I should be aware of. They both were a $10 in excellence."
  o "Energy of presenter was very helpful covering what would easily be "dry material."
  o "Very good class. Leanne and Monette did a wonderful job of making me feel secure of the information."
  o "I was highly surprised and pleased with the program today. It was not what I expected. Thank you! Leanne and Monette are awesome!"
  o "A worthwhile class"
APPENDIX H1

2015-2016 KP SOCAL MEDICARE EXAM MEASUREMENT REPORT:
DEPRESSION SCREENING

2015 KP SoCal Depression Screening

#2. Percent PHQ9s completed (scored) when member scored positive for depression risk. (Question 11 & 12)

2016 KP SoCal Depression Screening

PC: Panorama City
APPENDIX H2

2015-2016 KP SOCAL MEDICARE EXAM MEASUREMENT REPORT: FALL RISK SCREENING

2015 KP SoCal Fall Risk Screening

![Bar chart showing percent with TUG completed when scored positive for fall risk (Question 13) for different quarters and regions.]

Key Metric for 2016: Goal 50%

PC: Panorama City

2016 KP SoCal Fall Risk Screening

![Bar chart showing percent with TUG completed when scored positive for fall risk (Question 13) for different quarters and regions.]

Key Metric for 2017: Goal 50%

PC: Panorama City
APPENDIX H3

2015 - 2016 KP SOCAL MEDICARE EXAM MEASUREMENT REPORT: MEMORY LOSS SCREENING

2015 KP SoCal Memory Loss Screening

PC: Panorama City

2016 KP SoCal Memory Loss Screening

PC: Panorama City
APPENDIX I 1

2012-2016 DATA COMPARISON OF INDIVIDUAL AWV AND GROUP AWV (PANORAMA CITY)

Depression Screening

MWE = individual Medicare AWV
MWEG = group Medicare AWV

<table>
<thead>
<tr>
<th>Quarter</th>
<th>MWE20 &amp; MWE40</th>
<th>MWEG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1-2012</td>
<td>78.85%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Q2-2012</td>
<td>75.68%</td>
<td>75.00%</td>
</tr>
<tr>
<td>Q3-2012</td>
<td>77.19%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Q4-2012</td>
<td>78.00%</td>
<td>84.21%</td>
</tr>
<tr>
<td>Q1-2013</td>
<td>74.26%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Q2-2013</td>
<td>76.03%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Q3-2013</td>
<td>73.56%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Q4-2013</td>
<td>73.95%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Q1-2014</td>
<td>79.01%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Q2-2014</td>
<td>70.06%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Q3-2014</td>
<td>67.48%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Q4-2014</td>
<td>64.60%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Q1-2015</td>
<td>67.86%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Q2-2015</td>
<td>69.57%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Q3-2015</td>
<td>58.18%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Q4-2015</td>
<td>59.52%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Q1-2016</td>
<td>75.47%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Q2-2016</td>
<td>56.82%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Q3-2016</td>
<td>84.62%</td>
<td>85.71%</td>
</tr>
</tbody>
</table>

MWE = individual Medicare AWV
MWEG = group Medicare AWV
APPENDIX I 2

2012-2016 DATA COMPARISON OF INDIVIDUAL AWV AND GROUP AWV (PANORAMA CITY)

Timed Up and Go Test

- MWE = individual Medicare AWV
- MWEG = group Medicare AWV
APPENDIX I 3

2012-2016 DATA COMPARISON OF INDIVIDUAL AWV AND GROUP AWV (PANORAMA CITY)

*MWE = individual Medicare AWV
*MWEG = group Medicare AWV

*Completion of CDT is a component of the Mini-cog test monitored for regional reporting.
## APPENDIX J

### PHASES OF THE PRECEDE-PROCEED MODEL IN THE GROUP AWV

<table>
<thead>
<tr>
<th>PRECEDE Phase or Diagnostic Phase</th>
<th>Description</th>
<th>Assessment Method</th>
<th>Specifics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1: Social assessment</td>
<td>Predisposing factors: Social and health problems affecting • Quality of life • Concerns • Stressors, • Priorities, Support/pressure • Activities</td>
<td>• Online literature review on aging • Online review of CMS requirements • San Fernando community assessment data • Southern California (SC) KP Medicare membership data • SC KP Wellness Questionnaire</td>
<td>Social measure: • Quality of life, stressors</td>
</tr>
<tr>
<td>Phase 2: Epidemiological assessment</td>
<td>• Senior health problems • Co-morbidities • Risk factors • Environmental factors</td>
<td>• POINT data • Anthropometric measurement • Medical and administrative records</td>
<td>• Height, weight, BMI • Chronic diseases • Findings included in healthy aging/lifestyle in curriculum</td>
</tr>
<tr>
<td>Phase 3: Educational and ecological assessment</td>
<td>• Patient predisposing factors: knowledge and beliefs, lifestyle, health needs, and confidence in motivation to change • Reinforcing factors: HCP and administrative attitudes, presence and support of family members • Enabling factors: accessibility and availability</td>
<td>• Literature review on healthy aging • SC KP Medicare Wellness Questionnaire • Health concerns common among the elderly • Patient skills • HCP motivational interviewing skills • Org. factors: KP HealthConnect, embedded EV guidelines in the system, timely reminders and BPA on the computer</td>
<td>• Learning objectives • Educational topics included in development of curriculum, group AWV binder, handouts • Instructor and participant educational materials Health Education classes • Support group • Collaboration</td>
</tr>
<tr>
<td>Phase 4: Administrative and Policy assessment</td>
<td>Predisposing and enabling factors: Organizational and administrative support, budgetary and staff requirement and availability</td>
<td>Organization: SoCal KP utilization data review Regional policy assessment – identified new program and policy needed for AWV</td>
<td>Regional consultant hired Regional TC Planning committee meeting Inclusion of all stake holders Strategies for increasing awareness-raising information</td>
</tr>
<tr>
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<td>---</td>
</tr>
<tr>
<td>PROCEDE phases (Evaluation) Phase 5: Implementation</td>
<td>Pilot group AWV Participant recruitment Pre-visit The visit: Health risk assessment, documentation Screenings for depression, fall risk, memory loss Aftervisit: follow-up, referrals</td>
<td>Timeframe/ Gantt Chart Pilot testing Group AWV chart audit</td>
<td>Program development and modification Recruitment incentives Chart audit results Pre-visit PPS development during chart review CMS reimbursements</td>
</tr>
<tr>
<td>Phases 6, 7, 8 Process, Outcomes, Impact Evaluation</td>
<td>Evaluations-process, impact, outcome</td>
<td>Number of AWV participants Measurement of AWV quality indicators (provider performance) Number of appropriate referrals to specialists</td>
<td>Environmental re-evaluation Established AWV protocols Provider completion of PHQ9, TUG test and Clock Drawing Test</td>
</tr>
<tr>
<td></td>
<td>Cost saving calculation</td>
<td>Indicator of Patient Centered care (PCC): patient satisfaction</td>
<td>Estimate of cost savings</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------</td>
<td>---------------------------------------------------------------</td>
<td>--------------------------</td>
</tr>
</tbody>
</table>

- Cost saving calculation
- Indicator of Patient Centered care (PCC): patient satisfaction
- Estimate of cost savings
**APPENDIX K**

**TABLE OF EVIDENCE FOR GROUP VISITS (OR SHARED MEDICAL APPOINTMENTS)**

<table>
<thead>
<tr>
<th>Purpose (Author, year)</th>
<th>Design &amp; Key Variables</th>
<th>Sample &amp; Setting</th>
<th>Measures</th>
<th>Key Findings</th>
<th>Author’s Conclusions</th>
<th>Limitations /Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examine the evidence for the use of group clinics in pts who have chronic health conditions. (Booth, Cuntrell, Preston, Chambers, &amp; Goyder, 2015)</td>
<td>Systematic review-GVs</td>
<td>82 papers (majority on DM), 13 SRs and 22 RCTs; supplemented by 12 qualitative papers (10 studies), 4 surveys and 8 cost studies. Setting: US-17 studies, China-2 studies, Italy-2 studies, Norway-1 studies, UK-0</td>
<td>Disease specific outcomes: A1c, BP, cholesterol, QOL, costs, feasibility</td>
<td>Improved A1c, SBP, but not LDL on DM studies; disease-specific QOL. Equivocal evid. on cost savings, feasibility. Self-management in GV improved BS, A1c, SBP, wt., DM knowledge, DM meds. Important to pts: physical space, flexible appointment system.</td>
<td>Consistent and promising evidence for GV effects on biomedical measures, not found across all outcomes due to methodological issues, inconsistent use of labels and definitions of intervention, missing details of interventions. Much evidence came from US.</td>
<td>Telescoped, rapid review -half the time of conventional SRs. Focus on recent evidence from RCTs. Few minority groups represented, significant weaknesses in studies, selection bias, liberal interpretation of attendance.</td>
</tr>
<tr>
<td>Evaluate whether GVs can lower healthcare utilization outpt charge for pts with DM (Clancy, Dismuke, Magruder, Simpson, &amp; Bradford, 2008)</td>
<td>Randomized controlled study</td>
<td>186 pts with A1c &gt;8.0% at the Adult Primary Care Center, Medical University of South Carolina, South Carolina, 96 randomized to GVs, 90 to receive UC. Charges (outpt visits, ED visits, inpt stays) at the end of 12 months; abstracted from the UB-92 and HCFA-1500 records</td>
<td>Lower ED expenditures (49.1%, $p &lt; .001$), and lower total expenditures (30.2%, $p &lt; .05$). An estimated treatment effect model of specialty care visits showed GV specialty care visits by 4.15 visits.</td>
<td>Monthly GVs give more frequent pt contacts, more opportunities to address process-of-care indicators, share consistent information to multiple pts at once. GV treatment specialty care visits, which $\Delta$ outpt costs.</td>
<td>Providers not randomized, treated pts in both groups. -Charges not captured if pts saw providers outside the system. Only local inpt, outpt, and ED charges were captured.</td>
<td></td>
</tr>
<tr>
<td>Purpose (Author, year)</td>
<td>Design &amp; Key Variables</td>
<td>Sample &amp; Setting</td>
<td>Measures</td>
<td>Key Findings</td>
<td>Author’s Conclusions</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>17 in the same building as the clinic. UC access to dietician and diabetes educator; quarterly visits for 12 months</td>
<td></td>
<td></td>
<td></td>
<td>Using the treatment effect model estimate output charge model to control for potential endogeneity.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DV: total charges after 12 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluate the effectiveness of a nutrition-based SMA in the treatment of prediabetes compared to the individualized counseling (Cole, Boyer, Spanbauer, Sprague, &amp; Bingham, 2013)</td>
<td>RCT</td>
<td>N=34 SMA, 31 control. Setting: Army Hospital, Texas</td>
<td>Wt, BMI, FBS,</td>
<td>White (64%); male (54%); age, 58.3 +9.6 yrs; BMI, 30.8 + 4.9 kg/m2 (obese); FBS, 109 +9.5 mg/dl. SMA mean wt loss: 6.6 lbs vs. 3.6 lbs, UC ($p = &lt; .05$); neither met the 5% wt loss expected. Both groups mean drop in FBS, 6 mg/dl.</td>
<td>SMA health outcomes were equivalent to individual counseling outcomes, providers productivity by treating 6 to 8 people with pre-DM in 90 minutes compare to 1 pt in 60 minutes.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IV: SMA vs. individual counseling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>DV: anthropometric, clinical, biochemical measures at baseline, 3 and 12 mos.</td>
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<td>Evaluate potential mechanism by which group medical clinics may affect lipid outcomes.</td>
<td>Secondary analysis of pts in RCT</td>
<td>N = 239: GV, 133; UC, 106 Setting: Veterans Medical Clinic</td>
<td>Levels of TC, LDL, HDL, Triglycerides</td>
<td>215 (90%) completed midpoint F/U, 211 (99%) completed trial. Baseline LDL-C at goal (&lt;100) - 58% both arms. GV, at</td>
<td>Veteran population with poor DM control and HTN control, not selected based on poor lipid control, increased</td>
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<td>IV: Chol.-lowering meds</td>
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<td>(Crowley et al., 2014)</td>
<td>intensification (GV vs. UC) DV: LDL assessed at baseline, midpoint, end. (GV vs. UC)</td>
<td>end, lower: Mean TC, 14.2 mg/dL ($p = .01$); LDL-c, 9.2 mg/dl ($p = .02$). 76% of GV pts at goal for LDL-C vs. UC, 61% ($p = .02$). Trig., HDL-C unchanged. GV: 52% vs. 37% in UC ($p = .04$). Mean statin dose ↑in GV at midpoint/end.</td>
<td>meds in GVs. Support GV as effective strategy for CVD risk-factor management.</td>
<td>likelihood of Type II error. Post hoc intensification analysis. Focus on ezetimibe and statin for treatment analysis; excluded fibric acid, niacin, fish oil.</td>
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<td>Examine behavior changes after implementation of SMA for pts with DM and HTN (Dickman, Pintz, Gold, &amp; Kivlahan, 2012)</td>
<td>Pretest-posttest quasi-experimental study IV: SMA (team: NP, MD, CDE, medical assistant; 8-12 participants /GV 90 minutes. $5$ co-pay waived; incorporated self-management support) DV: self-management behaviors (exercise)</td>
<td>Behavioral Risk Factor Surveillance System (BRFSS) Questionnaire on exercise modified for low literacy and language. Self-report using recall within the past month Pt survey of GV rating</td>
<td>80% attended all sessions in spite of limited access to transportation. SMA - significant □ in exercise time by 86 min/wk ($p = .002$, 95% CI) 97% either achieved or almost achieved goals. 95% rated SMA as excellent or very good. All reported improvement in their health and would participate in SMA again.</td>
<td>SMA effective, flexible approach to meeting needs of a primary care practice. SMAs need to be tailored to pts’ needs, and literacy level, cultural beliefs, and attitudes.</td>
<td>Limitations include lack of randomization, small sample size, short duration, one clinical setting, lack of a comparison group, use of recall or self-report. SMA more frequent visits (monthly) may have influenced outcomes. Several participants perceived 90-minute appointment as a barrier. Pts who attended may be a self-selected group</td>
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<td>Evaluate the feasibility and effectiveness of GV for pts with Parkinson Disease (PD) (Dorsey et al., 2011)</td>
<td>RCT, unblinded IV: Group visit: 90 mins. led by 1 of 3 study MDs: 5 min - introductions, 10 min pt updates, 40-min group education on topic chosen by participants, 20 minutes Q&amp;A. GV - 4 sessions over 12 months. Pts had individual visits as well. UC: 1 on 1 w/ PCP DV: feasibility of GV &amp; QOL</td>
<td>30 pts with PD, 27 caregivers who regularly attended. Seen by study MDs in Movement Disorders Clinic, University of Rochester, New York.</td>
<td>Feasibility measure = ability to recruit participants and completion rate. PD questionnaire-39 (PDQ-39) used to measure QOL a) EuroQol-5D and Unified PD Rating Scale total score measured PD sx b) Geriatric Depression Scale - measure satisfaction c) Zarit Burden Interview measure caregiver burden.</td>
<td>GV participants older, mean age = 72 y/o vs. UC = 66.7 y/o less female 33 vs. 40 (UC). No significant difference in the baseline characteristics of the pts and caregivers. No diff. between groups at 12 months on QOL, p = .60; PD symptoms, p = 0.99; depression, p = .23; cognition, p = .14; pt satisfaction, p = &gt; .99; or caregiver burden.</td>
<td>GV may be a feasible and alternative means of delivering care to individuals with PD. Lack of thorough one on one examination may cause MDs to miss subtle PD characteristics in GV. Reimbursement issue for group visits, in general may make GV difficult to sustain.</td>
<td>Limitations small sample size, single study site, variable size of groups and time spent with pts, 3 study MDs leading groups, homogenous group (all-White, HS graduates, mild to moderate PD). No qualitative analysis to determine feelings about group visits. Logistical issues may make it difficult to do GV.</td>
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<td>Test the effectiveness of GV in the management of comorbid DM and HTN</td>
<td>RCT IV: GV; 7-8 pts seen in same clinical setting, by care team (PC</td>
<td>239 pts Setting: 2 VA medical centers in North Carolina and Virginia</td>
<td>Measurement of A1c and SBP at 6 months and 12 months</td>
<td>Mean SBP improved by 13.7 mm Hg in GV group and 6.4 mm Hg in UC group (p = .011). A1c improved by 0.8% in GVs are a potent strategy for improving BP, but not A1c in diabetic pts.</td>
<td>Effectiveness may have been limited by concomitant improvements in UC group due to co-intervention.</td>
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<td>(Edelman, et al, 2010)</td>
<td>internist, pharmacist, nurse or Certified diabetic educator [moderated structured group interactions]. MD/PharmD adjusted BP and DM meds vs. UC – 1:1 with PCP</td>
<td>GV group and 0.5% in UC ($p = .159$)</td>
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<td>Understand GVs impact on outcomes among pts with DM. (Edelman, Gierisch, McDuffie, Oddone, &amp; Williams, 2015)</td>
<td>Systematic Review IV: Group Visits</td>
<td>17 studies comparing DM GVs with UC (13 RCTs, 4 observational studies)</td>
<td>GVs improved: a) A1c - 0.55% points (95% CI, -0.11 to -0.99); b) SBP - 5.2 mmHg (95% CI, -3.0 to -7.4). Not improved: LDL-C (-6.6 mg/dl [95% CI, 2.8 to -16.1]). significant heterogeneity among GV interventions</td>
<td>GV improved biophysical outcomes among participants with DM. Inadequate literature to determine effects on pt. experience, utilization and costs.</td>
<td>Heterogeneity among components of DM GVs. Methodologic problems found: a) lack of allocation concealment description, (b) lack of blinding to intervention, (c) incomplete data not addressed.</td>
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<td>Summarize effects of SMA on staff, pt, economic outcomes; evaluate whether impact varied by clinical condition</td>
<td>Systematic review IV: Group Visits and its components</td>
<td>3221 participants in 16 studies (13 RCTs on SMA in DM, 3 RCTs on high utilizer older adults)</td>
<td>PRISMA checklist Quality assessment assigned score (good, fair, poor) Random effects models to synthesize the effects</td>
<td>SMA team: Leaders: 1-2 clinicians (MD, pharmacist, RN). Members: MD (75%), NP (19%), Pharmacist (50%), RN (62%), (3%) PT, psychologist, Social Worker. Significant finding for SMAs (95% CI): impact on A1c (-0.6), SBP (-5.2 mm Hg). Significant improvement in HRQOL in DM and older adults,</td>
<td>Lack of breadth to the types of pts and illness in the context of SMAs. No explicit data regarding system-level benefits.</td>
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<td>or specific intervention components. (Edelman, McDuffie, Oddone, Gierisch, &amp; Williams, 2012)</td>
<td>DV: (1) Pt and staff experience, treatment adherence, quality measures, symptom severity, functional status, and utilization, (2) pt characteristics (chronic conditions and severity of disease), (3) intervention effects.</td>
<td>Most studies multidisciplinary, group size of 6 to 10, as large as 26. Planned visit frequency was from every 3 weeks to every 3 months and median of 2 hours.</td>
<td>quantitatively, weighted difference of the means</td>
<td>health educator, social worker (13%). 6 studies QOL measure, 5 had outcomes. SMAs associated with □HRQOL (p = .02) &gt; when disease-specific measure used (p &lt;.0001). Two RCTs on older adults, mean age: 73.5 to 78.2. □levels of satisfaction with GVs; rated quality of care 0.3 point ↑ on 1-to-4 scale (p = .048). Pts with □interest in GV had &lt; 2 visits over 24 months (25% pts). Total costs ↓[for SMA (-$178 to $1599), varied across studies (p &gt; .05) Baseline A1c not associated with effects.</td>
<td>Functional status not affected. Older adults - lower health care utilization. Lower hospitalization -most consistent- effect in DM. DM studies have external validity limitations. Unable to capture specific features of SMAs to predict improved clinical outcomes due to heterogeneity of the studies. Not enough evidence to base implementation of SMAs, except in DM.</td>
<td>Analysis limited by small number of studies, indirect comparison, and ecological fallacy Lack of adequate description of components of SMA-difficult to replicate, especially group education content. Varied outcomes made reporting of observed variability unsuccessful. Further studies that allow for comparisons across conditions, other than DM are needed. Efficacy trials in fee-for-service setting needed to determine extent SMAs work when profit motive is removed.</td>
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<td>Examine association of SMAs with pt experience in primary care.</td>
<td>Cross sectional study</td>
<td>921 SMA pts and 921 UC pts between 2008 and 2010</td>
<td>Mailed surveys of pt satisfaction and experiences of care received.</td>
<td>SMA: Men (57%), UC: men (55%) No baseline differences. SMA pts - more timely access to care</td>
<td>SMA can significantly increase satisfaction rate and more timely access to care than the UC.</td>
<td>Lack of randomization and nonresponse bias: survey response rates were 40% for SMA and 31% for usual care.</td>
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<td>(Heyworth et. al., 2014)</td>
<td>primary care internist individually. Includes another team member (social worker, psychologist, or NP) vs. UC</td>
<td>Large multispecialty group practice in eastern Massachusetts</td>
<td>Questionnaire measured levels of satisfaction and pt-centered care experiences across key domains of the pt centered medical home, (i.e., care access, coordination of care, and team-based care)</td>
<td>(OR 1.49; 95% CI 1.21-1.92, p &lt; .001), convenience of office hours (OR 1.22; 95% CI 1.02-1.45; p &lt; .03), wait for lab tests (OR 1.49; 95% CI 1.21-1.92; p &lt; .03), ↑overall satisfaction (OR 1.26; 95% CI 1.05-1.52; p &lt; .01).</td>
<td>Majority of the participants are white and older.</td>
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<td>Measure effect GV on biophysical, process-of-care and pt-outcomes among pts with DM1 and DM2. (Housden, Wong, &amp; Dawes, 2013)</td>
<td>SR and Meta-analysis</td>
<td>26 studies, 13 were RCTs; 3112 participants in GV, mean age: 59.3; men, 56%</td>
<td>Biophysical: A1c DM QOL Questionnaire</td>
<td>Overall effect of GV on A1c -0.62, 95% CI -1.23 to 0.01). No diff. in SBP, DBP, BMI QOL weighted mean diff -29.30, 95% CI -60.64 to 2.05). Process of care outcomes insufficient.</td>
<td>GV effective in reducing A1c. Small decrease has substantial clinical impacts: 1% △ = 37% in microvascular complications, 14% reduction in MI and 21% reduction in mortality from DM. Few long term studies on effectiveness of GVs for DM Restricted to only English published studies.</td>
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<td>Evaluate the early effects of the elimination of pt cost-sharing under Part B on the use of Analytical research</td>
<td>2012 Data from MEPS: Medicare Senior beneficiaries. Traditional Medicare,</td>
<td>Self-reported 8 preventive services include cholesterol test, BP check, flu vaccination, endoscopy, fecal occult blood test, PSA test, breast</td>
<td>More women than men had supplemental public coverage (p &lt; .001) Post ACA, less beneficiaries (17.3%) had traditional</td>
<td>No significant change except flu shot, cholesterol check, colorectal screening. Too small # (3%) to affect utilization Lack of △ r/t</td>
<td>Limitations: None stated Good article on barriers for utilization</td>
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<td>Preventive services.</td>
<td>for preventive services) DV: 8 preventive services utilization</td>
<td>Medicare Managed Care Traditional Medicare + public, Setting: United States</td>
<td>examination, mammography, MEPs were used to test the effects of the Pre-ACA period from 2008 – 2010 and the post-period, 2012.</td>
<td>Medicare only, compared to 19% pre-ACA. No consistent pattern of change on preventive service utilization in the combined insurance groups. Flu shot and cholesterol checks □, endoscopy and FOBT □.</td>
<td>(a) nature of insurance (b) decision making (c) lack pt. awareness (d) lack counseling by MD for screening (e) pt comorbidities (f) poor functional status (g) MD focus on acute care issues (h) MD lack of time with pts (i) language barriers.</td>
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<td>Determine feasibility of GV to provide care to Chinese pts with HTN; compare effectiveness GVs with usual medical appointments.</td>
<td>RCT IV: GV based on Cooperative Health Care Clinic model, social cognitive theory; 30-min education, 60 mins. for individual consultation vs. UC DV: BP, compliance, self-efficacy (baseline vs. 6 months)</td>
<td>1024 pts, 24 General practitioners, 192 GV sessions Setting: Shanghai China</td>
<td>BP, BMI, med. adherence, physical activities, diet.</td>
<td>No diff. in groups and treatment x time interaction, 72.3% pts attended all sessions SBP □ in both groups. Self-reported health change (p = &lt; .009). Self-efficacy in managing symptoms, disease, physical activity (p &lt; .001). Med adherence □ 46.2% to 61% at f/u vs. UC 50.3% to 52.3%.</td>
<td>GVs -associated with lower BP, better treatment compliances, improved self-reported health status, increased self-efficacy, lower health distress. Coping skills. Randomization within outpt clinics of primary health care centers: pts may be familiar with each other and talked about intervention; older participants limit applicability to general population.</td>
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<td>Examine effectiveness of GV on self-management behaviors, self-efficacy and health status for pts with DM2 in rural communities of Shanghai. (Liu et al., 2012)</td>
<td>RCT RCT IV: GV: 1.5 hrs. group with individual visit, monthly x 12 GV vs. UC DV: Exercise time, self-efficacy, illness intrusiveness, SBP, health status.</td>
<td>N = 119, GV; 89, UC. Medical clinic in Shanghai, China</td>
<td>17 self-management behaviors, self-efficacy, health status related variables</td>
<td>Both groups: similar, mean age 61.99 ± 9.80. ↑GV pts with HTN, (63.0% vs. 47.2%), GV: □ duration of exercise ( &gt; 40 mins., ( p = .001 ), 0.71 □ mean self-efficacy score (( p = .02 )) lower scores for fatigue (( p = .001 )) and illness intrusiveness (( p &lt; .05 )) lower SBP -3.72, ( p = .04 ).</td>
<td>GV feasible, acceptable, effective alternative approach to improve outcomes among Chinese with DM in Chinese rural communities. Need larger studies to det. GV effect on blood sugar and healthcare utilization.</td>
<td>Older GV participants with higher prevalence of HTN, small sample size, 15% attrition rate.</td>
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<td>Evaluate the comparative effectiveness of EPIC DM2 GV interventions on HbA1c levels in primary care. (Naik et al., 2011)</td>
<td>RCT RCT IV: Both groups usual primary care. 2 DM GVs: in addition to UC, 1-hour 4 sessions every 3 weeks over 3 months on SM action planning, EPIC Group educ. by DM educator and RD followed vs. UC (no EPIC, just group education).</td>
<td>87 participants with DM2 Setting: VAMC, Houston, TX</td>
<td>A1c levels Self-efficacy</td>
<td>A1c at 3 months: EPIC GV: 8.04 (( SD 1.35; p = .03 )) UC: 8.70 (( SD 1.38 )) A1c at 1 yr: EPIC GV: 8.05 (( SD 1.40, p = .05 )) UC 8.64 (( SD 1.39 )). Self-efficacy Scale score: 3 months EPIC GV: 7.83 (( SD 1.19; p = .02 )) UC: 7 (( SD 1.90 )) Self-efficacy Scale score at 1 yr: EPIC GV: 7.03 (( SD 1.89, p = .17 )) UC 6.40 (( SD 1.99 )).</td>
<td>Clinical improvement achieved after 3 months in EPIC GV. Study highlights importance of goal setting and action plans in GVs and measuring behavioral process, e.g., self-efficacy</td>
<td>Limitations older veterans in 1 regional VAMC. Sample size and funding may have add to measurement error. EPCI GV had same or less content and diet details due to time spent on goal setting.</td>
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<td>Test effectiveness of SMAs on weight-loss in outpt setting (Palaniappan, Muzaffar, Wang, Wong, &amp; Orchard, 2011)</td>
<td>DV: A1c levels, self efficacy at 3 months and 1-year FU.</td>
<td>Nonrandom prospective study</td>
<td>BMI.</td>
<td>SMA participants mostly women (76% vs. 64%, p &lt; .05) and older: mean, 52.4 yrs., SD 13.1 yrs vs. mean, 47 yrs; SD 13.3 yrs, p &lt; .01) with higher baseline weight and BMI, p &lt; .01 than comparison group</td>
<td>There is significant mean BMI % change and weight loss in SMA participants vs. UC (gained wt). Significant weight loss and BMI reduction in women was associated with the total number of SMA visits.</td>
<td>No limitations mentioned. However findings cannot be generalized from a single clinic/provider site.</td>
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<td>IV: Weight-loss SMA - 90-min (60 min on individual pt. health concerns, 30 min on health topics). Both groups received same instructions adapted from DPP Lifestyle Balance program for 2 yrs. SMAs - 6 to 12 pts</td>
<td>N=356 pts with similar characteristics (sex, age, weight) with BMI&gt;25 kg/m2 in a single MD office at Palo Alto Medical Foundation</td>
<td>Eighty pts in the SMA in the same MD office.</td>
<td>Average weight loss in SMA group - 1% (- 2.0 lb) vs. a wt. gain 0.8% (+ 1.4 lbs) in UC. Average SMA participants attendance, 2.9 with a median of 6.4 weeks between visits.</td>
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<td>No mention of plausible cause of weight gain among pts in control group. However, group support may have influenced wt. loss in SMA group.</td>
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<td>UC - pts seen 1-on-1, similar instructions. DV: weight loss</td>
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<td>(1) Summarize GV characteristics in RCTs (pts with chronic illness),</td>
<td>Systematic Review IV: GV focusing on education for managing</td>
<td>87 publications</td>
<td>Arthritis, fall prevention, asthma, COPD, HTN, CHF, DM, or chronic pain.</td>
<td>GVs asso. with modest short-term improvements in A1c. Inconsistent results, varied</td>
<td>Difficult to draw conclusions on GV effectiveness. Longer term effects unknown. GVs may improve</td>
<td>Limitations: Heterogeneity in population studied, interventions tested, outcomes reported.</td>
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<td>(2) Assess effects on QOL, self-efficacy, health utilization, health outcomes, (3) Understand characteristics associated with GV effectiveness, (4) Examine components of GV structure, delivery. (Quinones, Richardson, Freeman, O’Neil, &amp; Kansagara, 2012)</td>
<td>chronic conditions in adults</td>
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<td>methodology = low strength of evidence for short-term improvement on: pt self-efficacy, reducing risk of falls in pts with hx of falls, exer. capacity w/ less decline in COPD, BP control in HTN, pain coping skills in pts w/ arthritis (GV w/ SM). (short-term), Strength of evidence low due to inconsistencies</td>
<td>short and medium-term pt. self-efficacy and other health measures. GVs are reasonable alternative for educating pts with chronic disease, not sole alternative.</td>
<td>Lack of studies on cost effectiveness.</td>
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<td>Test hypothesis of no difference in pt satisfaction with GVs vs individual care of pts with mental health conditions. (Remick &amp; Remick, 2014)</td>
<td>Non randomized, noncontrolled comparative study</td>
<td>111 consecutive pts who had received individual outpt follow-up for 2 to 25 years and switched to GVs (90% with a diagnosis of a mood or anxiety disorder) of single provider (who switched from individual visit to group visit) in a</td>
<td>Within-subjects factor was type of treatment (individual treatment, compared with GMVs). 1 year after switching to GVs, survey using questionnaire (5-point Likert scale) (a) satisfaction and perceived quality of care (b) perceived effect of treatment on mental illness stigma</td>
<td>55.6% females mean age 55.76 years. Ave. attendance: 4.89 GVs (SD 2.96). Treatment preference: 38.4% GVs, 31.3% none, 30.3% individual. No significant difference pt satisfaction GVs (mean 3.53, SD 1.28) significantly</td>
<td>No difference in pts’ experiences with individual psychiatric treatment and GVs. High pts satisfaction with GVs; no preference to the type of visit.</td>
<td>There are several biases resulting from non-randomization, small sample size, all participants were from a single provider (psychiatrist) clinic, and experience with GV may have been influenced by previous experience with the psychiatrist.</td>
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<td>Evaluate whether a single SMA for pts with chronic neuromuscular disease is more cost effective as compared to individual medical appointments. (Seesing, Groenewoud, Drost, van Engelen, &amp; van der Wilt, 2015)</td>
<td>RCT</td>
<td>Psychiatric clinic, British Columbia.</td>
<td>(c) preferred treatment: individual treatment, GMV, or no preference.</td>
<td>better than individual care (3.19, SD 1.33) in ↓ feelings stigma related to mental illness.</td>
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<td>IV: Single SMA 1.5-2 hrs as substitute for regular individual appointment</td>
<td>123 pts with chronic neuromuscular disease Setting: Netherlands</td>
<td>QALYs, EQ-5D index scale to evaluate QOL, use of resources: GP, specialist, social worker, hospital admissions, medication, home care and domestic help. Cost based on actual time spent by neurologist and group mentor. Cost of SMA and individual visit</td>
<td>Mean age: 50 Men: 63 (51%) mean of 16 mins. (range 11–30), less time per pt. Sensitivity analysis over 6 months: savings €329.45/ SMA pt. QOL: SMA group was .69 (SE .14) vs individual appointment group 0.74 (SE .16). SMA cost-effective when provider saw &gt; 6 pts</td>
<td>Unable to detect consistent significant differences in costs per QALY between SMA and individual appt.; evidence suggests economic impact of SMAs depends on group size and the proportion of pts being seen by their own neurologist. SMA pts could influence each other causing clustering effects and overrate the effect of SMAs.</td>
<td>Limitations: Six month FU may be too short to show differences in costs. Single setting may limit applicability of findings. Done in Netherlands and outcomes may be different, if study is done in US.</td>
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<td>Test the effect of group visits on improving self-care for heart failure pts. (Smith et al. 2014)</td>
<td>Unblinded, Randomized controlled trial</td>
<td>Hospitalized NYHA class III or IV HF pts at medical center in Kansas. Able to write and speak in English No planned heart transplant, ESRD (Cr &gt;4 mg/dl)</td>
<td>CV related death or first HF-related hospitalization. GV and DVD were rated by pts using 5-point Likert scale ranging from 1- not helpful to 5-very helpful.</td>
<td>Mean age = 62 y/o; Women 76 (38%) Baseline EF equivalent (x^2 = .69; p = .41). Ave. attendance GV pts - 4.6 of 5 group appts. Longer event-free time with</td>
<td>Multidisciplinary GV appointments were associated with greater medication adherence, longer hospitalization-free survival.</td>
<td>Limitations: (1) High rate of HF medication Rx at baseline on both groups could have lowered the anticipated HF-related re-hospitalization and death rate.</td>
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<td>different DVD on self-care topic at visits, how to complete self-management diary, given self-management summaries/visit.</td>
<td>unrected malignancy or other terminal illness</td>
<td>intervention group ($p = .04$). A secondary analysis looking at total HF-related hospitalization showed decreased hospitalization on SMAC-HF 28 vs 45 in UC.</td>
<td>(2) Long time before starting GV (3) This is a single center study. (4) English speaking only</td>
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<td>UC: visit with team; education from discharge nurse, FU call from NP w/in 3-7 days, MD clinic visit after month.</td>
<td>DV: first HF-related hospitalization, re-hospitalization, or death</td>
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Note. Asso. = Associated; BMI = Body Mass Index; BP = Blood Pressure; Chol = Cholesterol; CI = Confidence Interval; Creat = creatinine; D/C = discharge; DM = Diabetes Mellitus; DPP = Diabetes Prevention Program; CESDS = Center for Epidemiological Studies Depression Scale; DV = Dependent Variable; ECF = extended care facility; ED = Emergency Department; ESRD = end-stage renal disease; EPIC = Empowering Patients in Chronic Care; EQ-5D = EQ = EuroQol; FU = Follow up; GHAACSS = Group Health Association of America’s Consumer Satisfaction Scale; HC = Health Care; HF=heart failure; GPs = General Practitioners; GV = Group Visit; HCPs = Health Care Providers; HS = high school; HX = History; IV = Independent Variable; KCCQ = Kansas City Cardiomyopathy Questionnaire; LDL = Low Density Lipoprotein; MD = Physician; Min. = Minute; NMD = Neuromuscular Disease; NP = Nurse Practitioner; NYHA = New York Heart Association; OR = Odds Ratio; PD = Parkinson’s Disease; Pt = patient; QALYs = Quality Adjusted Life-Years; QOL = Quality of Life; RCTs = Randomized Controlled Trials; Rx = prescription; SD = Standard Deviation; SM = Self-management; SMA = Shared Medical Appointment; Tx =
Treatment; UC = Usual Care; US = United States; UK = United Kingdom; VAMC = Veterans Administration Medical Center; VS = Vital signs; Wt = weight; □ = change; △ increase; ▽ decrease.
# APPENDIX L

## TABLE OF EVIDENCE FOR MOTIVATIONAL INTERVIEWING (MI)

<table>
<thead>
<tr>
<th>Purpose (Author, year)</th>
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<tr>
<td>Investigate effect of a face to face MI counseling at reducing sitting time in community (Aadahl et al., 2014)</td>
<td>RCT, observer-blinded, open-end randomization into intervention group and usual lifestyle group</td>
<td>166 sedentary adults from US Health 2010 study</td>
<td>Measurement of sitting time, fasting serum insulin, and waist Circumference</td>
<td>149 completed study. Change in mean sitting time was statistically significant (-0.32 hours/day, 95% CI = -0.87, 0.24, p = 0.26).</td>
<td>Although there’s no significant change in sitting time, a community based evidence based intervention program may be effective for increasing and improving metabolic markers in sedentary adults.</td>
<td>Limitations: Lack of blinding of outcome assessors, uneven number of participants, measurement of diet not done, sitting time measurement (7-day baseline and follow-up) not representative of behavior in 23 weeks.</td>
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<td>Test feasibility and efficacy of MI intervention on self-care, acute HF physical symptoms and QOL. (Creber, Patey, Dickson,)</td>
<td>Prospective, pilot randomized trial (MITI-HF study) All received education materials</td>
<td>100 participants recruited, accounting for 35% attrition rate</td>
<td>Self-Care of Heart Failure Index</td>
<td>Mean age of participants is 61 years, mostly male (67%) and African American (57%). Majority (59%) have EF &lt; 35% and functionally compromised (85% NYHA class III/IV)</td>
<td>This study tests an innovative MI intervention with high potential for integration into transitional care discharge planning.</td>
<td>Limitations: Lack of objective self-care measure and high study attrition.</td>
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<td>DeCesaris, &amp; Riegel, 2015</td>
<td>followed by 3-phone calls over 90 days, help resolved barriers and ambivalence transition towards action planning. UC</td>
<td>DV: change in self-care maintenance: baseline to 90 days</td>
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<td>Explore and summarize the literature examining self-reported symptoms, illness experience, and self-care management in older pts with HF (Falk, Ekman,Anderson, Fu, &amp; Granger, 2013)</td>
<td>Integrative literature review of 23 empirical studies (5 qualitative and 18 quantitative) in English between 2001 and 2011</td>
<td>Populations of &gt;75 yr-old pts</td>
<td>-Self-reported symptoms: Kansas City Cardiomyopathy Questionnaire, Multidimensional Fatigue Inventory, Epworth Sleepiness Scale. -HRQoL: Minnesota Living with HF Questionnaire, Short Form -36, EuroQol-5D. Depression: Geriatric Depression Scale, Hospital and Anxiety Depression Scale.</td>
<td>Older pts with HF had severe, freq. fatigue, dyspnea, poor health-related QOL vs. controls. -50% reported frequent and severe fatigue associated with life dissatisfaction. Depression ↑ among pts with HF symptoms. -Cardiac rehab ↓ symptom severity early, but not at 5 yr f/u.</td>
<td>-Self-care is an issue for all HF pts regardless of age. -Neither self-management nor symptom monitoring was ideal in older pts. -More severe symptoms and frequent fatigue resulted in dependence on others. -MI, adjusted to health literacy of client led to self-care and self-efficacy in older pts with HF.</td>
<td>There was no limitation mentioned. Note: Need to implement MI to improve self-efficacy in older pts with HF and not expect them to do symptom monitoring.</td>
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<td>Provide description of principles of chronic cond. SM, common approaches, and benefits/challenges asso. with using approaches (Lawn &amp; Schoo, 2010)</td>
<td>Program formats: group session, one-to-one, face-to-face, a range of technologies.</td>
<td>Australia</td>
<td>Description of models, advantages, disadvantages, barriers: a) Stanford: peer lead group b) Flinders: care planning c) 5As: brief primary care approach d) MI e) Health coaching</td>
<td>Programs that enhance SM: (a) peer support group, (b) care planning process within and between systems of care with pt and supports, (c) tools enhancing interaction between pt, health professional</td>
<td>No one program superior to others. Various approaches, formal and informal, can enhance SM. MI and health coaching useful, complimentary; improve SM outcomes by supporting pt to adopt and sustain desirable behaviors.</td>
<td>None mentioned. 5 A’s components of MI. MI used in health coaching; this study separated/isolated them. Study done in Australia, findings may not be true if study done in US.</td>
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<td>Investigate MI’s efficacy in medical care settings. (Lundahl, et al., 2013)</td>
<td>Meta-analysis of RCTs IV: MI</td>
<td>48 studies (9618 participants), US</td>
<td>Self-efficacy, Target behavior, exercise, substance use, wt loss, HIV viral load, BP, cholesterol</td>
<td>Overall: OR = 1.155 (1.4, 1.71). Stage of disease did not moderate MI effects: primary prevention (OR = 1.38, CI: 1.14-1.68), secondary prevention (OR = 1.32, CI: 1.05-1.68), tertiary prevention (OR = 1.54, CI: 1.42-1.76,)</td>
<td>MI is efficacious for some target behaviors. MI outperforms traditional advice giving pts, had 1.5 x chance of improving a wide variety of health measures. Minimal investment on MI. MI can help providers use MI to influence exercise, lose wt.,</td>
<td>Tight inclusion criteria excluded relevant studies, few studies had some medical outcomes - made effect sizes estimates unstable. Inconsistent MI delivery.</td>
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<td>-Disability: Katz ADL-index and Disability Rating Index</td>
<td>-Better SM was predicted by more comorbid conditions. MI promoted performance of self-care, self-efficacy.</td>
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<td>Test the effectiveness of MI compared with UC for Chinese hypertensive pts. (Ma, Zhou, Zhou, &amp; Huan, 2014)</td>
<td>RCT</td>
<td>120 participants randomized to MI grp and UC</td>
<td>Demographics (age, gender, educational level, marital status), duration of diagnosis -Treatment adherence questionnaire of pts with HTN -General Self-Efficacy Scale -Medical outcomes study 36-item short form: domains of health, physical function, physical role, pain, health vitality, social function, emotional role and mental health. -Intention to treat analysis used</td>
<td>Ave age: 58 yrs ($SD = 11.68$) 10% attrition rate No significant diff. in baseline characteristics, BP, lab values. MI group -significant increased adherence in meds, diet, physical activity, smoking and alcohol cessation. Statistical difference in SBP(4.92), DBP (2.58) and significant improvement in QOL, ($p &lt; .05$), self-efficacy ($p &lt; 0.05$)</td>
<td>Use of MI counseling ensures pts with HTN comply with treatment recommendations Positive effect of MI in decreasing SBP and DBP.</td>
<td>Limitations: - Short study duration, 6 mos. -small sample size and 14 drop out -Nurse unblinded -Nurses are acquainted with each other -Use of self-report tool for adherence</td>
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<td>(1) Examine evidence for MI, for multimorbidity (2) recommend integration of intervention into Systematic Review guided by PRISMA</td>
<td>12 SRs Setting: Australia</td>
<td>Clinicians delivering MI interventions, Treatment fidelity and MI training</td>
<td>Overall MI effect sizes range: from Cohen’s $d = .18$ (95% CI $0.10, 0.37$) to Cohen’s $d = .77$ (95% CI $0.35, 1.19$).</td>
<td>MI may be a helpful approach to healthcare across a range of single diseases and behavior changes</td>
<td>Evaluated only MI for single diseases, Limited to English publications, lack of specific information</td>
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<td>healthcare (3) discuss potential of MI in clinical area (McKenzie, Pierce &amp; Gunn, 2015)</td>
<td>MI is equally effective for each lifestyle factors relevant to multimorbidity and can be delivered by different HCPs.</td>
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<td>about cost-effectiveness.</td>
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<td>To evaluate effectiveness of MI in improving medication adherence in older pts being treated by polypharmacy. (Moral et al. 2014)</td>
<td>Cluster RCT IV: MI group-MI training, review of pt treatments Control: “advice approach” 3 f/u visits: 15 days, 3 mos., 6 mos. DV: medication adherence</td>
<td>154 pts: 70 MI group, 84 control group, 27 HCPs in 16 Primary care center, Madrid Spain</td>
<td>Health Center (urban/rural), provider (MD/RN) pt data, chronic disease, QOL (COOP-WONCA charts), Medications, electronic Rx, treatment data. ICD-9 codes. Med adherence = average adherence %</td>
<td>Ave. age 76 yrs, 68.8% women. No difference at first visit. Factors asso. w/ med adherence: 7.6% higher ($p = .001$): MI, female (OR = 0.16, 95% CI), high level of education (OR = 5.68, 95% CI), NNT: 7 (95% CI: 4-20.6)</td>
<td>PCP and nurses can effectively use both advice strategies and MI. MI contributed more to higher levels of adherence. More research needed to est. efficacy of MI.</td>
<td>Use of adherence criterion of b/w 80% and 110% = sig. compliance. Masking was not possible.</td>
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| Evaluate TLC intervention and MI via group classes vs. health education on BP control. (Ogedegbe et al., 2013) | RCT IV: MI - TLC (12 weekly group classes, 3 monthly individual, bimonthly individual) Health Educ. (30 min session TLC, | N=250 AA and Latino 60 y/o and older with uncontrolled HTN, attend senior center New York, New York | 1-Physiological assessments: BP, ht, wt measurement 2-Self-report: demographics, meds and med. adherence (Morisky Questionnaire), comorbidity (Charlson Comorbidity Index) Life stressor, EURO-D (depression), Rapid ANCOVA used: Significant mean SBP diff between MINT-TLC and control group- 3 to 4, $p < .05$; Mean DBP diff-3.5 to 3.8 | Data collection is still ongoing. Findings will provide information on effective LS intervention in senior centers | Potential contamination between the 2 groups due to recruitment at same center. Restriction to seniors fluent in English, therefore not generalizable to non-English speaking Latinos.
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<td><strong>Compare standard change talk (CT) and new therapy involving the synergistic exchange of CT in a group setting, termed “relatedness”</strong> (Shorey, Martino, Lamb, LaRowe, &amp; Santa Ana, 2015)</td>
<td>RCT</td>
<td>52 US veteran outpts with a 1st alcohol use disorder</td>
<td>MI treatment integrity of therapist using Likert scale (1-low, 5=high adherence) on 5 global dimensions (evocation, collaboration, autonomy/support, direction, empathy)</td>
<td>MI adherent behaviors of therapist positively associated with total CT or relatedness.</td>
<td>GMI is associated with more frequent CT and relatedness compared to TCC.</td>
<td>Limitations: small size and predominantly male VA population. Only CT was coded. Sustained talk, which could negatively affect the group, not. Note: Very interesting study using CT in group motivational interview. Ideal number for group was not identified. Study did not show whether relatedness can predict treatment outcomes.</td>
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<td>IV: CT in Group MI (GMI): 4 structured, 75-min sessions in 1 week. vs. Treatment Control Conditions (TCC): psycho-educational group with standard presentations; 4 sessions, 75 min, 4 days within 1 week.</td>
<td>Setting: VA hospital</td>
<td>-Frequency of CT (6 specific types: desire, ability, reason, need, commitment, taking steps) -Relatedness coding-when grp member asked question and another answer question in form of CT, both comments coded as relatedness. - Treatment components checklist.</td>
<td>Number of grp members present was only variable associated with relatedness.</td>
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<td>DV: “relatedness”-synergistic exchange of CT between/ among group members</td>
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<td>Synthesize findings from RCTs of MI for health behavior outcomes within primary care populations. (VanBuskirk &amp; Wetherell, 2014)</td>
<td>Meta-analysis IV: MI</td>
<td>12 studies in Primary care settings</td>
<td>Means, SD, p values for each group</td>
<td>9 studies: positive results MI, effect size for adherence ($p &lt; .05$). Cohen’s $d = .18$ ($.01, .37$) ↑levels of professional credentials of staff ($p = .0005$), MI predominantly used in substance use, 50% of 12 studies. Interventions varied on number, length of session, mode of delivery, qualifications of provider.</td>
<td>MI was effective for a range of behaviors in primary care settings; in as little as one 15-20 minutes session, either by phone of intermittent phone calls after in-person meetings, with minimal training in MI techniques, lacked power due to small sample sizes, lack of allocation concealment, lack of blinding, significant heterogeneity</td>
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*Note. ADL = Activities of Daily Living; BP = Blood Pressure; CI = Confidence Interval; CT = Change talk; DBP = Diastolic Blood Pressure; D/C = discharge; DV = Dependent Variable; Educ = Education; ED = EF = Ejection Fraction; Emergency Department; F/U = Follow Up; GV = Group Visit; HC = Health Care; HCPs = Health Care Providers; HF = heart failure; HRQOL = Health Related Quality of Life; GPs = General Practitioners; HS = high school; IV = Independent Variable; LS = lifestyle; MD = physician; MI = Motivational Interviewing; NNT = Number Needed to Treat; NP = Nurse Practitioner; NYHA = New York Heart Association; OR = Odds Ratio; PD = Parkinson’s Disease; PCP = Primary Care Provider; pMol/L = Picomole/liter; Pt = patient; QALYs = Quality Adjusted Life-years; QOL = Quality of Life; REALM = Rapid Estimate of Adult Literacy in Medicine; SBP = Systolic Blood Pressure; SD = Standard Deviation; SMA = Shared Medical Appointment; TLC = Therapeutic Lifestyle Changes; UC = Usual Care; VA = Veteran Administration; Veg = vegetable; VS = Vital signs; Wt = weight; x = times; Yrs = Years; 1ry = primary; 2ndary = Secondary.*