

Additional file 2: Details of the included intervention studies

Author, year	Study design	Patient population as reported in the paper	Intervention as reported in the paper	Intervention category	Column1
Abdur-Rahman et al., 2016	Before-and-after	Patients seen in an academic urban and children's hospital ED from July 2013 to October 2014 with asthma exacerbation who were referred to and completed the Community Asthma Programs (CAP)	Community Asthma Programs (CAP)	Care program	
Adesera et al., 2011	Before-and-after	Patients presenting to a family medical center (FMC)	Posters encouraging patients to contact the family medical centre (FMC) before going to the ED were placed in the waiting area, each exam room, and the triage room in the FMC. Patients seen in the ED for non-emergent reasons aged 18 to 70 years old recieved a letter encouraging them to visit the FMC first.	Education of patients	
Akiya et al., 2021	Before-and-after	Older adults who were (1) overusing ED or hospital-based medical care; or (2) struggling with a nonclinical issue that affected their health (eg, transportation or food insecurity)	Community Care Connections (CCC) program, a cross-sector collaboration designed to align social and health care services for older adults. The CCC program provided intensive case management and health care coordination to older adults. The program embedded social work care managers in physician offices and established referral relationships with other local medical providers.	Care program	
Ali et al., 2019	Before-and-after	Patients with asthma in a pulmonary clinic who participated in structured group education. Only those patients who were followed for one year before and one year after asthma education were included.	Standardized group asthma education for 8–12 patients (2 sessions over 2 weeks) was offered in the pulmonary clinic by certified asthma educators, including a bilingual (English and Spanish) respiratory therapist, clinical pharmacist, and pulmonologist. The standardized education tools used were based on the GINA guidelines and included a PowerPoint presentation, education booklets, a lung model, spacers, peak flow meters, and placebo inhalers for demonstration purposes.	Education of patients	
Allen et al., 2016	Before-and-after	Students from 129 schools	School Based Asthma Therapy (SBAT). Controller therapy was adjusted post discussion with the primary asthma provider, insurance authorization was obtained, inhalers were provided to home and school, then doses were administered at least daily at school. If follow-up evaluation using the Asthma Control Test (ACT) scores identify a child in on going poor control, asthma providers are alerted and medications adjusted.	School based therapy	
Anantharaman et al., 2008	Retrospective cohort	1. General population thorough media 2. Patients visiting an ED 3. Non-emergency patients visiting an public Eds 4. Re-directed patients from an ED and those with minor complaints	1. Public education campaigns on the proper use of EDs 2. Financial disincentives directed at patients attending EDs 3. Redirection of non-emergency patients from public EDs 4. Provision of alternative clinics for re-directed patients and those with minor complaints	1. Public education 2. Patient financial incentives 3. Redirection after triage 4. Additional clinics	
Anugu et al., 2017	Prospective cohort	Pediatric patients (newborns up to those aged <18 years) at 5 pediatric primary care offices considered by a clinician to be "at risk" for poor health outcomes	Monthly home visits (for 45 - 60 min) from trained Community Health Workers (CHWs) to support adherence to recommended care. CHWs may help families keep track of a child's medical information, appointments, insurance information, and medications; communicate with primary medical physician and specialists; or troubleshoot issues between office visits (eg, transportation, medication refills). After each visit, summary notes were given to clinicians for review.	Home visit	
Arain et al., 2013	Time series	Patients with minor cases (GP-type cases) defined as those patients who were referred or discharged from the ED without needing any investigation, or only some low-cost investigations	GP led walk-in centres (WICs) providing services from 8:00 to 21:00, 7 days a week.	Additional clinics	
Araujo et al., 2020	RCT	Patients with metastatic cancer	Patient navigation (PN). Patients in the PN arm received supportive care interventions by a navigator-led multidisciplinary team (palliative care, physical therapy, geriatrics, psychology) in the first 12 weeks after diagnosis.	Care coordination	

Arendts et al., 2018	Cluster RCT	People aged 65 years and older living in one of six residential aged care facilities (RACF)	A nurse practitioner that worked with general practitioners (primary care). The nurses used a best practice resource folder and were responsible for the care processes being delivered. The best practice resource folder contained guidelines for comprehensive medical assessment; patient +/- family education regarding diagnosis and prognosis; care pathways for specific acute illnesses, palliative care plan for management of current and anticipated future symptoms; advance care planning; medication review; and a review of unplanned hospitalisations at regular meetings utilising root cause analysis.	Care coordination
Arora et al., 2013	RCT	Patients 18 years or older with poorly controlled type 2 diabetes (Hb A1C level greater than or equal to 8%) in the ED at Los Angeles County Hospital	In the TExT-MED system, patients received 2 messages (9 am and 5 pm) delivered to their mobile telephones daily for 6 months. Educational/motivational (1 per day), medication reminders (3 per week), healthy living challenges (2 per week), and trivia (2 per week).	Self-management
Arrowsmith et al., 2019	Before-and-after	Patients in a single large community oncology practice where more than 3,200 cancer patients were treated during 2016	Several low-cost care coordination interventions: an after hours call process with access to EMR and patient access to bidirectional real-time messaging with care team members; a new in-office process to "close the loop" on patient evaluations by creating follow up guidelines for symptomatic telephone triage and in-clinic patient evaluations; a standard 48 hour follow up process for all ED visits and hospital admissions; increased patient awareness of telephone triage services during and after clinic hours by: augmenting new patient education by staff, developing a magnetic reminder to call the office for non-emergent and emergency situations, and instructions for use of the after hours call system.	Care coordination
Augustine et al., 2020	Before-and-after	Patients seen at primary care clinics at VA Medical Centers	Extended hours at 101 primary care clinics over a 15-month period from July 2017 to September 2018.	Increased primary care hours
Beal et al., 2015	Before-and-after	Patients younger than 21 years with "eczema", "dermatitis" and "atopic dermatitis" seen in the Cardinal Glennon Children's Medical Center ED	Implementing a full-time pediatric dermatology service	Additional services
Bell et al., 2016	RCT	Patients aged 18 and older that were hospitalized for acute coronary syndromes and/or acute decompensated heart failure in two academic medical centers	Four components: 1. Pharmacists reconciled preadmission medications and discharge medications with the patient and reported any inconsistencies to the medical team, prior to hospital discharge. 2. The pharmacist provided tailored counseling, which included assessing patient understanding of the medication regimen, barriers to medication adherence, and trouble-shooting barriers while the patient was in the hospital. 3. At discharge, the pharmacist provided additional counseling, an illustrated medication schedule showing the discharge regimen, and a pillbox, which the patient practiced filling. The pharmacist also employed a teach-back technique to ensure patient understanding. 4. Within four days after hospital discharge, study coordinators contacted the patients and inquired about general health, symptoms, and any medication-related problems such as regimen confusion, non-adherence, or side effects.	Pharmacist involvement
Bhutta and Chrusciel, 2021	Before-and-after	ED patients with epilepsy	Quality improvement metrics that included laminated cards with personalized seizure action plans and an EMR template for documentation of those plans.	Self-management
Biese et al., 2017	RCT	Individuals aged 65 and older discharged from the ED without hospital admission	A scripted 30-day follow-up telephone interview by a nurse. The questionnaire aimed to identify potential problems with their care transition and to offer advice on medication reconciliation and procurement, review of instructions and procurement of supplies for non-medicinal treatments, review and re-emphasis of postdischarge instructions, reinforcement of follow-up appointments and assistance in making appointments, and current state of health and advice if not feeling	Telephone follow-up
Blecker et al., 2020	Controlled before and after	Patients with complex diabetes age >= 18 years (1) type 1 diabetes; (2) type 2 diabetes on insulin; (3) type 2 diabetes with a glycated hemoglobin (HbA1c) > 9% (75mmol/mol). Recruited from clinics with underserved populations.	The intervention utilized a tele-mentoring model to connect primary care providers and community health workers (who assist with diabetes management) with specialists for training in diabetes care (this was done using Endocrinology ECHO model which is an intervention involving education in complex disease management).	Education of staff and case management

Block et al., 2013	Time series	Uninsured and underinsured patients referred from East Baltimore Medical Center and who were evaluated for medical necessity to join The Access Partnership (TAP)	TAP-covered services included all specialty care available at the academic medical center. Subsequent visits, diagnostics, and hospitalizations stemming from the referral were covered by the program as well. The Access Partnership navigators also facilitated engagement in primary care. The navigator communicated with the primary care physician about the status of the referral and arranged timely follow-up with the primary care physician after the specialty visit.	Care coordination
Bodenmann et al., 2017	RCT	Frequent ED users at least 18 years of age. Defined as those who made 5 or more ED visits during the prior 12 months, including the index visit.	The case management (CM) team provided individualized services to each participant in the intervention group, emphasizing care coordination and facilitating communication between health care team members. Specifically, CM team members provided counseling, based on motivational interviewing and cross-cultural competences, on substance abuse (if applicable) and use of medical services. The intervention group received the CM intervention at baseline and at 1, 3, and 5 months.	Case management
Bradley et al., 2018	RCT	Subjects who had household incomes below 100% of the federal poverty level, and had no other health insurance coverage. Childless adults, many of whom were likely to have multiple chronic conditions; aged 21–64 years; spoke English; and resided in the community (e.g., not homeless or living at a drug or alcohol rehabilitation facility).	Subjects were randomly assigned and given six months to see their primary care provider. If there was a health care claim indicating that the subject saw their PCP within this six-month period, the subject was paid either \$25 or \$50 depending on group assignment. Subjects were paid only once and only for the first PCP visit. Subjects in the \$0 group did not receive a payment other than the initial \$10 to complete the baseline survey.	Patient financial incentives
Brown et al., 2020	RCT	Participant eligibility was based on frequent or avoidable acute care services (emergency department [ED] visits and hospitalizations), the presence of uncontrolled chronic conditions, and provider referral	Case management services designed to address patients' social and health needs. Case managers took the following 3 steps: 1) social needs screening to inquire about patients' needs, including food, transportation, housing, finances, employment, legal support, safety, and social support, as well as unmet medical, behavioral health, dental, and vision care needs; 2) worked collaboratively to develop a patient-centered care plan; and 3) supported patients' progress on goals through coaching, help with applications for public benefits, referrals to social services, assistance communicating with health care providers and social service agencies, and direct access to resources managed by CommunityConnect (cell phones, emergency housing funds, and legal aid).	Case management
Brown et al., 2022	RCT	High-risk patients from the population of Medicaid beneficiaries. Adults aged 18 years or older residing in Contra Costa County	The Care Connections Program (CCP) embedded community health workers (CHWs) in 8 primary care clinics. CHWs guided several patient interventions for clinically and socially complex patients, including medication review, health system navigation, home visits, health coaching, care transitions support, social support, and linkages to appropriate resources.	Care coordination
Buckley et al., 2010	Time series	Low-urgency patients seen in an after-hours general practice clinic	Opening of an after-hours clinic, of patients triaged as Australasian Triage Scale (ATS) category 4 or 5 (at any time of day, and during the hours of operation of the clinic), and of patients triaged as ATS category 1, 2 or 3 (at any time of day).	Additional clinics
Campos-Gomez and Campos-Gomez, 2022	Retrospective cohort	Lung cancer patients	Preventive care intervention: Patients and their primary caregivers were instructed during clinical visits, on how to better manage the side effects of the treatment at home; included care coordination strategies during outpatient systemic therapy treatment.	Prevention program
Chang et al., 2018	RCT	High-risk veterans with a recent hospitalization or ED visit	Primary care Intensive Management teams (PIM). The PIM teams were led by primary care physicians and generally consisted of nurses, social workers, and psychologists. Three teams also included peer support specialists. The teams performed comprehensive assessments, preventative home visits, transitional care management, medication management, care coordination, health coaching, patient and caregiver education, case management for social needs, and advance care planning.	Care program

Chaudhuri et al., 2019	Before-and-after	Patients with cancer-related symptoms	An acute care clinic, appropriately staffed to provide ancillary services, was set up in an academic hospital outpatient setting with hours of operations 10:30- 8:00 pm to effectively manage patients with cancer-related symptoms.	Additional clinics
Chen et al., 2014	RCT	Patients diagnosed with lung cancer	Patient-centered home-telemonitoring in cancer self-management	Telemonitoring and self-management Care program
Chow et al., 2019	Before-and-after	Complex elderly patients at high-risk for incurring expensive health care system use (ie. frequent emergency room visits or hospitalizations). Patients referred to GERIPACT by primary care providers	GERIPACT is an inter-professional team of 2 clinicians, 1 social worker, and 1 care coordinator. It's services include frequent office visits for medical and social work needs, frequent telephone contact to patient and caregivers, home visits, specialty visit accompaniment, and a 24/7 telephone hotline.	
Colligan et al., 2017	Retrospective cohort	Medicare fee-for-service patients with active cancer (breast, lung, lymphoma, and colorectal cancers)	Two interventions were evaluated in two different patients groups: COME HOME (Community Oncology Medical home) and PCCP (Patient Care Connect Program) practices. 1. COME HOME: Triage pathways to help first responders and nurses identify and manage patient symptoms; extended access to outpatient care during evenings and weekends for the practices' symptomatic patients after chemotherapy, radiation therapy, or surgery; and diagnosis and treatment pathways based on nationally recognized, evidence-based standards to guide clinical decision making and support patient self-management. 2. PCCP: A patient navigation program. The PCCP employed and trained nonclinical navigators who educated and empowered cancer patients and survivors, connected patients and caregivers with resources, and improved adherence to care plans.	1. Care model 2. Care coordination
Connolly et al., 2018	Before-and-after	21 long-term care facilities with above-average rates of hospital presentations during the three-month period excluding the calendar month prior to intervention start. All facility residents during the study period were included	Aged Residential Care Intervention Project (ARCHIP): (a) baseline facility assessment identifying needs, and facility care plan developed by study gerontology nurse (GNS) specialist and facility senior nurse; (b) clinical coaching for long-term care (LTC) nurses & care-givers, with increased clinical coaching time at each facility; (c) three 1-hour multidisciplinary team meetings, including medication review, by study geriatrician, GNS, pharmacist & facility general practitioner and senior LTC nurse(s).	Care program
Crane et al., 2012	Controlled before-and-after	Uninsured, frequent users of the ED (at least 6 times during a 12-month period), with a family income of 200% or below the federal poverty guidelines	The program was based at the Free Clinics of Henderson County. It included 4 components: twice-weekly drop-in group medical appointments staffed by an interdisciplinary team of a family physician, behavioral health professional, and nurse case manager; direct telephone access to registered nurse care manager; small group "life skills and support" sessions with the care manager; short, individual sessions after the group medical visit.	Care program
Davis et al., 2018	Before-and-after	Parents of pediatric patients seen in a family medicine residency clinic	To improve parent education, posters describing the walk-in clinic were placed in the waiting area as well as examination rooms; office staff and physicians were given updated scripting to discuss with patients; the after-hours phone triage line was updated; and bookmarks that described our walk-in clinic as well as an after-hours call line were placed in the books our children get at each well-child examination.	Education of parents and clinic access
de Jong et al., 2017	RCT	Patients between 18 and 75 years of age with inflammatory bowel disease	Care via a telemedicine system (MyIBDcoach). This system included monthly monitoring modules, which contain questions regarding disease activity, medication use, treatment adherence, treatment satisfaction, and side-effects, including infections. The system also included questions on factors affecting disease (including nutritional status, smoking, stress, life events, anxiety and depression, social support, physical exercise, and self-management skills), and patient-reported outcome measures on quality of life and work productivity. It allowed the patient to communicate with health care workers and gave feedback to the back office and the patient.	Telemonitoring and self-management

DeCamp et al., 2020	RCT	Parents or legal guardians of publicly insured, singleton US-born infants <2 months of age at a academic general pediatrics clinic. Minimum parent age of 18 years, self-identification as Latino or Latina	The Salud al Día intervention consisted of interactive text messages throughout the child's first year of life and an educational video: appointment reminders, support for obtaining medicines, support for completing referrals, and illness care monitoring and education.	Education of parents and support
DeVries et al., 2013	Controlled before-and-after	Commercially insured members from the employer group where Emergency Room Utilization Management Initiative (ERUMI) was implemented	ERUMI: an increase in the copayment for ED visits from \$100 to \$200 and an educational brochure mailed to each household. Members with nonurgent ED visits received a reinforcement mailing and an automated follow-up call regarding ED alternatives they could have chosen.	Patient financial incentives
Dolton and Pathania, 2016	Controlled before-and-after	All patients visiting the Accident & Emergency (A&E) units of hospitals	7-day opening of GP practices	Increased primary care hours
Dukelow et al., 2019	Before-and-after	Older patients living at home who might benefit from home care services	The Community Referral by Emergency Medical Services (CREMS) program: the program allowed paramedics interacting with a patient to directly refer those in need of home care support to their local Community Care Access Centre (CCAC) for needs assessment. If indicated, subsequent referrals were made to specific services (e.g. nursing, physiotherapy and geriatrics) by CCAC.	EMS care coordination
Edelman et al., 2010	RCT	Patients receiving primary care at the Durham or Richmond VAMC with poorly controlled diabetes (A1c>=7.5%) and blood pressure (BP) (systolic BP >= 140 or diastolic BP>=90)	Groups of the same 7-8 patients met with the same pharmacist and general internist each visit; there were different physicians and pharmacists across groups. Each session included group education and structured group interactions moderated by a registered nurse or certified diabetes educator. Additionally, individual medication adjustments were made by the pharmacist and physician to manage A1c and BP. Each group met every two months for a year.	Education of patients
Eicken et al., 2020	Before-and-after	Adult patients with diabetes	The innovative community paramedicine program (CPP) provided in-home disease management, education, and care/community resource connection by paramedics.	EMS care coordination
ElBestawi et al., 2018	Prospective cohort	Long-term care residents	PREVIEW-ED. The new tool, Practical Routine Elder Variants Indicate Early Warning for Emergency Department (PREVIEW-ED), was designed with nine indicators, each with weighted signs and symptoms depending on the severity. The tool design prompted PSWs (Personal Support Workers) to indicate whether the resident they were caring for seemed to be "normal" for that resident or whether there was a change.	Screening tool
Elston et al., 2022	Controlled before-and-after	Patients aged 18 years or older who were predicted to be at high risk of attending the ED within the next 6 months were defined as frequent attenders	Intervention recipients were assigned a health navigator coach that typically contacted them every 1–2 weeks by telephone - and over a period of 6 to 9 months, they worked with the patient (using standardised templates) to optimise their medical treatment, nursing and care coordination, and motivated them to improve their self-care and well-being (developing a joint plan with goal-setting).	Care coordination
Epperson and Shipman, 2019	Before-and-after	A selected group of the highest utilizers involved in the community care coordination (CCC) program	Community care coordination (CCC). The CCC team consisted of two registered nurses, two social workers, a nurse practitioner, and two bilingual community health workers who followed patients up to 6 months post-discharge from the ED or hospital. The team made frequent visits to patient homes to assess and assist with social and health care needs. They made frequent face-to-face contact with super-utilizers to coordinate individual care plans, establish follow-up, and educate home-management for chronic conditions to addressed underlying social barriers and provided necessary resources to prevent disease progression necessitating acute care services.	Care coordination
Eustache et al., 2023	Prospective cohort	Patients who had elective abdominopelvic colorectal surgery	A mobile phone app that comprised of patient education material, daily questionnaires assessing postdischarge recovery, and patient-provider chat function was used.	Self-management
Fieldstone et al., 2013	Before-and-after	Caregivers of children aged 7 months to 5 years recruited from primary care centers	Didactic session and skills demonstration, following a highly participatory curriculum developed with adult learning principles in mind. It was taught by trained pediatric nurses from the Children's Hospital ED and addressed fever, colds, and minor trauma - the most common non-urgent pediatric chief complaints presenting to EDs.	Education of parents

Foucaud et al., 2022	Before-and-after	EMS calls relating to patients aged 75 or above were included	The REGESA intervention consisted of providing specific training and tools to EMS physician dispatchers to improve their knowledge of the specific aspects of emergency care in older patients and to help them better manage older patients dispatching, notably by gathering specific key information and by using other pathways than the ED when possible.	Education of staff
García-Gollarte et al., 2014	Cluster RCT	Persons older than 65 years, who had been living in a nursing home for at least 3 months	10 hour educational program for physicians, followed by on demand support by phone (nursing home staff, physician and nurses). A nursing home physician, expert in drug use in older people, delivered a structured educational intervention. The program included general aspects of prescription and drug use in geriatric patients, how to reduce the number of drugs, to perform a regular review of medications, to avoid inappropriate drug use, to discontinue drugs that do not show benefits, and to avoid undertreatment with drugs that have shown benefits.	Education of staff
Gellis et al., 2014	RCT	Medically frail older homebound individuals, aged 65 and older who were above-average users (≥ 10 days in the hospital in the past 12 months, seen in the emergency department (ED) in the last 2 months, or required ≥ 3 home care visits per week) and had a primary diagnosis of heart failure or COPD. Individuals who screened positive for depression as indicated by a Patient Health Questionnaire-2 (PHQ)16 score of 3 or greater were included in the study	The I-TEAM (Integrated Telehealth Education and Activation of Mood) intervention consisted of integrated telehealth chronic illness and depression care, with a telehealth nurse conducting daily telemonitoring of symptoms, body weight, and medication use; providing eight weekly sessions of problem-solving treatment for depression; and providing for communication with participants' primary care physicians, who also prescribed antidepressants.	Telemonitoring
Ghimire et al., 2021	Before-and-after	Patients 18 years and older with frequent exacerbations of COPD and asthma	A single home visit. The home visit team comprised of the chronic lung program team that included nurse practitioner, respiratory therapist, medical social worker and outreach social worker. The team assessed medical history and medication use. Interventions included disease specific education, trigger assessments, and onsite spirometry. Social needs such as transportation barriers were assessed by the medical social worker.	Home visit
Gingold et al., 2022	Non-randomized controlled trial	Patients with low acuity calls to 911	Minor Definitive Care Now (MDCN). The MDCN field team consists of a community paramedic as well as an emergency physician or nurse practitioner, and uses a sports utility vehicle equipped for treatment in place. Monitoring 911 dispatch calls in real time, the MDCN team responds to low-acuity calls in parallel to standard emergency response. Faced with multiple eligible calls, the team may select calls that are amenable to avoiding ED transport based on caller location, complaint, age, or other dispatch system information. The MDCN team screens the patient and, if clinically appropriate and the patient consents, renders definitive on-scene care.	Prehospital triage and treatment
González-Ortega et al., 2016	RCT	Complex chronic patients from three primary care teams	Each patient in the intervention group received 11 phone calls. During each call, the intervening family physician asked patients about their current health status and symptoms, medication adherence, possible side effects of treatment, and the presence of social problems or any other contextual problem that might affect their chronic health conditions. If the patient had a caregiver, the physician talked also with them. The physician also reviewed the patient's electronic clinical record in order to ensure awareness of any clinical incidence regarding test results, visits to specialists, changes of treatment, hospital admissions or emergency visits.	Telephone follow-up with physician
Gould Rothberg et al., 2021	Before-and-after	Patients at the Oncology Extended Care Clinic clinic	Opening of Oncology Extended Care Clinic	Additional clinics
Grove et al., 2021	Retrospective cohort	Patients 18 years of age or older with schizophrenia or a schizoaffective disorder	Enhanced primary care that included features tailored for individuals with serious mental illness (SMI): care coordination, peer support, and self-management programs, and received referrals of people with SMI who were receiving outpatient behavioral healthcare from community providers but were not in primary care.	Change in primary care
Haag et al., 2016	RCT	High-risk elderly (aged ≥ 60 years) who were enrolled in the local care transitions program	A medication therapy management consultation with a pharmacist by telephone, preferably within 3 (and up to 7) business days after hospital discharge.	Telephone follow-up with pharmacist

Halita et al., 2021	Before-and-after	Patients aged 18 years or older who had incurable advanced cancer without further life-prolonging oncologic therapies	Palliative care (PC) pathway. The patients had a palliative home care team responsible of the PC at home, if this was desired, and a planned ward in a community hospital for end of life (EOL) care, where patients could be admitted from the ER or straight from their home according to their own wishes. A PC outpatient unit was established at the hospital. This included one part time physician with special competency in palliative medicine and a nurse. The PC unit coordinated the PC pathway and provided consultation serviced for the communities and hospital.	Care program	
Harrap et al., 2022	Before-and-after	Patients referred to the Lewisham Integrated Medicines Optimisation Service (LIMOS)	LIMOS: This service provided a formal pathway for the referral of patients with medicines-related problems identified in primary and secondary care for management by a specialist pharmacy team. The team, comprising of specialist pharmacists and pharmacy technicians, assessed, supported, and followed referrals with the aim of providing an integrated and deliverable pharmaceutical care plan. The aim is to enable patients, particularly those who are at high risk of admission, to get the most from their medicines whilst remaining independent and safe. The service is conducted in hospital, patients' homes and in care homes.	Pharmacist involvement	
Hastings et al., 2019	RCT	Patients discharged from the Durham VAHCS (VA Health Care System) ED, received primary care at a Durham VAHCS-affiliated clinic, and were at high risk for repeat ED visits	Telephone support which consisted of two core calls by a primary-care nurse in the week following an ED visit. The structured support focused on three key areas: (1) improving the transition from ED to primary care; (2) enhancing chronic disease management; and (3) educating Veterans and family members about VHA's primary medical home model and other VA and community services.	Telephone follow-up	
Hawa et al., 2022	Prospective cohort	Children seen in the GI clinic for constipation at a tertiary care referral center	Constipation action plan (CAP): 3 intervention levels based on the patient's current symptoms. Each included instructions on behavioral and pharmaceutical treatment tailored to the patient's symptom severity as well as when to proceed to the next step for intervention.	Case management	
Heath et al., 2015	Before-and-after	Patients discharged from a childrens hospital	Standardized follow-up phone calls by a physician after hospital discharge.	Telephone follow-up with physician	
Holmes et al., 2020	Retrospective cohort	Homeless patients presenting to the study hospital clinics and ED	A program using a bricks-and-mortar dedicated homeless clinic, administrated by hospital clinical systems, staffed with family medicine physicians, located close to homeless shelters and camps at Fort Worth, TX, and functions as a medical clinic for this unique population.	Additional clinics	
Howell, 2016	Before-and-after	Medicaid and uninsured patients	Telephone triage 24/7. The initial staff consisted of a department director, 4 registered nurses (RNs) working 12-hour shifts and 2 on-call RNs as contingency staff. Marketing involved a refrigerator magnet, neighborhood events, radio ads, television interviews, and newspaper ads and by placing flyers in churches, as well as community-owned buildings. Further, they networked with local clinics and found some who were willing to provide standing appointments to be filled with telephone triage callers.	Telephone triage	
Huang et al., 2020	Before-and-after	Patients with sickle cell disease > 18 years old	Individualized care plan. A care plan that tailors analgesics choices, dosage, fluid rate and non-opiate therapies for home, ED or inpatient ward settings. A copy of the care plan was given to the patient and scanned into Electronic Medical Records.	Case management	
Hwang et al., 2018	Retrospective cohort	Uninsured patients ages 18 and older	Free clinics. They typically offered general medical care, immunizations, chronic disease management, pregnancy testing, gynecology/birth control, and links to medication assistance. Some clinics provided mental health counseling, sexually-transmitted disease testing and treatment, limited on-site dental care or referrals to regional dental clinics, social services, and health education.	Free primary care clinics	Free primary care clinics
Kalwani et al., 2015	Before-and-after	Frequent ED users	Community health workers (CHWs): these CHWs visit discharged patients and assist them in obtaining basic services, prescription refills and transportation to outpatient appointments.	Care coordination	

Kilburn et al., 2017	RCT	Families referred to the first-born program (FBP)	Intensive home visiting program delivered in homes of primary caregivers and their first-born children. The FBP home visitor team included a registered nurse or other licensed health care professional, who provided a postpartum home visit, delivered the medical components of the curriculum, and continued to participate in the home visits when families encountered medical challenges. The second member of the home visitor team was a parent educator who delivered the nonmedical components of the curriculum.	Home visit
Lachaud et al., 2021	RCT	Homeless adults with mental illness	Housing First involved immediate access to housing and mental health support services and included a monthly rent supplement (C\$ 600) - and assertive community treatment (ACT). ACT included an inter-professional team offering nursing and medical care, case management support, and peer support with 24/7 coverage.	Care coordination and housing
Lee et al., 2016	Before-and-after	Pediatric gastroenterology patients	Pediatric gastroenterologists began receiving reports with rates of ED utilization by their patients. The reports contained information on only those patients who were seen in the ED and discharged from the hospital, excluding those who required admission to the hospital or to observation.	ED reports to specialists
Lee et al., 2017	Time series	Pediatric patients visiting specialist-physicians	ED utilization reports: the pediatric specialists began receiving reports with rates of ED utilization by their patients. Two separate reports were distributed: (1) 1 individualized to the physician; and (2) 1 with all physician rates for the divisional leadership. The divisions received follow-up reports every 6 months. In terms of specific interventions, this was left up to the divisions. The majority of the divisions did not have a specific intervention: neurology, hematology and oncology, and infectious disease. On the basis of their data, the pediatric pulmonologists implemented a call-back program in which their nurse would call high-risk patients after discharge from the hospital.	ED reports to specialists
Lin et al., 2015	Prospective cohort	Home-dwelling older patients aged ≥60 years admitted to general medical wards	Integrated Care and Discharge Support (ICDS) for elderly patients. For the hospital component, risk stratification, comprehensive geriatric assessment, and discharge planning were performed. Link nurses (who serve as 'link' between in-patients and community services) worked with geriatricians to perform multidimensional assessments. In the community component: Integrated Care Model case management and home support team (HST) service. Two social workers, one physiotherapist (PT), one occupational therapist (OT), and half a nurse (advanced practice nurse) took turns to be a case manager. THE HST included nurses, PT, OT, and other allied health members.	Care coordination
Litzelman et al., 2017	Before-and-after	Medicare beneficiaries aged 65 or older with depression or dementia, who had at least 1 visit within the past 2-years to a primary care practice	Care coordinator assistants (CCA) conducted and documented advance care planning conversations with patients during home health visits. They worked in interdisciplinary teams and provided care to patients and caregivers at home as part of Aging Research's Aging Brain Care Program.	Home visit
Lukin et al., 2016	Controlled before-and-after	Residential aged care facilities (RACF) patients	The Hospital in the Nursing Home (HiNH) program was operated mainly by a team of ED-based nurses. Major components of the intervention included sending clinical staff from hospitals to RACFs to provide outreach services for RACF patients, and providing support and education for RACF staff and GPs to increase their knowledge and confidence in the acute care for their patients, such that an increased range of procedures (e.g., urinary catheter change, parenteral antibiotic administration, wound care, etc.) could be alternatively provided within patients' own facilities instead of at EDs.	Education of staff and outreach hospital

McAlister et al., 2018	Prospective cohort	All Albertans aged 20 years or older who were seen by a primary care physician at least once in 2008 or 2009	A primary care network. In Alberta, primary care networks were established in 2005 to help facilitate both access to primary care and adoption of the Patient Medical Home model of care, which focuses on chronic disease management, health maintenance and prevention. There is no one structure for primary care networks (varying from one co-located clinic to several offices in a geographic area).	Change in primary care
McCarthy et al., 2017	Before-and-after	High healthcare utilizers; adult patients 18 years or older	Community Paramedics (CP) program. CPs conducted home/shelter visits, reviewed medication compliance, and arranged social services among other activities.	Community paramedic program
McCormack et al., 2013	Controlled before-and-after	Frequent ED users: defined as at least 5 ED visits annually for 2 consecutive years and 1 within 6 months. Inclusion criteria were also had alcohol dependence, and had been undomiciled without shelter use for 9 of 24 months	On each subsequent visit, the social worker and outreach team met with participants, guided by previously developed care plans to offer shelter on discharge. Assigned caseworkers relocated participants into increasingly supportive settings, coordinated multidisciplinary care, and updated plans during biweekly interagency meetings on the basis of participants' medical, psychosocial, and housing needs.	Case management
Mierdel et al., 2015	Before-and-after	Patients with Chronic Obstructive Pulmonary Diseases and/or Congestive Heart Failure	The telehomecare initiative brought together specially trained clinicians and technology to help patients with chronic disease monitor vital signs and learn to manage their health at home through self-management coaching. Oxygen saturation, weight, blood pressure and heart rate were measured weekdays and transmitted by tablet to a designated clinician who could monitor patterns.	Telemonitoring and self-management
Misra-Hebert et al., 2022	Retrospective cohort	Adult patients with a high risk score (≥ 40) at discharge	A post-discharge home visit program utilizing the skills of advances practice nurses who are independent practitioners, and paramedics who have expertise in responding to acute care.	Home visit and follow-up
Mooney et al., 2021	Prospective cohort	Patients 18 years or older with cancer	Huntsman at Home (HH), a hospital-at-home program. Patients were admitted who required continued acute-level medical care after hospitalization or who had continuing unstable symptoms related to treatment or disease progression that would otherwise require ED evaluation or further hospitalization.	Home visit and follow-up
Morphew and Altamirano 2017	Before-and-after	Children aged 2 to 18 years, with high-risk persistent asthma	Breathmobile (BM) program. The intervention included reminder letters for tests and recommended immunizations, quarterly screening and monitoring by a disease management coordinator, quarterly educational paper mailings reviewing self-management techniques, and a list of self-management classes.	Care program
Nejtek et al., 2017	Before-and-after	Frequent utilizers >18 years old (been transported to the ED ≥ 4 times within a 1-year)	Mobile Integrated Health (MIH) program. The program delivered twice weekly in-home visits, provided health education coaching, performed routine health screenings, vital signs, phlebotomy, electrocardiograms, injections, wellness check-ups, medication management, and assessed home safety issues.	Home visit
Nene et al., 2020	Prospective cohort	Adult patients with inflammatory bowel diseases	Rapid access clinic service (RAC). RAC visits consisted of fast-track evaluation of disease activity using clinical assessment and laboratory markers.	Rapid access to clinical services
Newman et al., 2017	Time series	High utilizers in patient-centered medical home (PCMH)	Care manager in a PCMH. An early focus for the care manager was to develop a list of patients who were high utilizers of care, defined as either having two or more admissions per year or 10 ED visits per year, and then developing and implementing a comprehensive care plan for each patient.	Case management
Nguyen et al., 2021	Controlled before-and-after	Cancer patients (excluded leukemias and nonmelanoma skin cancers)	Oncology urgent care clinics (UCC) to treat common acute care needs.	Additional clinics
Ohuabunwa et al., 2021	Before-and-after	Patients either hospitalized or had visited the ER up to three times within a 90-day period during the study period	Transitional care model utilizing community health workers (CHWs). The intervention was focused on increasing patient access to primary care with linkage to a primary medical home, promotion of acquisition of self-management skills through education, and coordination of care through the support of a CHW who followed the participant for a period of 12 months post-discharge.	Care program

Patel et al., 2017	Before-and-after	Children with epilepsy	The 5 major interventions included: (1) beginning an established urgent epilepsy clinic (UEC) to improve access; (2) deploying a seizure action plan (SAP) to improve knowledge around home seizure management; (3) supporting proper dosing of abortive seizure medications via the electronic health record (EHR); (4) providing reminder magnets with instructions of use for abortive seizure medications; and (5) review of previous high utilizers of the ED for epilepsy care to address unique issues.	Care coordination
Post et al., 2021	RCT	Complex patients at high risk of ED use	Community-based case management. The intervention included two components: (1) identification of target patients with a predictive model; (2) triage to case management agencies and patient-centric case management.	Case management
Racine et al., 2009	RCT	Pediatric patients younger than 21 years presenting to a busy inner city pediatric ED	The intervention consisted of telephone contact with the patient, parent, or guardian originating from the primary care site within 72 hours of the PED visit to inquire about the follow-up status of the patient, schedule a primary care follow-up visit if necessary, offer brief counseling regarding the availability of after-hours telephone contact at the primary care site in the event of episodic illness, and provide specific advice regarding the appropriate use of the PED.	Telephone follow-up
Raffetto et al., 2014	Time series	Patients who were enrolled in one of the medical home pilots	Medical homes. The Los Angeles County Department of Health Services (LADHS) expand its primary care services through the creation of patient-centered medical homes - a team-based delivery model that provided comprehensive and coordinated medical care.	Change in primary care
Rousey et al., 2013	Before-and-after	Patients with advanced lung cancer	Home care visits , with an average of 12 visits per patient.	Home visit
Ruchlewska et al., 2014	RCT	Adult outpatients diagnosed with psychotic or bipolar disorder who had experienced at least one psychiatric crisis in the previous two years.	Crisis plan. Two types of advance statement were used: (1) a crisis plan formulated by the patient with the help of a patient advocate (Patient Advocate Crisis Plan: PACP); and (2) a crisis plan developed together with the clinician (Clinician-facilitated Crisis Plan: CCP).	Self-management
Sanchez et al., 2015	Retrospective cohort	Patients discharged home from hospital	Pharmacist follow-up telephone call. Pharmacists conducting patient telephone call interventions utilized a standardized data collection form that included a review of current clinical status, a medication reconciliation process that included an evaluation of discharge and home medications, a reminder of follow-up appointments, and a discussion of what to do if a problem occurred (contact acute care office vs report to ED). Specifically, the medication reconciliation process involved asking patients to bring their medications to the phone to obtain an accurate list of the medications they were taking.	Telephone follow-up with pharmacist
Sathyanarayanan et al., 2021	Before-and-after	Frequent users (3 visits in 12 months prior to enrollment)	The case managers created care plans for each patient through weekly care team meetings. They arranged transportation for appointments, scheduled physician appointments, aided in refilling patients' medications, communicated continuously with physicians, and arranged support services such as community, legal, substance abuse, homeless shelter, and other health services.	Case management
Schamess et al., 2017	Before-and-after	Chronically ill patients with one or more disabling conditions	OSU Healthy at Home (OSUHH). The first visit consisted of a full history and physical, along with a psychosocial needs assessment that covered physical limitations; transportation barriers; patterns of emergency room and hospital use; family and community support; home health; and evaluation of physical safety, food and housing security. The interval and content of subsequent visits was determined by the HBPC provider, with the aim of addressing identified health and social issues. Visits were scheduled every 3 months at a minimum; but many patients received more frequent visits.	Home visit
Schickedanz et al., 2019	Non-randomized contr	High utilizers	A telephonic social needs screening and navigation program. The 14-question social needs screener typically took 5–7 min to complete. If a patient screened positive for one or more unmet social need and was interested in help, the program associate performed a full intake assessment (10–15 min) for enrollment in social needs navigation.	Screening and social program

Schmidt et al., 2015	Before-and-after	Patients 18 years or older with a diagnosis of type 2 diabetes and uninsured or underinsured	A community health worker-led diabetes education program (DEP). The DEP program consisted of 2 initial 60-minute educational sessions and quarterly clinical assessments scheduled for 30 to 60 minutes for a maximum of 6 patient-contact hours over 12 consecutive months. During the 2 educational sessions, the CHWs educated DEP participants about diabetes and the importance of blood glucose control, medication adherence, diet, and exercise. In addition to the educational sessions, CHWs performed quarterly clinical assessments of HbA1c, blood pressure, weight, and foot condition (visual and monofilament as-sessment). They also assessed self-management behaviors and facilitated goal setting at each visit.	Education of patients
Schmidt-Mende et al., 2017	Cluster RCT	Patients 65 years or older	Educational outreach visits to primary care practices with feedback on prescribing and the development of a working procedure on medication reviews.	Education of staff
Seaberg et al., 2017	RCT	Patients frequently visiting the ED	Patient navigator (PN) program: a PN who worked with ED patients to review diagnoses and prescriptions, helped arrange follow-up appointments and transportation, and identified community resources that could help the patient. The PN performed these duties at the time of initial visit, at any subsequent ED visits, and at the telephone follow-up calls within 2 weeks and 12 months of the initial visit.	Care coordination
Shah et al., 2015	Prospective cohort	Older adult patients in a senior living community	Health e-Access could be used when patients had acute illness symptoms. It provided patient-to-provider, real-time, or store-and-forward telemedicine service. The extensive services available included video and audio communication, images, video clips, coun and 12 lead electrocardiograms. A telemedicine assistant facilitated the visit with the older adult patient.	Telemonitoring
Siddique et al., 2012	RCT	Patients with low-risk chronic obstructive pulmonary disease	Education: A locally-developed educational brochure was mailed to patients in the education group. The brochure we mailed to low-risk patients and included recommendations for smoking cessation, influenza and pneumococcal vaccinations, regular exercise, information about medications for COPD, and information about recognizing and treating COPD exacerbations.	Education of patients
Spector et al., 2019	Before-and-after	Pediatric patients	A multidisciplinary, pediatric pain clinic provided specialized, pediatric pain management services including both traditional management options like medication, physical and occupational therapy, and mental health counseling, as well as holistic treatments ranging from relaxation techniques to acupuncture.	Additional clinics
Stergiopoulos et al., 2017	RCT	Frequent ED users defined as dults (≥18 years of age) who had five or more ED visits in the past 12-months, with at least one visit for mental health or addictions	Brief case management: The Coordinated Access to Care from Hospital EDs (CATCH-ED) team. CATCH-ED case managers worked with participants over 4–6 months to first foster engagement and identify needs and goals, secondly to connect participants to needed community-based services, and finally to transition and transfer participant care to longer-term community services. As part of the program, case managers offered outreach and home visits, crisis intervention, supportive therapy, practical needs assistance and care coordination, aiming to integrate hospital, community and social care and improve continuity of care.	Case management
Street et al., 2018	Before-and-after	Patients who are vulnerable in the community, the majority of whom are elderly	The Acute Care Navigation service: A non-clinical service comprised of three care navigators who liaised and shared information between acute and community-based health services, social and third sector groups.	Community program

Tadros et al., 2012	Before-and-after	Adult frequent users of health services (with ≥10 EMS transports within 12 months and others reported by prehospital personnel with significant recent increases in transports)	Resource Access Program (RAP). RAP employs EMS (emergency medical services) system surveillance, case management, and referral to identify and modify medical and psychosocial factors fueling repeated calls to 9–1-1. The RAP Coordinator contacted clients by phone or in person and investigated factors underlying the excessive use of acute care resources, including lack of transportation, social support, and health literacy. The RAP Coordinator interfaced with primary care physicians, homeless services agencies, street outreach teams, hospital social workers, case managers, and adult protective services personnel. On occasion, the RAP Coordinator conducted house calls accompanied by a Homeless Outreach Team. RAP clients received education regarding appropriate use of EMS and were connected with resources including equipment, transportation, housing, social services, mental health services, and primary care. Follow-up care consisted of telephone calls and in-person reminders for repeat access of EMS for nonemergent needs.	EMS care coordination
Takahashi et al., 2012	RCT	Older adults (greater than 60 years) with a high (>15) score on the Elder Risk Assessment Index (ERA) with high-risk for rehospitalization	Home telemonitoring: The Intel® Health Guide was utilized in the patient's home. The device had real time videoconference capability and peripheral devices (scales, blood pressure cuff, glucometer, pulse oximeter, and peak flow). Patients performed daily 5–10 minute monitoring sessions for symptoms and biometric information.	Telemonitoring
Tsai et al., 2018	Before-and-after	ED high-users and occasional users	The intervention consisted of 2 components: 1. an adult primary care clinic on-campus, free of cost for uninsured patients under 200% of poverty; 2. To actively urge insured ED patients who were ED high-users or having a chronic disease/primary care–preventable condition, to either acquire a primary care physician (PCP) if they did not have one, or regularly visit their existing PCP.	Free primary care clinics
Vernon et al., 2019	Non-randomized controlled trial	Patients aged over 65 and registered at a GP that was a member of the Solihull Clinical Commissioning Group (CCG)	Telephone contact with patients -post-discharge: Two band 6 nurses attempted to contact the patients by telephone within 48 hours of discharge. When contact was made, patients were given the opportunity to discuss issues arising after discharge and were offered a home visit by one of the two nurses. The visits were an opportunity to explore issues identified in the telephone call and to further assess patient needs.	Telephone follow-up
Vohra et al., 2020	Retrospective cohort	Patients with acute decompensated heart failure	Within 3 days of discharge, community health workers conducted an initial home visit with a standard assessment including vital signs and questions regarding well-being, weight management, symptoms, and medication adherence.	Home visit
Volner et al., 2022	Before-and-after	Aerodigestive patients under the age of 18	Aerodigestive clinic (ADC): The ADC at this institution consisted of a bimonthly full day clinic regularly attended by pediatric otolaryngology, pediatric pulmonology, pediatric gastroenterology, pediatric speech language pathology and pediatric anesthesiology.	Additional clinics
Wartelle et al., 2022	Before-and-after	Patients receiving care in the ED	Opening of two new Unscheduled Care Services. These were facilities that could treat patients with low acuity conditions as an alternative to the ED. These services were performed, for the most part, by general practitioners and nurses.	Additional clinics
Westberg et al., 2014	Non-randomized controlled trial	Patients aged >65 years with selected diagnoses identified as high risk for readmission	Comprehensive medication management that was provided face-to-face in the patient's primary care clinic within 2 weeks of discharge.	Medication management
Westgard et al., 2017	RCT	Patients with non-traumatic dental conditions who are without dental insurance or covered by Medicaid	Distributing a voucher for free, prompt dental care.	Patient financial incentives
Whittaker et al., 2016	Retrospective cohort	Patient-initiated visits to EDs for minor problems	Extended access in primary care: included evening and weekend openings and served both urgent and routine appointments.	Increased primary care hours

Woods et al., 2013	Before-and-after	Patients with a primary, secondary, or tertiary diagnosis of a circulatory or respiratory condition/diagnosis	Telemonitoring: Each patient in the program was scheduled to test one or more of their vital signs (e.g., blood pressure, heart rate, and oxygen saturation). Voice and text prompts guided the patient through the testing process. A Web-based software system displayed the results for the agency nurse to review. A nurse contacted the patient to obtain more information when one or more of the patient's vital signs were outside the established parameters or when the patient did not transmit data at the predetermined schedule.	Telemonitoring
Yang et al., 2012	Before-and-after	Parents or caregivers of hospitalized pediatric patients	Post-discharge telephone calls: The content of the call followed a script. During the call, the patients' caregivers were asked how the children had been feeling since returning home, whether they had experienced any new or worsening symptoms, whether the caregivers understood how to provide their medications, whether the caregivers had any questions regarding follow-up appointments, the care the children had received during their recent inpatient stay or whether the caregivers had any other questions or concerns.	Telephone follow-up
Yoffe et al., 2011	Time series	Parents of primary care pediatric patients	A 20- page booklet was given to the parents of all children age 10 and under with the instruction that the information it contained could help parents (1) provide non-emergency care for their children at home and (2) make better decisions about when emergency services may be needed.	Education of parents