

Article No.	Author/s	Title	Journal	Year	Intervention	Type of Community health worker/Role	CHW recruitment and training	Barriers, enablers/ Limitations
1	Balcazar, Hector Alvarado, Matilde Cantu, Frank Pedregon, Veronica Fulwood, Robert	A promotora de salud model for addressing cardiovascular disease risk factors in the US-Mexico border region	Preventing Chronic Disease	2009	Promotoras de salud from each CHC delivered 8 lessons from Your Heart, Your Life, which uses various educational approaches and relevant materials. Educational sessions were delivered several times per week, once per week, or every other week for a total intervention period of 2 to 3 months.	Community outreach, take group classes, individual support, follow-ups. Promotoras' primary responsibility was to recruit Hispanic participants through the CHCs' clinical and community outreach systems. Recruitment strategies included referrals by the medical team, advertisement of the program at the CHCs, and outreach to neighborhood and community sites near the CHCs	Each participating community health centre conducted a series of well-defined and structured promotoras training activities which included: 16 to 18 hours of training to complete the Your Heart, Your Life curriculum lessons. Lead promotoras who had been previously trained in the Your Heart, Your Life manual delivered the training activities to promotoras. Lead promotoras provided leadership and served as role models and mentors for the newly trained promotoras	Limitation: lack of sophisticated intervention approach,
2	Balcazar, H. Alvarado, M. Ortiz, G.	Salud para su corazon (Health for your heart) community health worker model: Community and clinical approaches for addressing cardiovascular disease risk reduction in hispanics/latinos	Journal of Ambulatory Care Management	2011	Delivery of Salud Para Su Corazon (SPSC) programs through the use of Promotoras de salud. CHW delivered the curriculum in class-type group format followed by telephone, home visits or both	CHW facilitate the intervention in delivery, follow up with community, tracking pro-post intervention behavioural changes	Community health workers were trained on "Your heart your life" curriculum developed as part of SPSC intervention	N/A
3	Balcazar, Hector Wise, Sherrie Rosenthal, E. Lee Ochoa, Cecilia Rodriguez, Jose Hastings, Diana Flores, Leticia Hernandez, Lorraine Duarte-Gardea, Maria	An ecological model using promotoras de salud to prevent cardiovascular disease on the US-Mexico border: the HEART project	Preventing Chronic Disease	2012	Physical activity and nutrition intervention: Under a family of programs called "Mi Corazon Mi Comunidad" (My Heart My Community) 2 types of programs are being implemented: lifestyle education programs and environmental enhancement programs under two foci: activities focusing on nutrition and activities focusing on physical fitness	Project implementation using Su Corazon Su Vida curriculum (2 months of educational sessions with a 2-month follow-up component for the intervention group: that included nutrition and physical activities	In addition to a high school diploma or equivalent, each CHW was required to possess or obtain Texas state community health worker certification within 30 days of employment. Additional requirements were a minimum of 2 years' experience in community project work, health- CDC - Preventing Chronic Disease related service, cardiovascular health, or CBPR. Computer skills, ability to exercise, and training in CPR and first aid were also required. Promotoras participated in a 2-week Basic Skills Leveling course developed by the El Paso Community College Community Health Worker/Promotoras de Salud program for 45 credit hours. Learning modules focused on basic skills for reducing and preventing CVD in Hispanics, capacity-building strategies, tools for identifying community resources, and advocacy. Evaluation methods were pretests and posttests, assignments, student presentations, and an exit exam. A bilingual curriculum development specialist from HEART phase 2 trained the promotoras to conduct each activity of the MiCMiC curriculum, including heart-healthy cooking demonstrations. Parks and Recreation provided training and certification in proper food-handling techniques, and promotoras participated in in-house training on the YWCA regulations as full-time employees. All promotoras were also thoroughly trained in preintervention and postintervention data collection techniques.	N/A
4	Balcazar, Hector G. Byrd, Theresa L. Ortiz, Melchor Tondapu, Sumanth R. Chavez, Monica	A randomized community intervention to improve hypertension control among Mexican Americans: using the promotoras de salud community outreach model	Journal of Health Care for the Poor & Underserved	2009	A nine-week promotoraintervention that consisted of the Spanish version of six Your Heart, Your Life educational modules with the addition of the new hypertension module (specifically designed for this project in Spanish) with a photonovela (which was also designed in Spanish for the project) delivered by promotoras de salud from AYUDA (the hypertension module and photonovela are available upon request). Four promotoras de salud worked in pairs and delivered the educational modules in Spanish in two-hour sessions during weeks 1, 2, 3, and 8 for groups of approximately 15-20 participants each. The program for weeks 4 through 7 consisted of follow-up telephone calls to answer questions and discuss what lifestyle changes (e.g., changes in weight, salt and sodium consumption) were made by participants that were consistent with the educational modules taken during weeks 1-3, and to schedule make-up classes for participants who missed any class during those weeks.	The promotoras delivered the Spanish version of Your Heart, Your Life educational modules in addition to Hypertension module developed in Spanish to the participants.	Promotoras obtained training on SPSC promotoras curriculum Your Heart, Your Life by an experienced promotoras from the involved community based organisation. The training consisted of 4 days of education and guided practice using Your Heart, Your Life promotoras curriculum.	Limitation: since the intervention and control group came from the same community, it was hard to avoid group contamination. Short duration of intervention did not allow for the real effect of intervention to be seen. There was the lack of assessment and monitoring of medication use in both groups.
5	Balcazar, Hector G. de Heer, Hendrik Rosenthal, Lee Aguirre, Melissa Flores, Leticia Puentes, Flor A. Cardenas, Victor M. Duarte, Maria O. Ortiz, Melchor Schulz, Leslie O.	A promotoras de salud intervention to reduce cardiovascular disease risk in a high-risk Hispanic border population, 2005-2008	Preventing Chronic Disease	2010	Delivery of Su Corazon, Su Vida curriculum. Series of 8 classes to given on the curriculum for two months followed by telephone follow ups and small group session to discuss on the changes made on participants behaviours	Deliver the Su Corason, Su Vida curriculum, participants follow ups, and change behaviour assessment	Promotoras took 16-18 hours of training to complete SU Corazon Su Vida lessons delivered by a lead promotora from Centro San Vicente clinic.	Initial feedbacks received from the clinical partners of the projects could have worked as an intervention itself apart from the group assessment component of the intervention affecting the project outcomes. The differences in demographic variables among intervention and control group participants were considered as covariates which could have reduced the power of intervention limiting its ability to find differences in clinical indicators.
6	Barnes-Boyd, C. Fordham Norr, K. Nacion, K. W.	Promoting infant health through home visiting by a nurse-managed community worker team	Public Health Nursing	2001	REACH-Future used a nurse-community worker team to provide health care, family support, and health education in the home.	Health advocates/nurse helper. Health advocates/nurse helper were involved in providing social support to mothers through developing a supporting relationship with them. The advocates worked with mothers to identify their personal goals for parenting and for self-development, including education, work, and avoidance of unwanted pregnancy. Under the supervision of a trained nurse, health advocates also provided instruction in infant care, including hygiene, skin care, infant nutrition, and accident prevention. They help mothers in their emotional and cognitive development. They help mother recognised the importance of preventive care and prompt treatment of illness. When required they facilitated with appointments, provided assistance with transportation, and help families access other necessary resources such as food pantries. Community workers also provided home visits to provide health care, family support, and health education in the home.	CHW were recruited through community agencies. CHW were provided with total 6 months of training. 2 months on didactic training in general health advocacy, 2 months of didactic training in maternity-child health issues, 2 months of field experience with health Aids in the local department of public health	Challenges: Developing an effective nurse-health advocate team was a challenge that required change and development of new skills. It needed intensive initial trainings, regular continuing education, and ongoing team building for both the health advocates and nurses. Maintaining contact with families over an extended period of time was another significant challenge. Working in communities that are prone to high turnover and physician referral which could have impacted on the higher rate of screening participation. Offering FOBT have increased in participation rate but the study did not provide FOBT as an alternative. Study is limited in terms of addressing diversified culture of Latinos
7	Braschi, Caitlyn D. Sly, Jamilia R. Singh, Smriti Villagra, Cristina Jandorf, Lina	Increasing colonoscopy screening for Latino Americans through a patient navigation model: a randomized clinical trial	Journal of Immigrant & Minority Health	2014	Patient Navigation intervention to reduce barriers to CRC screening: The intervention group received three scripts of calls: a scheduling call, a call 2 weeks before their colonoscopy date and a final call 3 days prior to the procedure. A written bowel preparation instructions were mailed after the scheduling call. The two reminder calls were associated with review of preparation instructions, assessment of transportation needs, and the navigators provided education and support.	Assist patients in negotiating with the health system and reduce the barriers to screening	Not explained	Not explained

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8	Christina Esperat, M. Flores, D. McMurry, L. Feng, D. Song, H. Billings, L. Masten, Y.	Transformacion para salud: A patient navigation model for chronic disease self-management	Online Journal of Issues in Nursing	2012	Transformacion Para Salud (TPS): a patient navigation model for chronic disease self-management. This is a two year demonstration project	Promotoras, Each Promotoras carried case load of 50 patients. They were responsible for homevisits, follow ups (both via home visitis and telephone calls). They were conducting motivation interviews, measurement of components of change process , they were helping patients set weekly goals and evaluating those goals achievement periodically.	Promotoras were certified by the Texas Department of Helath, through the Texas Tech University Helath Sciences Center Schooling of Nursing CHW Certification Program. A 160 hours of training program. The Promotoras also underwent six weeks of training in chronic disease management, as well as on the application of the Transformation of Helath conceptual framework to facilitate behaviour change among vulnerable population	Enablers: cultural and linguistic congruence is a critical element to facilitate success of program implementation such as that using the TFH framework. the program must ensure that an infrastructure exists to support the complex demands of implementation, including regular and ongoing evaluation of each program component. The use of paraprofessionals who are adequately trained in delivering specialized health care complements and supplements traditional health care delivered by professionals.
9	Cruz, Yanira Hernandez-Lane, Maria-Eugenia Cohello, Janet I. Bautista, Christian T.	The effectiveness of a community health program in improving diabetes knowledge in the Hispanic population: Salud y Bienestar (Health and Wellness)	Journal of Community Health	2013	The intervention consisted of one-90 min training session conducted by promoters in Spanish and delivered in the study sites. A series of educational materials were created for promoters to teach Hispanics about diabetes and healthy eating habits. These included (1) a training manual, (2) a flipchart, (3) a diabetes brochure, (4) a bingo game, (5) cups and spoons, and (6) a health basket. All the materials were prepared targeting hispanic community to facilitate interactive, and educational learning about diabetes.	Community health promoters/ Promotoras de salud	“Promotores” received extensive training in five sessions conducted over 3 days by the NHCOA staff at study sites. Training included a review of diabetes disease background, diabetes risk factors, diabetes control and prevention, as well as how to use the study questionnaires and educational materials for diabetes education, and nutrition and physical activities. Promotores also received training on the role of health promoters for community health promotion. Semiannual refresher trainings were provided to help with retention of health promoters’ activities. A pre- and posttest questionnaire was applied to measure the efficacy of diabetes training. Tests included 20 questions on diabetes, risk factors, and methods for the prevention and control. Health promoters with a score of more than 85 % on the post-test were selected for program activities.	Limitation: First, for ethical reasons, a control group was not included because the control group would not benefit from this intervention study. Therefore, observed changes in diabetes knowledge cannot be formerly attributed to the intervention. Second, diabetes status was self-reported and may be subject to underreporting response bias. Third, external factors may have contributed to the success of the Salud y Bienestar program. These factors include: the use of promotoras with previous experience for community education and the use of multiple culturally-tailored materials for educational sessions.
10	DeGroff, Amy Schroy, Paul C., 3rd Morrissey, Kerry Grace Slotman, Beth Rohan, Elizabeth A. Bethel, James Murillo, Jennifer Ren, Weijia Niwa, Shelley Leadbetter, Steven Joseph, Djenaba	Patient Navigation for Colonoscopy Completion: Results of an RCT	American Journal of Preventive Medicine	2017	Two bilingual lay navigators provided individualized education and support to reduce patient barriers and facilitate colonoscopy completion. The intervention was delivered largely by telephone.	Lay health navigator. Navigator primarily worked with participants via telephone, although some activities were conducted in person and by mail. Typical activities included assessing for barriers, informing and educating patients about the colonoscopy procedure and bowel preparation, addressing emotional concerns about the procedure, making appointments, and arranging for escorts and transportation services	One navigator had received PN training at the Outreach Worker Training Institute and motivational interviewing training from Cambridge Health Alliance. She also had significant experience working on a similar PN intervention trial for CRC screening. The second navigator was trained through a 2-day PN training at the Harold P. Freeman Patient Navigation Institute followed by mentorship provided by the experienced navigator. Both navigators received additional training in motivational interviewing from the Boston University School of Medicine.	Limitation: results might not be generalizable to other areas given that all participants had a primary care provider, a referral for colonoscopy, and a payment source for colonoscopy. 6 months time frame of the intervention and data collection might have limited the research ability to see the positive results PN. Because of missing data, there could have been biases during data analysis process.
11	Denman, Catalina A. Rosales, Cecilia Cornejo, Elsa Bell, Melanie L. Munguia, Diana Zepeda, Tanyha Carvajal, Scott Guernsey de Zapien, Jill	Evaluation of the community-based chronic disease prevention program Meta Salud in Northern Mexico, 2011-2012	Preventing Chronic Disease	2014	Meta Salud: The Meta Salud program consists of 13 weekly educational sessions that provide information about topics such as heart health, physical activity, diabetes, fat and cholesterol, sodium, glucose and sugar, maintaining a healthy weight, building a healthy community, preparing healthy foods, eating healthfully on a budget, and emotional well-being. Each 2-hour educational session consists of group activities and team exercises that motivate participants to change through participative methods that promote the adoption of healthy lifestyle habits. The intervention also includes a group physical activity session 1 to 3 times per week. Meta Salud program materials (including the handbook for program implementation and a participant workbook) and instructional videos	Community health workers, Promotoras de salud. CHW were responsible for recruiting participants, provide weekly education sessions	They were trained by El Colegio de Sonora and University of Arizona research staff to facilitate the Meta Salud intervention and received an additional stipend for their participation in the research project. The CHWs worked in 2- person teams to facilitate 4 simultaneous groups during 2 intervention cycles. Training was provided before each intervention cycle	Limitation: First, the study was it was not a randomized trial and did not have a comparison group. The recruitment process may have been biased towards those people who have already started on lifestyle modification. During the Meta Salud intervention, a national media campaign and 2 health-care system interventions were being implemented to encourage an active lifestyle and healthful eating habits. So the results could have been influenced by those interventions as well. This article does not include analysis of data on health status, physical activity, or eating habits
12	Goelen, Guido De Clercq, Gerlinde Hanssens, Sophie	A community peer-volunteer telephone reminder call to increase breast cancer-screening attendance	Oncology Nursing Forum	2010	The identified women were called three times Monday through Friday of the week preceding their appointment for a screening mammogram as proposed in the invitation letter. Attempts were made on at least two different days, with the first two calls occurring from 10am to 4pm and third call from 6-8 pm. An eventual telephone contact consisted of a brief conversation scripted by the research team. Peer-volunteers were explicitly instructed to keep the conversation neutral and not suggest by tone of voice or content(in cases of incidental, extended conversations) that the women should have a screening mammogram. Any inquiries were directed to a dedicated toll-free number at the department of cancer prevention.	Peer Volunteer: Volunteers were recruited through local contacts provided by the authorities of the four communities included in the study. Candidates were of the same birth cohort as the target population	Volunteer were provided with two mandatory two-hour training sessions by the first author. Training included an overview of breast cancer screening, the Belgian screening program, and the study design, as well as hands-on operation of the telephone-reminder-call system and study registration.	Limitation: Baseline characteristic of the participants were not collected. Limited quality assurance, Enablers: Volunteers has the district impression that most people they contacted appreciated their efforts. The Coverage of entire community enabled the intervention to a large scale and long-term implementation

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13	Hoffman, Heather J. LaVerda, Nancy L. Young, Heather A. Levine, Paul H. Alexander, Lisa M. Brem, Rachel Caicedo, Larisa Eng-Wong, Jennifer Frederick, Wayne Funderburk, William Huerta, Elmer Swain, Sandra Patierno, Steven R.	Patient navigation significantly reduces delays in breast cancer diagnosis in the District of Columbia	Cancer Epidemiology, Biomarkers & Prevention	2012	Network Navigation: This model comprise of outreach, screening, diagnosis and treatment by working collaboratively with navigators from a partnership with clinical and community sites.	During the study, 26 navigators were used and 6 of these women had previously worked as navigators for several years. An additional 9 women had worked closely with patients as nurses, case managers, or community health workers.	the navigators received training in navigation and data collection through the research program. They received training at several American Cancer Society-sponsored conferences. George Washington Cancer Institute (GWCI) provided additional navigator training through its Center for the Advancement of Cancer Survivorship, Navigation, and Policy.	The study was non-randomised. Majority of the participants had reached their diagnostic resolution so study could not assess differences in diagnostic resolution between navigated and non-navigated patients. The race and ethnicity data had to be imputed for 427 nonnavigated participants.
14	Honeycutt, Sally Green, Rhonda Ballard, Denise Hermstad, April Brueder, Alex Haardorfer, Regine Yam, Jennifer Arriola, Kimberly J.	Evaluation of a patient navigation program to promote colorectal cancer screening in rural Georgia, USA	Cancer	2013	Patient centered medical home promoted by community health workers: Community cancer screening program patient navigator activities at community health center clinic.	Specifically, at each clinic, health navigators: 1) conduct chart audits to identify patients due for screening, 2) manage provider reminder systems to prompt health care providers to refer patients for screening, 3) coordinate screening and follow-up services, 4) provide one-on-one patient education and appointment reminders, 5) assist patients in overcoming barriers to screening (eg. costs, transportation, literacy), 6) ensure that the colonoscopy recall schedule, based on gastroenterologist specialist recommendation, is entered into patient charts, and 6) coordinate provider feedback on screening referral patterns	unclear	Limitation: Neither clinics nor patient were randomized. Implementation of the project in the higher capacity site could have resulted in higher screening rate. All the intervention sites comply with the purpose of CCSP program compared to control sites and that might have resulted in better outcomes for intervention group. The study did not distinguish between screening and diagnostic examination.
15	Horne, Hisani N. Phelan-Emrick, Darcy F. Pollack, Craig E. Markakis, Diane Wenzel, Jennifer Ahmed, Saifuddin Garza, Mary A. Shapiro, Gary R. Bone, Lee R. Johnson, Lawrence B. Ford, Jean G	Effect of patient navigation on colorectal cancer screening in a community-based randomized controlled trial of urban African American adults	Cancer Causes & Control	2015	Along with printed educational materials, certified patient navigator offered to assist participants with identifying and overcoming barriers to cancer screening thereby facilitating adherence to care	Johns Hopkins trained and certified patient navigator (health coordinator)	The John Hopkins trained and certified health navigator	Limitation: loss to follow up could have biased the results, uniformed medicare coverage among participants could have attenuated the real disparities in CRC screening seen in older African Americans. The self reported screening assessment could have resulted in reporting bias
16	Hunter, Jennifer B. de Zapien, Jill Guernsey Papenfuss, Mary Fernandez, Maria Lourdes Meister, Joel Giuliano, Anna R.	The impact of a promotora on increasing routine chronic disease prevention among women aged 40 and older at the U.S.-Mexico border	Health Education & Behavior	2004	Along with mailed postcard reminder, CHW visited women in their homes and reminded women about their scheduled appointment at the clinic for their comprehensive preventive exam. The CHW also discussed about any barriers that prevented women from going to clinic and facilitated scheduling of an appointment.	Bilingual women from the community who had experience working in community-based breast and cervical cancer education program, as well as in adolescent and maternal and child health program. CHW was already familiar with national guidelines for female preventive exam. They also received training in issues relevant to implementing the intervention which were: knowledge intervention's purpose, participants consent and confidentiality, data collection, documenting activities, and coordinating efforts with community health centre staff.	The promotora was a bilingual woman from the community who had experience in working in community based breast and education programs as well as in adolescent and maternal and child health programs. Already familiar with national guides for female preventive exams, the promotora received training in issues relevant to the implementing the intervention. These factors included the intervention purpose, participant consent and confidentiality, data collection, documenting activities and coordinating efforts with community health centre staff	Enablers: Trust and confidentiality in community setting. It is necessary to build a strong, trusting relationship between CHW and the population they serve
17	Jandorf, Lina Braschi, Caitlyn Ernstoff, Elizabeth Wong, Carrie R. Thelemaque, Linda Winkel, Gary Thompson, Hayley S. Redd, William H. Itzkowitz, Steven H.	Culturally targeted patient navigation for increasing african americans' adherence to screening colonoscopy: a randomized clinical trial	Cancer Epidemiology, Biomarkers & Prevention	2013	For the two culturally targeted groups (peer-patient navigation and pro-patient navigation), all navigators were African American to maintain racial concordance. Each call included information about how colorectal cancer specifically impacts African Americans. In the STD group, there was no mention of culture or barriers. Everyone received information about the importance of colorectal cancer screening and specific instructions for colonoscopy preparation. All participants received 3 scripted phone calls: a scheduling call, a call 2 weeks before their colonoscopy date, and a call 3 days before the procedure. In the STD group, calls were conducted by the pro-patient navigators. That is, the same pro-patient navigators conducted the navigation for two groups. In addition to the three telephone calls, there were two assessments. Time 1 was completed at the time of consent (baseline), face-to-face as an interview. The time 2 assessment was completed over the phone 2 weeks before the scheduled colonoscopy, immediately following the reminder call.	Five African American peer-patient navigators and four African American pro-patient navigators were recruited and trained.	All pro-patient navigators (salaried staff) held a Bachelor's degree, had research experience, and had worked with minority communities	Enablers: Race alone as a reference group shared by navigator and patient is important to the navigation experience.
18	Jandorf, Lina Cooperman, Julia L. Stossel, Lauren M. Itzkowitz, Steven Thompson, Hayley S. Villagra, Cristina Thelemaque, Linda D. McGinn, Thomas Winkel, Gary Valdimarsdottir, Heiddis Shelton, Rachel C. Redd, William	Implementation of culturally targeted patient navigation system for screening colonoscopy in a direct referral system	Health Education Research	2013	Culturally targeted patient navigation	Navigation included three phone calls. Call attempts were made at various times of the day and days of the week, including the weekend. Call logs were examined regularly to determine when to consider a person not reachable. At this point a letter was sent to the participant, asking them to contact us. During the initial call, the PN made a colonoscopy appointment, answered basic questions and provided information about the preparation and the procedure. Following the first call, the PN mailed written instructions for bowel preparation and a reminder postcard with the patient's colonoscopy date. The PN subsequently contacted each participant 2 weeks and 3 days prior to their procedure to remind them of their appointment, confirm receipt of mailed information, review bowel preparation instructions, assess transportation needs and make arrangements if necessary, and provide education and support. PNs offered a detailed explanation of what to expect on the day of the procedure from time of registration until discharge.	The navigators were provided culturally targeted patient navigators training. CTPN training incorporated four approaches to cultural targeting: peripheral, linguistic, evidential and sociocultural. Pro-PNs completed training over a 2-week period while Peer-PN training was extended over 3 months; the two groups were mainly trained separately. Training consisted of three sessions reviewing CRC topics and navigator responsibilities, a session with a gastroenterologist to provide a clinical perspective, telephone communications training and a series of one-on-one structured role plays simulating a navigation encounter. Periodic assessments were administered to evaluate PN knowledge	Limitation: First, our results must be interpreted in the context of the study design and time frame. This study was based in an urban primary care clinic and was conducted with NIH funding at a large academic hospital with plentiful resources. The lack of a no-PN control group limits the analyses and potential findings. The study did not track participants' history of prior colonoscopy, which can affect attitudes about screening and may reflect differences in access to care. The study was not able to determine the effects of demographic differences between peer and professional navigators

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19	Kegler, Michelle Crozier Malcoe, Lorraine Halinka	Results from a lay health advisor intervention to prevent lead poisoning among rural Native American children	American Journal of Public Health	2004	They made nearly 27000 contacts and spent more than 5000 hours conducting TEAL(Tribal Efforts Against Lead)-related community education efforts. Topics included sources of lead, the importance of blood lead screening, strategies for removing lead sources, hand washing, playing in grass rather than in dirt or mine tailings, good nutrition, and housecleaning.	40 Natural helper, respected people to whom others turned for advice and help	they completed 8 hours of training on sources of lead exposure and lead poisoning prevention strategies. These lay health advisors then attended monthly meetings, planned and engaged in outreach activities, and educated individuals in their social networks (average of 5.4 education/ outreach activities per month).	Because of the nature of the study, the comparison group had to be selected from the same community. Resulted in contamination of the comparison community with preventive message limiting study with its ability to detect differences between the intervention and the comparison group. Study could not randomised multiple communities into control and intervention groups. Wide spread government initiatives regarding preventing Lead poisoning in the same communities could have lead to change in behaviour, attitudes and belief among the participants. Thus it was difficult to show a significant intervention effect on the population
20	Kieffer, E. Caldwell, C. Welmerink, D. Welch, K. Sinco, B. Guzman, J.	Effect of the Healthy MOMs Lifestyle Intervention on Reducing Depressive Symptoms Among Pregnant Latinas	American Journal of Community Psychology	2012	The MOMs intervention was offered in a 14-session curriculum conducted weekly in Spanish during two home visits and nine group meetings during pregnancy; and two home visits and one group meeting conducted between 2 and 6 weeks postpartum. Intervention women attended an average of 10.5 sessions (group meetings plus home visits), with 98.6 % attending at least 1 session and 10.1 % attending all 14 sessions. Both group meetings and home visits integrated information, discussion and activities aimed at empowering women to develop knowledge and skills to reduce social and environmental barriers to healthy eating and regular exercise.	Community health workers as women health advocates (WHAs)	Received extensive training prior to beginning recruitment.	Limitations: the MOMs intervention was not designed to diagnose or treat depression, a measure of clinical depression was not included at any of the data collection points. Therefore the clinical significance of the findings can not be evaluated.
21	Koniak-Griffin, Deborah Brecht, Mary-Lynn Takayanagi, Sumiko Villegas, Juan Melendrez, Marylee Balcazar, Hector	A community health worker-led lifestyle behavior intervention for Latina (Hispanic) women: feasibility and outcomes of a randomized controlled trial	International Journal of Nursing Studies	2015	8 Classes delivered in groups by 2 promotoras delivering content from the intervention manual, DVD, followed by individual teaching and coaching in 4 home visits and 3 telephone calls.	Promotoras, trained community (lay) health workers.	All Promotoras participated in approx 100 hours of structured training activities, including 4 days focusing on delivery of modules in Your heart, your life and research-specific sessions. The trainings were provided by the bilingual promotora trainer with extensive experience implementing the curriculum and educating promotoras. All promotoras had a high school diplomas or equivalent, 4 to more years' employment as a community health worker, and either resided in or had extensive work experiences in the community where the study was implemented.	Barriers and enablers: Frequency of contact including home visits by promotoras – facilitated behaviour change by use of tools (pedometers), knowledge, emotional and social support.
22	Krantz, Mori J. Beatty, Brenda Coronel-Mockler, Stephanie Leeman-Castillo, Bonnie Fletcher, Kelly Estacio, Raymond O.	Reduction in Cardiovascular Risk Among Latino Participants in a Community-Based Intervention Linked With Clinical Care	American Journal of Preventive Medicine	2017	CHWs delivered a 12-week bilingual curriculum on nutrition, physical activity, and diabetes and risk factor awareness. Health outcomes were then reassessed after 12 weeks	Bilingual self-identified Latinos residing in Denver	Not included	Limitations: lack of comparison group; enrolment biased toward participants already motivated to change behaviour; convenience sampling design, and 30 percent drop out rate.
23	Larkey, Linda K. Herman, Patricia M. Roe, Denise J. Garcia, Francisco Lopez, A. M. Gonzalez, J. Perera, Prasadini N. Saboda, Kathylynn	A cancer screening intervention for underserved Latina women by lay educators	Journal of Women's Health	2012	Participants were provided with training content and materials for the intervention that had been developed in Spanish. Education topics included a definition and description of cancer; detailed information on dietary, tobacco, and physical activity recommendations for reducing risk for cancer; and screening for breast, cervical, and colorectal cancer, including screening procedures. A resource booklet (English and Spanish) that listed dozens of clinics or centers within several systems of care where one could obtain each type of screening according to type of healthcare coverage (or none) was presented and discussed to help guide each participant to the closest and least expensive options for screening. The National Cancer Institute's (NCI) Cancer Information Service toll-free number was included.	Promotoras/Lay health educators, provide language match, culturally relevant health education, develop network within the community	Not included	Limitations: High attrition rate made it difficult to see any significant difference between two interventions. Self-reported screening behavior assessment was limiting in terms of clarity of communication and reliability of the answers provided
24	Marshall, Jessie Kimbrough Mbah, Olive M. Ford, Jean G. Phelan-Emrick, Darcy Ahmed, Saifuddin Bone, Lee Wenzel, Jennifer Shapiro, Gary R. Howerton, Mollie Johnson, Lawrence Brown, Qiana Ewing, Altovise Pollack, Craig Evan	Effect of Patient Navigation on Breast Cancer Screening Among African American Medicare Beneficiaries: A Randomized Controlled Trial	Journal of General Internal Medicine	2016	Participants were randomized to either: printed educational materials on cancer screening (control group) or printed educational materials + patient navigation services designed to help participants overcome barriers to cancer screening (intervention group). Navigators made introductory phone calls to participants shortly after their baseline interview to introduce their role as screening facilitators, review participants' baseline cancer screening status, discuss printed educational materials, consider predisposing factors to cancer screening (e.g., perceptions and beliefs about cancer), and identify potential barriers. Navigators helped arrange appointments and accompany participants to screenings when necessary. Navigators also worked to enhance the patient-provider interaction by coaching patients on potential questions to ask their providers.	Navigators made both in-person and phone-based contact, and managed caseloads of 100 to 300 participants. Patient navigators were expected to have, at a minimum, quarterly contact with participants by phone or in person. Participants who were up to date on their cancer screenings or indicated no barriers to getting screened received quarterly contact from navigators whereas more frequent contact occurred when the navigators were actively helping overcome barriers. For participants who were difficult to reach, navigators made frequent attempts to engage through letters or reaching out to participants' back up contact	Navigator training included didactic classroom time, interactive role playing, shadowing of navigators and instruction in the use of an electronic database specially designed to support the navigators' patient education and in which all navigation activities were documented	Limitations: the focus on urban African American seniors in Baltimore City limits the generalizability of the study; large proportion of women were lost to follow-up, disproportionately so in the intervention group. The larger dropout rate in this group was due to contact fatigue among some women.

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25	Mojica, Cynthia M. Morales-Campos, Daisy Y. Carmona, Christina M. Ouyang, Yongjian Liang, Yuan Yuan	Breast, Cervical, and Colorectal Cancer Education and Navigation: Results of a Community Health Worker Intervention	Health Promotion Practice	2016	Education plus navigation intervention: Educational sessions covered cancer risk factors and likelihood of getting cancer (i.e., perceived susceptibility), screening guidelines, types of screening tests, benefits of early detection (i.e., perceived benefits), consequences of delayed or no screening (i.e., perceived severity), and perceived barriers to screening. Navigation support addressed cues to action (e.g., reminder calls) and self-efficacy (e.g., guidance in scheduling appointments and overcoming barriers).	Bilingual, bicultural community health workers (CHWs)	CHWs underwent an initial 2-week training to discuss study protocols including survey administration, data collection, and data entry and to learn about breast, cervical, and colon cancer risk factors; screening tests; and screening guidelines. Booster sessions were held once per year, and we held monthly team meetings to review study protocols, discuss recruitment and enrollment issues, and track project implementation. CHWs also checked in weekly (on Mondays and Fridays) with the project coordinator to discuss weekly goals and activities. Project staff also randomly audited CHW education sessions.	Barriers: Cost of test was one factor that limited women's participation, second barrier was lack of proper communication means with women. Often contact would not be made because of invalid number or disconnected number, women also talked about time limitation for the screening appointments. Limitations: The lack of comparison group; the self-reported screen mechanism created a situation where women could have given responses that CHW wanted to hear.
26	Parra-Medina, Deborah Morales-Campos, Daisy Y. Mojica, Cynthia Ramirez, Amelie G.	Promotora Outreach, Education and Navigation Support for HPV Vaccination to Hispanic Women with Unvaccinated Daughters	Journal of Cancer Education	2015	The EMH program was delivered by the unique combination of promotoras and student peer educators. Three promotoras were hired through the Colonias Program and housed at one of three CRCs. Members from Kappa Delta Chi, a service-based sorority at the University of Texas-Pan American, served as student peer educators. Trained promotoras and student peer educators delivered 1-h health education sessions to mothers and daughters, separately.	Trained, culturally competent Community health workers. They are members of the same community. They share language and culture.	trained	Barriers/limitation: Employed women were less likely to report their daughter's completion of the vaccine series. Promotoras reported that they encountered challenges making and having mothers keep vaccine appointments because vaccines were only offered during business hours, requiring mothers to take time off work and/or have their daughter miss school. Out-of-pocket costs (co-pays, vaccine coverage) associated with these plans posed an additional barrier to receiving care. The primary outcome, vaccine status, is self-reported and may be impacted by recall bias. The intervention program was designed for mothers and daughters and did not include young men.
27	Percac-Lima, Sanja Ashburner, Jeffrey M. Zai, Adrian H. Chang, Yuchiao Oo, Sarah A. Guimaraes, Erica Atlas, Steven J.	Patient Navigation for Comprehensive Cancer Screening in High-Risk Patients Using a Population-Based Health Information Technology System: A Randomized Clinical Trial	JAMA Internal Medicine	2016	Navigators used the IT system to track eligible patients, contact them in their own language, and provide intense outreach to help them complete cancer screening. They used a patient-centered approach.	Initial contact and most activities by phone. Navigators explored barriers, used motivational interviewing, education, support, reminder calls, arranged transport, visit preparation, accompanied patients to visits if needed.	Four part-time, college graduate, patient navigators (2 fulltime equivalent), each fluent in 2 to 5 languages, were trained in motivational interviewing, problem-solving, goal setting, use of the IT system, electronic medical record documentation, as well as health modules on breast, cervical, and CRC screening. Navigators used in this study had at least 2 years of experience with cancer navigation and continued to work 50% of their time in other established cancer PN programs in our institution.	Limitation: Limitations of this study include generalizing results to other settings because it was performed in a single academic primary care network with established PN and an advanced IT system. For CRC screening, network emphasized colonoscopy, and results did not include completed home fecal stool tests. The 8-month study period does not exclude the possibility that patients in the control group would have completed tests if followed for a longer time. The automated risk algorithm selected patients at high risk for nonadherence; however, patient navigators were not able to reach 19% of patients randomized to the intervention group.
28	Percac-Lima, Sanja Benner, Carly S. Lui, Raymond Aldrich, Leslie S. Oo, Sarah A. Regan, Nessa Chabner, Bruce A.	The impact of a culturally tailored patient navigator program on cervical cancer prevention in Latina women	Journal of Women's Health	2013	Patients were referred to patient navigation by the colonoscopy clinic staff. During the initial call, the navigator explored women's barriers to care and proposed solutions. She educated women in their own language about cervical cancer and prevention and assisted them with transportation, insurance, child care, and appointment scheduling. The most intense navigation was needed at the initial contact, often requiring several phone calls, a face-to-face meeting, or even a home visit. The navigator would accompany the most challenging patients (3-4 per month) to colposcopy appointments at MGH. The time spent with each patient varied from 1-8 hours. The navigator continued to follow the patients until they were discharged from the colposcopy clinic.	Latina-immigrant woman, native Spanish speaker and trained in patient navigation.	A Latina-immigrant woman and native Spanish speaker from the Chelsea community was hired and trained in patient navigation, cervical health, and cervical cancer. Supervision of the navigator was provided by a social worker and nurse practitioner with expertise in women's health issues. Foundation support provided \$70,000 per year for the navigator salary and supervision, while \$5,000 per year was available for patient expenses, educational materials, and program evaluation.	Limitations: The findings of the study are attenuated by its retrospective design. The navigation results come from a single urban community health center. Barriers: Because of the unique demographic characteristics within Massachusetts, finding a suitable comparison group was challenging. Enabler: an immigrant Latina patient navigator with linguistic expertise (certified medical interpreter) living in the same community as the Latina patients, was able to effectively bridge cultural barriers between the healthcare system and the study patients.
29	Percac-Lima, Sanja Lopez, Lenny Ashburner, Jeffrey M. Green, Alexander R. Atlas, Steven J.	The longitudinal impact of patient navigation on equity in colorectal cancer screening in a large primary care network	Cancer	2014	Culturally tailored patient navigation program	Patients follow up either in person or via phone, after they were contacted via initial invitation letter. Patients were educated on CRC screening, and barriers to screening were explored. PNs were responsible for reviewing all available CRC screening methods, helping schedule appointments, reminding patients about appointments, reviewing and translating the required bowel preparation, organizing transportation, and accompanying patients without available family members. The navigator updated the patient's medical record with the CRC screening results. Navigators encouraged patients to undergo colonoscopy, which is the preferred CRC screening method at MGH.	All the navigator participated in 6 hours training course. The training addressed multiple aspects of patient navigation and CRC screening including: performing initial interview with patients to identify and explore barriers, working with patients to overcome barriers, educating patients about CRC screening, motivating and coaching patients and scheduling and accompanying patients to colonoscopy testing.	Limitation: Since the study took place in one health center within an academic primary care network, the results might not be generalised to other clinical settings.

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30	Simmons, D. Rush, E. Crook, N. Te Wai o Rona	Development and piloting of a community health worker-based intervention for the prevention of diabetes among New Zealand Maori in Te Wai o Rona: Diabetes Prevention Strategy	Public Health Nutrition	2008	All participants received a copy of their results with relevant comments regarding abnormal results and were advised to visit their GP where necessary. The 'intensive' intervention included personal support delivered by a MCHW (built upon previous experience) employed across eleven Maori Health Providers. In the intensive areas, social mobilisation to maximise support for lifestyle change was planned based upon previous experience	Maori Community Health Worker (MCHW)	The MCHW was trained to deliver the intervention using principles based upon social cognitive theory and tailored to the stage of change for any individual lifestyle behaviour. MCHW training was provided in modular form covering basic anatomy and physiology, communication skills, motivational interviewing, broader health issues and the content and background to the twelve messages of the lifestyle intervention.	Enabler: active promotion of the study in the media and at cultural events and also as a major talking point at community events which led to stimulate individuals adoption in the life style change. There were more than one unrecorded MCHW encounters which could have had significant effect.
31	Staten, Lisa K. Cutshaw, Christina A. Davidson, Christopher Reinschmidt, Kerstin Stewart, Rosie Roe, Denise J.	Effectiveness of the Pasos Adelante chronic disease prevention and control program in a US-Mexico border community, 2005-2008	Preventing Chronic Disease	2012	Pasos Adelante program: a 12-week culturally tailored curriculum developed in collaboration with community and academic partners. The intervention consists of teaching sessions facilitated by CHW, focused on chronic disease prevention and control, physical activities and nutrition. The curriculum also incorporate walking groups to target behavioral capability and self-efficacy.	Promotoras/ help recruiting participants, facilitate education sessions	Promotoras attended a 1-week, half-day training for facilitating the Su Corazon, Su Vida curriculum at a national conference. Ongoing trainings included quarterly refresher trainings and local and national conferences.	Limitations: Lack of randomization, opportunity recruitment might have resulted in a selection bias for participants.
32	Treadwell, H. Holden, K. Hubbard, R. Harper, F. Wright, F. Ferrer, M. Blanks, S. Villani, G. Thomas, A. Washington, F. Kim, E.	Addressing obesity and diabetes among african american men: Examination of a community-based model of prevention	Journal of the National Medical Association	2010	Save Our Son Intervention. The SOS community-based intervention included 3 primary components: (1) a culturally tailored obesity and diabetes prevention curriculum that included 6 educational sessions (approximately 12 hours), which were modeled after the CDC's Power to Prevent Diabetes Curriculum; (2) a wide array of fitness activities (ie, swimming, tennis, boxing, basketball, power walking, etc), totaling approximately 150 hours of collective workout activities completed by all of the men during the intervention period and healthy eating and lifestyle demonstrations (approximately 30 hours); and (3) connecting participants to primary health care providers and other supportive community resources (eg, parks and recreational facilities, fitness facilities, health fairs). The 42 participants were divided into cohorts of 8 to 10 men and engaged in project activities facilitated by community health workers in various community settings.	Community health workers, also known as promotoras, lay health workers, or community health advisors. Community health workers were specifically trained for SOS to recruit participants, implement the obesity and diabetes prevention intervention, facilitate exercise and healthy lifestyle activities, and connect men with primary health care providers and other supportive community resources.	CHW were members from the african american communities, Community health workers were specifically trained for SOS to recruit participants, implement the obesity and diabetes prevention intervention, facilitate exercise and healthy lifestyle activities, and connect men with primary health care providers and other supportive community resources.	N/A
33	Wagoner, Kimberly G. Downs, Mario Alonzo, Jorge Daniel-Ulloa, Jason Rhodes, Scott D.	Latino men's qualitative perspectives on a lay health advisor intervention to promote their sexual health	Health & Social Care in the Community	2015	The intervention was designed to increase condom use and enhance the determinants of prevention behaviors among sexually active Latino men using an LHA approach. The intervention was based in community soccer leagues because they are a significant component of Latinos lifestyle in North Carolina. Recognizing the soccer leagues have an existing infrastructure with complex social networks, the study sought to identify the existing natural helpers, or men who were well-connected within the league and were already helping others.	Navegantes scheduled group sessions with men from his soccer team to lead intervention activities. All men on each soccer team were invited to attend the intervention activities, but not required to. The Navegantes supported teammates informally, one-on-one, and in smaller groups. Navegantes tracked all of the activities they conducted using forms developed for the study.	Men who served in a leadership role within the league or were seen as an advisor or mentor by others, were considered natural helpers. Using elements of the natural helper model (Eng and Parker 2002), the intervention trained these men to become LHAs, known as Navegantes (navigators), to provide advice and assistance and peer-to-peer social support. Navegantes received training on modeling correct HIV prevention behavior. Activities focused on proper condom use and how to share HIV prevention resources and information with their teammates.	Enablers: Building trust with the participants was very important as it enabled healthy discussion on sensitive matters such as HIV, STDs and Condom use.
34	Wells, Kristen J. Rivera, Maria I. Proctor, Sister Sara Arroyo, Gloria Bynum, Shalanda A. Quinn, Gwendolyn P. Luque, John S. Rivera, Marlene Martinez-Tyson, Dinorah Meade, Cathy D.	Creating a patient navigation model to address cervical cancer disparities in a rural Hispanic farmworker community	Journal of Health Care for the Poor & Underserved	2012	The educational intervention consists of oral, small-group or individual question and answer sessions. It is provided to women in either English or Spanish in the busy clinic setting and at community events.	Providing assistance with outreach and assisting patients in obtaining Pap tests. At the start of the TBCCN-CCPHP, The bilingual lay patient navigator was instrumental in the creation of this educational intervention and ensured its cultural and linguistic relevance through the use of terminology familiar to community members and by addressing culturally-specific outcome expectations identified in formative research, such as concerns about pain. The educational intervention consists of oral, small-group or individual question and answer sessions. Patient navigator performs the following services: (1) scheduling, reminding, and rescheduling patients for CC screening and diagnostic testing following abnormal Pap tests; (2) coordinating care of women who have received abnormal Pap test results; (3) accompanying women to specialty care appointments; (4) ensuring women receive Pap test results; and (5) facilitating new patient appointments for women in the community.	The navigator received three months of training by Moffitt Cancer Center and CMMS personnel based on the PNRP model	N/A
35	Wilson, Fernando A. Villarreal, Roberto Stimpson, Jim P. Pagan, Jose A.	Cost-effectiveness analysis of a colonoscopy screening navigator program designed for Hispanic men	Journal of Cancer Education	2015	The Colorectal Cancer Male Navigation (CCMN) Program consisted of four main components: (1) no-cost screening colonoscopy referrals for Hispanic men 50 years of age and older, (2) program navigation provided by bilingual patient navigators, (3) open-access endoscopy through the removal of system barriers and assisted transportation, and (4) colonoscopy services provided by a bilingual, male Hispanic surgeon.	CHW answered questions about the procedure and addressed any concerns, fears, or other issues brought up by patients. The CHW was available for home visits to encourage participants to schedule and receive screening and to help address concerns and issues. The CHW engaged immediate family members in CRC discussions and also served as a liaison between targeted Hispanic local communities and patient care services.	The CHW was trained to assess patient needs and patient education and focused on patient education about the colonoscopy process, proper bowel preparation, and conscious sedation.	Limitations: the results may be sensitive to the researchers set of assumptions. In lack of studies that analysed cost effectiveness, the data was compared against historical data from carelink. Since the program was implemented upon hispanic men, the degree of its effectiveness on other race/ethnic group is hard to discern.
36	Woodruff, Susan I. Candelaria, Jeanette I. Elder, John P.	Recruitment, training outcomes, retention, and performance of community health advisors in two tobacco control interventions for Latinos	Journal of Community Health	2010	Proyecto Sol Smoking Cessation Intervention: CHAs delivered a culturally sensitive smoking cessation intervention that took into account the specific cultural beliefs and experiences of Latino smokers and sought to promote smoking cessation and maintenance. Ambiente Fresco ETS (Environmental Tobacco Smoke) Interventions: CHAs implemented a culturally appropriate intervention designed to reduce exposure to ETS among low-income Latino children. Children and their families were recruited through the San Diego County Head Start program that serves low-income families of preschool-aged children.	Proyecto Sol and Ambiente Fresco project staff members independently recruited CHAs from previous projects, as well as worked with various organizations (e.g., Head Start) to identify and recruit new CHAs for their respective studies. A total of 35 Spanish-speaking CHAs were selected to participate in initial orientations held to inform them about their role as CHAs. The principal CHA Coordinator recruited 34% of the CHAs, 26% were referred by Head Start staff, 14% were recommended by another CHA, and 26% were recruited by some other source, including Spanish language media. For Proyecto Sol, 18 CHAs were recruited; 17 Ambiente Fresco CHAs were recruited. Also the CHA received intervention specific trainings as well.	Proyecto Sol and Ambiente Fresco project staff members independently recruited CHAs from previous projects, as well as worked with various organizations (e.g., Head Start) to identify and recruit new CHAs for their respective studies. A total of 35 Spanish-speaking CHAs were selected to participate in initial orientations held to inform them about their role as CHAs. The principal CHA Coordinator recruited 34% of the CHAs, 26% were referred by Head Start staff, 14% were recommended by another CHA, and 26% were recruited by some other source, including Spanish language media. For Proyecto Sol, 18 CHAs were recruited; 17 Ambiente Fresco CHAs were recruited. Also the CHA received intervention specific trainings as well.	N/A

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37	Molina Y et al	Patient Navigation Improves Subsequent Breast Cancer Screening After a Noncancerous Result: Evidence from the Patient Navigation in Medically Underserved Areas Study	Journal of Womens Health	2018	Navigation intervention: Patients received attempted contact up to 10 times by phone. By phone: (1) assessed patients' comprehension of mammography and their specific appointment (e.g., date, time, location, procedures); (2) assisted with clarification for any knowledge barriers; (3) assessed other immediate barriers to attending the appointment (e.g., psychosocial; logistic); and, (4) engaged in shared decision making to develop a plan of action to address.	3 hospitals in the South Side of Chicago neighborhoods, which are characterized by high levels of concentrated poverty and racial segregation. Eight lay health workers living in surrounding communities where the three hospitals were located were hired	CHW were trained as navigators (e.g., breast cancer disparities facts; enabling patients to choose from multiple solutions to address barriers	With regard to barriers, the most common concerned systemic problems with scheduling care (e.g., issues with mailed information from the hospital), insurance status, work-schedule conflicts, health literacy, transportation, and family/community issues