Evidence Map: Implementation Factors Influencing the Transition from Emergency to Outpatient Care Settings

Supplemental Materials

December 2021

U.S. Department of Veterans Affairs
Veterans Health Administration
Health Services Research & Development Service

Recommended citation: Kondo K, Anderson J, Young S, Ward R. Evidence Map: Factors Influencing the Transition from Emergency to Outpatient Care Settings. Washington, DC: Evidence Synthesis Program, Health Services Research and Development Service, Office of Research and Development, Department of Veterans Affairs. VA ESP Project #09-199; 2021.

TABLE OF CONTENTS

Appendix A: Search Strategy 1
Systematic Reviews 1
Primary Studies 3
Appendix B: CFIR Constructs 6
Appendix C: Excluded Studies 9
Appendix D: Evidence Tables 14
Characteristics of Included Systematic Review 14
Outcome Data of Included Systematic Review 14
Outcome Data of Included Intervention Outcome Studies 15
Barriers and Facilitators Data 19
Quality Characteristics Included Primary Studies 36
Appendix E: Research in Progress 38
Appendix F: Peer Review Disposition 39
References 44

APPENDIX A: SEARCH STRATEGY

SYSTEMATIC REVIEWS

Search for current systematic reviews (limited to last 7 years) **Date Searched: 09-13-21**			
A. Bibliographic Databases:	**#**	**Search Statement**	**Results**
MEDLINE: Systematic Reviews Ovid MEDLINE(R) ALL <1946 to September 10, 2021>	1	"Continuity of Patient Care"/	20005
	2	Patient Handoff/	1366
	3	Patient Discharge/	33694
	4	(care adj (transition or transitions or transitioning)).ti,ab.	1897
	5	(care coordination or care coordinating or continuity of care or continuity of patient care or care community).ti,ab.	13832
	6	(discharge plan or discharge plans or discharge planning or discharge instruction or discharge instructions or discharge summary or hospital discharge).ti,ab.	34424
	7	(handover or handoff or handoffs).ti,ab.	2966
	8	(emergency department intervention or ED intervention or ED based intervention).ti,ab.	126
	9	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8	91034
	10	Emergency Medical Services/	45177
	11	Emergency Service, Hospital/	77091
	12	(emergency medical service$1 or emergency room$1 or emergency department$1 or ED).ti,ab.	166822
	13	10 or 11 or 12	224209
	14	9 and 14	8336
	15	(systematic review.ti. or meta-analysis.pt. or meta-analysis.ti. or systematic literature review.ti. or this systematic review.tw. or pooling project.tw. or (systematic review.ti,ab. and review.pt.) or meta synthesis.ti. or meta-analy*.ti. or integrative review.tw. or integrative research review.tw. or rapid review.tw. or umbrella review.tw. or consensus development conference.pt. or practice guideline.pt. or drug class reviews.ti. or cochrane database syst rev.jn. or acp journal club.jn. or health technol assess.jn. or evid rep technol assess summ.jn. or jbi database system rev implement rep.jn. or (clinical guideline and management).tw. or ((evidence based.ti. or evidence-based medicine/ or best practice*.ti. or evidence synthesis.ti,ab.) and (((review.pt. or diseases category/ or behavior.mp.) and behavior mechanisms/) or therapeutics/ or evaluation studies.pt. or validation studies.pt. or guideline.pt. or pmcbook.mp.)) or (((systematic or systematically).tw. or critical.ti,ab. or study selection.tw. or ((predetermined or inclusion) and criteri*).tw. or exclusion criteri*.tw. or main outcome measures.tw. or standard of care.tw. or standards of care.tw.) and ((survey or surveys).ti,ab. or overview*.tw. or review.ti,ab. or reviews.ti,ab. or search*.tw. or handsearch.tw. or analysis.ti. or critique.ti,ab. or appraisal.tw. or (reduction.tw.	474031

		and (risk/ or risk.tw.) and (death or recurrence).mp.)) and ((literature or articles or publications or publication or bibliography or bibliographies or published).ti,ab. or pooled data.tw. or unpublished.tw. or citation.tw. or citations.tw. or database.ti,ab. or internet.ti,ab. or textbooks.ti,ab. or references.tw. or scales.tw. or papers.tw. or datasets.tw. or trials.ti,ab. or meta-analy*.tw. or (clinical and studies).ti,ab. or treatment outcome/ or treatment outcome.tw. or pmcbook.mp.))) not (letter or newspaper article).pt.	
	16	14 and 15	378
	17	limit 16 to english language and yr="2018-Current"	137
CDSR: Protocols and Reviews EBM Reviews - Cochrane Database of Systematic Reviews 2005 to September 9, 2021	1	((Continuity of Patient Care) or Patient Handoff or Patient Discharge).kw.	27
	2	(care adj (transition or transitions or transitioning)).ti,ab.	1
	3	(care coordination or care coordinating or continuity of care or continuity of patient care or care community).ti,ab.	14
	4	(discharge plan or discharge plans or discharge planning or discharge instruction or discharge instructions or discharge summary or hospital discharge).ti,ab.	76
	5	(handover or handoff or handoffs).ti,ab.	1
	6	(emergency department intervention or ED intervention or ED based intervention).ti,ab.	0
	7	1 or 2 or 3 or 4 or 5 or 6	103
	8	(Emergency Medical Services or Hospital Emergency Service).kw.	10
	9	(emergency medical service$1 or emergency room$1 or emergency department$1 or ED).ti,ab.	142
	10	8 or 9	148
	11	7 and 10	11

Search for current systematic reviews (limited to last 7 years) **Date Searched: 09-13-21**		
B. Non-bibliographic databases	**Evidence**	**Results**
AHRQ: evidence reports, technology assessments, U.S Preventative Services Task Force Evidence Synthesis	http://www.ahrq.gov/research/findings/evidence-based-reports/search.html Search: care coordination; emergency; acute	0
CADTH	https://www.cadth.ca Search: care coordination; emergency; acute	0

ECRI Institute	https://guidelines.ecri.org/ Search: care coordination; emergency; acute	0
HTA: Health Technology Assessments (UP TO 2016)	http://www.ohsu.edu/xd/education/library/ See Cochrane search above	0
NHS Evidence	http://www.evidence.nhs.uk/default.aspx Search: care coordination; emergency; acute	0
EPPI-Centre	http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=62 Use browser search function [CNTL + F] for keyword search Search: care coordination; emergency; acute	0
NLM	http://www.ncbi.nlm.nih.gov/books Search: care coordination; emergency; acute	0
VA Products - VATAP, PBM and HSR&D publications	A. http://www.hsrd.research.va.gov/research/default.cfm B. http://www.research.va.gov/research_topics/ C. https://va.dimensions.ai/discover/publication Search: care coordination; emergency; acute VA and Indian Health Services (IHS): Access for American Indian Veterans Measuring and improving specialty care coordination in VA Discharge Information & Support for Patients Receiving Outpatient Care in the ED Care Coordination for High-Risk Patients with Multiple Chronic Conditions	4

PRIMARY STUDIES

Search for primary literature **Date searched: 09-13-21**		
MEDLINE [Ovid MEDLINE(R) ALL <1946 to September 10, 2021>]		
#	**Search Statement**	**Results**
1	"Continuity of Patient Care"/	20005
2	Patient Handoff/	1366
3	Patient Discharge/	33694
4	(care adj (transition or transitions or transitioning)).ti,ab.	1897

5	(care coordination or care coordinating or continuity of care or continuity of patient care or care community).ti,ab.	13832
6	(discharge plan or discharge plans or discharge planning or discharge instruction or discharge instructions or discharge summary or hospital discharge).ti,ab.	34424
7	(handover or handoff or handoffs).ti,ab.	2966
8	(emergency department intervention or ED intervention or ED based intervention).ti,ab.	126
9	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8	91034
10	Emergency Medical Services/	45177
11	Emergency Service, Hospital/	77091
12	(emergency medical service$1 or emergency room$1 or emergency department$1 or ED).ti,ab.	166822
13	Interviews/ or interview*.ti,ab. or experience*.tw. or qualitative.ti,ab.	1614965
14	10 or 11 or 12	224209
15	9 and 13 and 14	1391
16	Limit 15 to (English language and yr=”1860-2018”)	1010
17	9 and 14	8336
18	limit 17 to (english language and yr="2018 -Current")	2636
EMBASE		
#	**Search Statement**	**Results**
1	‘clinical handover’/exp	7968
2	‘hospital discharge’/exp	144318
3	(care NEAR/1 (transition OR transitions OR transitioning)):ti,ab	3521
4	(care NEAR/2 (transition OR transitions OR transitioning)):ti,ab	7799
5	'care coordination':ti,ab OR 'care coordinating':ti,ab OR 'continuity of care':ti,ab OR 'continuity of patient care':ti,ab OR 'care community':ti,ab	18870
6	'discharge plan':ti,ab OR 'discharge plans':ti,ab OR 'discharge planning':ti,ab OR 'discharge instruction':ti,ab OR 'discharge instructions':ti,ab OR 'discharge summary':ti,ab OR 'hospital discharge':ti,ab	54051
7	handover:ti,ab OR handoff:ti,ab OR handoffs:ti,ab	4716
8	'emergency department intervention':ti,ab OR 'ed intervention':ti,ab OR 'ed based intervention':ti,ab	221
9	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8	191707
10	'patient transport'/exp	30726
11	#9 OR #10	218514
12	'emergency health service'/exp	114855
13	'emergency ward'/exp	168713
14	'emergency medical service?1':ti,ab OR 'emergency room?1':ti,ab OR 'emergency department?1':ti,ab OR ed:ti,ab	136024
15	'interview'/exp OR interview*:ti,ab OR experience*:ti,ab OR qualitative:ti,ab	2283647
16	#12 OR #13 OR #14	348778
17	#9 AND #15 AND #16	3022
18	#9 AND #15 AND #16 AND [english]/lim AND [2019-2021]/py AND [embase]/lim	825

19	#9 AND #15 AND #16 AND [english]/lim AND [2019-2021]/py	939
20	#9 AND #15 AND #16 AND [english]/lim AND [<1966-2018]/py	2030
21	#9 AND #15 AND #16 AND [english]/lim AND [<1966-2018]/py AND [embase]/lim	1768
22	#9 AND #15 AND #16	3022
23	#9 AND #15 AND #16 AND [2019-2021]/py	946
24	#9 AND #15 AND #16 AND [2019-2021]/py AND [english]/lim	939
25	#9 AND #15 AND #16 AND [2019-2021]/py AND [english]/lim AND [embase]/lim	825

#	Embase Search Statement
1	"Continuity of Patient Care"/
2	Patient Handoff/
3	Patient Discharge/
4	(care adj (transition or transitions or transitioning)).ti,ab.
5	(care coordination or care coordinating or continuity of care or continuity of patient care or care community).ti,ab.
6	(discharge plan or discharge plans or discharge planning or discharge instruction or discharge instructions or discharge summary or hospital discharge).ti,ab.
7	(handover or handoff or handoffs).ti,ab.
8	(emergency department intervention or ED intervention or ED based intervention).ti,ab.
9	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8
10	Emergency Medical Services/
11	Emergency Service, Hospital/
12	(emergency medical service$1 or emergency room$1 or emergency department$1 or ED).ti,ab.
13	Interviews/ or interview*.ti,ab. or experience*.tw. or qualitative.ti,ab.
14	10 or 11 or 12
15	9 and 13 and 14
16	Limit 15 to (English language and yr=”1860-2018”)
17	9 and 14
18	limit 17 to (english language and yr="2018 -Current")

APPENDIX B: CFIR CONSTRUCTS

Consolidated Framework for Implementation Research Constructs		
CFIR Website		
Construct		**Short Description**
I. INTERVENTION CHARACTERISTICS		
A	Intervention Source	Perception of key stakeholders about whether the intervention is externally or internally developed.
B	Evidence Strength & Quality	Stakeholders' perceptions of the quality and validity of evidence supporting the belief that the intervention will have desired outcomes.
C	Relative Advantage	Stakeholders' perception of the advantage of implementing the intervention versus an alternative solution.
D	Adaptability	The degree to which an intervention can be adapted, tailored, refined, or reinvented to meet local needs.
E	Trialability	The ability to test the intervention on a small scale in the organization, and to be able to reverse course (undo implementation) if warranted.
F	Complexity	Perceived difficulty of implementation, reflected by duration, scope, radicalness, disruptiveness, centrality, and intricacy and number of steps required to implement.
G	Design Quality & Packaging	Perceived excellence in how the intervention is bundled, presented, and assembled.
H	Cost	Costs of the intervention and costs associated with implementing the intervention including investment, supply, and opportunity costs.
II. OUTER SETTING		
A	Patient Needs & Resources	The extent to which patient needs, as well as barriers and facilitators to meet those needs, are accurately known and prioritized by the organization.
B	Cosmopolitanism	The degree to which an organization is networked with other external organizations.
C	Peer Pressure	Mimetic or competitive pressure to implement an intervention; typically because most or other key peer or competing organizations have already implemented or are in a bid for a competitive edge.
D	External Policy & Incentives	A broad construct that includes external strategies to spread interventions, including policy and regulations (governmental or other central entity), external mandates, recommendations and guidelines, pay-for-performance, collaboratives, and public or benchmark reporting.
III. INNER SETTING		
A	Structural Characteristics	The social architecture, age, maturity, and size of an organization.
B	Networks & Communications	The nature and quality of webs of social networks and the nature and quality of formal and informal communications within an organization.

C	Culture	Norms, values, and basic assumptions of a given organization.
D	Implementation Climate	The absorptive capacity for change, shared receptivity of involved individuals to an intervention, and the extent to which use of that intervention will be rewarded, supported, and expected within their organization.
1	Tension for Change	The degree to which stakeholders perceive the current situation as intolerable or needing change.
2	Compatibility	The degree of tangible fit between meaning and values attached to the intervention by involved individuals, how those align with individuals' own norms, values, and perceived risks and needs, and how the intervention fits with existing workflows and systems.
3	Relative Priority	Individuals' shared perception of the importance of the implementation within the organization.
4	Organizational Incentives & Rewards	Extrinsic incentives such as goal-sharing awards, performance reviews, promotions, and raises in salary, and less tangible incentives such as increased stature or respect.
5	Goals and Feedback	The degree to which goals are clearly communicated, acted upon, and fed back to staff, and alignment of that feedback with goals.
6	Learning Climate	A climate in which: a) leaders express their own fallibility and need for team members' assistance and input; b) team members feel that they are essential, valued, and knowledgeable partners in the change process; c) individuals feel psychologically safe to try new methods; and d) there is sufficient time and space for reflective thinking and evaluation.
E	Readiness for Implementation	Tangible and immediate indicators of organizational commitment to its decision to implement an intervention.
1	Leadership Engagement	Commitment, involvement, and accountability of leaders and managers with the implementation.
2	Available Resources	The level of resources dedicated for implementation and on-going operations, including money, training, education, physical space, and time.
3	Access to Knowledge & Information	Ease of access to digestible information and knowledge about the intervention and how to incorporate it into work tasks.
IV. CHARACTERISTICS OF INDIVIDUALS		
A	Knowledge & Beliefs about the Intervention	Individuals' attitudes toward and value placed on the intervention as well as familiarity with facts, truths, and principles related to the intervention.
B	Self-efficacy	Individual belief in their own capabilities to execute courses of action to achieve implementation goals.
C	Individual Stage of Change	Characterization of the phase an individual is in, as he or she progresses toward skilled, enthusiastic, and sustained use of the intervention.
D	Individual Identification with Organization	A broad construct related to how individuals perceive the organization, and their relationship and degree of commitment with that organization.
E	Other Personal Attributes	A broad construct to include other personal traits such as tolerance of ambiguity, intellectual ability, motivation, values, competence, capacity, and learning style.

V. PROCESS		
A	Planning	The degree to which a scheme or method of behavior and tasks for implementing an intervention are developed in advance, and the quality of those schemes or methods.
B	Engaging	Attracting and involving appropriate individuals in the implementation and use of the intervention through a combined strategy of social marketing, education, role modeling, training, and other similar activities.
1	Opinion Leaders	Individuals in an organization who have formal or informal influence on the attitudes and beliefs of their colleagues with respect to implementing the intervention.
2	Formally Appointed Internal Implementation Leaders	Individuals from within the organization who have been formally appointed with responsibility for implementing an intervention as coordinator, project manager, team leader, or other similar role.
3	Champions	"Individuals who dedicate themselves to supporting, marketing, and 'driving through' an [implementation]" [101] (p. 182), overcoming indifference or resistance that the intervention may provoke in an organization.
4	External Change Agents	Individuals who are affiliated with an outside entity who formally influence or facilitate intervention decisions in a desirable direction.
C	Executing	Carrying out or accomplishing the implementation according to plan.
D	Reflecting & Evaluating	Quantitative and qualitative feedback about the progress and quality of implementation accompanied with regular personal and team debriefing about progress and experience.

APPENDIX C: EXCLUDED STUDIES

Exclude reasons: 1=Ineligible population, 2=Ineligible intervention, 4=Ineligible outcome, 5=Ineligible timing, 6=Ineligible study design, 7=Ineligible publication type, 8=Outdated or ineligible systematic review, 9=Non-English language10=Study in Included SR, 11=Unable to retrieve FT.

Citation	Exclude Reason
Abraham J, Kannampallil TG, Reddy MC. Peripheral activities during EMR use in emergency care: a case study. AMIA Annual Symposium Proceedings/AMIA Symposium. 2009;2009:1-5.	E2
Afilalo M, Lang E, Léger R, et al. Impact of a standardized communication system on continuity of care between family physicians and the emergency department. Canadian Journal of Emergency Medicine. 2007;9(2):79-86.	E10
Althaus F, Paroz S, Hugli O, et al. Effectiveness of interventions targeting frequent users of emergency departments: a systematic review. *Ann Emerg Med.* 2011;58(1):41-52.e42.	E8
Arendts G, Bullow K, Etherton-Beer C, et al. A randomized-controlled trial of a patient-centred intervention in high-risk discharged older patients. *European Journal of Emergency Medicine.* 2018;25(4):237-241.	E5
Ballabio C, Bergamaschini L, Mauri S, et al. A comprehensive evaluation of elderly people discharged from an Emergency Department. *Internal & Emergency Medicine.* 2008;3(3):245-249.	E2
Banta-Green CJ, Coffin PO, Merrill JO, et al. Impacts of an opioid overdose prevention intervention delivered subsequent to acute care. *Inj Prev.* 2019;25(3):191-198.	E2
Baren JM, Boudreaux ED, Brenner BE, et al. Randomized controlled trial of emergency department interventions to improve primary care follow-up for patients with acute asthma. *Chest.* 2006;129(2):257-265.	E10
Bell SP, Schnipper JL, Goggins K, et al. Effect of Pharmacist Counseling Intervention on Health Care Utilization Following Hospital Discharge: A Randomized Control Trial. J Gen Intern Med. 2016;31(5):470-477.	E10
Biese K, Lamantia M, Shofer F, et al. A randomized trial exploring the effect of a telephone call follow-up on care plan compliance among older adults discharged home from the emergency department. *Acad Emerg Med.* 2014;21(2):188-195.	E10
Bodnar D, Steel P, Sperling J. Discharging low risk chest pain: Is a rapid cardiology follow-up program the answer? A pilot study. *Annals of Emergency Medicine.* 2014;64(4):S62.	E7
Bond CM, Freiheit EA, Podruzny L, et al. The emergency to home project: impact of an emergency department care coordinator on hospital admission and emergency department utilization among seniors. *Int J Emerg Med.* 2014;7:18.	E1
Bone AE, Evans CJ, Henson LA, Etkind SN, Higginson IJ. Influences on emergency department attendance among frail older people with deteriorating health: a multicentre prospective cohort study. Public Health. 2021;194:4-10.	E2
Brown MD, Reeves MJ, Meyerson K, Korzeniewski SJ. Randomized trial of a comprehensive asthma education program after an emergency department visit. *Ann Allergy Asthma Immunol.* 2006;97(1):44-51.	E10

Chan T, Brennan J, Killeen J, et al. Impact of Social Services Case Management on Homeless, Frequent Users of Emergency Departments: 577. *Academic Emergency Medicine.* 2013;20.	E7
Chang J, Chokshi D, Ladapo J. Coordination Across Ambulatory Care: A Comparison of Referrals and Health Information Exchange Across Convenient and Traditional Settings. *Journal of Ambulatory Care Management.* 2018;41(2):128-137.	E1
Cossette S, Frasure-Smith N, Vadeboncoeur A, McCusker J, Guertin MC. The impact of an emergency department nursing intervention on continuity of care, self-care capacities and psychological symptoms: secondary outcomes of a randomized controlled trial. *Int J Nurs Stud.* 2015;52(3):666-676.	E10
Cossette S, Vadeboncoeur A, Frasure-Smith N, McCusker J, Perreault D, Guertin M. Randomized controlled trial of a nursing intervention to reduce emergency department revisits. *CJEM.* 2013;15:1	E10
Currier GW, Fisher SG, Caine ED. Mobile crisis team intervention to enhance linkage of discharged suicidal emergency department patients to outpatient psychiatric services: a randomized controlled trial. *Academic Emergency Medicine.* 2010;17(1):36-43.	E10
Davis KA, Miyares MA, Price-Goodnow VS. Optimizing transition of care through the facilitation of a pharmacist-managed deep vein thrombosis treatment program. *Journal of Pharmacy Practice.* 2013;26(4):438-441.	E2
Diamant A, Swanson K, Casanova M, Magana R, Boyce E. Improving utilization of medical care and health for chronically homeless adults with housing. Paper presented at: JOURNAL OF GENERAL INTERNAL MEDICINE2011.	E7
Edgren G, Anderson J, Dolk A, et al. A case management intervention targeted to reduce healthcare consumption for frequent Emergency Department visitors: results from an adaptive randomized trial. *European Journal of Emergency Medicine.* 2016;23(5):344.	E10
Eisenstein EL, Willis JM, Edwards R, et al. Randomized Trial of Population-Based Clinical Decision Support to Facilitate Care Transitions. Paper presented at: ITCH2017.	E10
Fockele C, Duber HD, Finegood B, Morse SC, Whiteside L. Improving transitions of care for patients initiated on buprenorphine from the emergency department. *Academic Emergency Medicine.* 2020;27:S188.	E7
Griffey RT, Shin N, Jones S, et al. The impact of teach-back on comprehension of discharge instructions and satisfaction among emergency patients with limited health literacy: A randomized, controlled study. *J Commun Healthc.* 2015;8(1):10-21.	E10
Grover CA, Close RJ, Villarreal K, Goldman LM. Emergency department frequent user: pilot study of intensive case management to reduce visits and computed tomography. *West J Emerg Med.* 2010;11(4):336-343.	E2
Grover CA, Crawford E, Close RJ. The Efficacy of Case Management on Emergency Department Frequent Users: An Eight-Year Observational Study. *J Emerg Med.* 2016;51(5):595-604.	E2
Hudon C, Chouinard MC, Lambert M, Diadiou F, Bouliane D, Beaudin J. Key factors of case management interventions for frequent users of healthcare services: a thematic analysis review. *BMJ Open.* 2017;7(10):e017762.	E8
Jones C, Wood N, Cushman JT, et al. A novel community paramedicine ed-to-home care transitions program for rural older adults. *Academic Emergency Medicine.* 2019;26:S90.	E7

Kianfar S, Hundt AS, Hoonakker PLT, et al. Understanding care transition notifications for chronically ill patients. *IISE Transactions on Healthcare Systems Engineering.* 2021.	E4
Kolbasovsky A, Reich L, Futterman R, Meyerkopf N. Reducing the number of emergency department visits and costs associated with anxiety: a randomized controlled study. *American Journal of Managed Care.* 2007;13(2):95-103.	E10
Kumar GS, Klein R. Effectiveness of case management strategies in reducing emergency department visits in frequent user patient populations: a systematic review. *J Emerg Med.* 2013;44(3):717-729.	E8
Kwon N, Willis H, Warner L, et al. An emergency department discharge center to improve patient understanding of discharge instructions and care coordination. *Academic Emergency Medicine.* 2020;27:S327-S328.	E7
Lang E, Afilalo M, Vandal AC, et al. Impact of an electronic link between the emergency department and family physicians: a randomized controlled trial. Cmaj. 2006;174(3):313-318.	E10
Lee JS, Hurley MJ, Carew D, Fisher R, Kiss A, Drummond N. A randomized clinical trial to assess the impact on an emergency response system on anxiety and health care use among older emergency patients after a fall. Acad Emerg Med. 2007;14(4):301-308.	E10
Lee KH, Davenport L. Can case management interventions reduce the number of emergency department visits by frequent users? Health Care Manag (Frederick). 2006;25(2):155-159.	E2
McAiney CA, Hillier LM, Paul J, et al. Improving the seniors' transition from hospital to the community: a case for intensive geriatric service workers. International Psychogeriatrics. 2017;29(1):149-163.	E4
McCarty RL, Zarn J, Fenn R, Collins RD. Frequent ED utilizers: A case management program to address patient needs. Nurs Manage. 2015;46(9):24-31; quiz 31-22.	E2
McCormack R, DeMuth M. Feasibility of initiating treatment for alcohol use disorders in the emergency department. Paper presented at: ALCOHOLISM-CLINICAL AND EXPERIMENTAL RESEARCH2016.	E2
McCormack R, Hoffman L, Goldfrank L. Intervention to Integrate Health and Social Services for Frequent ED Users with Alcohol Use Disorders: 179. *Academic Emergency Medicine.* 2012;19.	E7
Merritt R, Kulie P, Choudhri T. A randomized controlled trial evaluating a novel approach to post-emergency department follow-up appointment planning. *Academic Emergency Medicine.* 2017;24:S81-S82.	E7
Neven D, Paulozzi L, Howell D, et al. A Randomized Controlled Trial of a Citywide Emergency Department Care Coordination Program to Reduce Prescription Opioid Related Emergency Department Visits. J Emerg Med. 2016;51(5):498-507.	E10
Newman N, Porter B, Hoyt C, et al. Impact of community pharmacy and home health care transitions of care services on 30-day emergency department revisit rates. *Journal of the American Pharmacists Association.* 2016;56(3):e92.	E7
Ohuabunwa U, Johnson E, Turner J, Jordan Q, Popoola V, Flacker J. An integrated model of care utilizing community health workers to promote safe transitions of care. *Journal of the American Geriatrics Society.* 2021;19:19.	E1
Oscalices MIL, Okuno MFP, Lopes M, Campanharo CRV, Batista REA. Discharge guidance and telephone follow-up in the therapeutic adherence of heart failure: randomized clinical trial. *Revista Latino-Americana de Enfermagem.* 2019;27:e3159.	E5

Patel PB, Vinson DR. Physician e-mail and telephone contact after emergency department visit improves patient satisfaction: a crossover trial. Ann Emerg Med. 2013;61(6):631-637.	E10
Pillow MT, Doctor S, Brown S, Carter K, Mulliken R. An Emergency Department-initiated, web-based, multidisciplinary approach to decreasing emergency department visits by the top frequent visitors using patient care plans. J Emerg Med. 2013;44(4):853-860.	E2
Poremski D, Kahan D, Pauly D, Stergiopoulos V. Challenges in continuity of care: The experience of frequent users of emergency departments in a large metropolitan center in Canada. Annals of the Academy of Medicine Singapore. 2015;44(10):S227.	E11
Rathlev N, Almomen R, Deutsch A, Smithline H, Li H, Visintainer P. Randomized Controlled Trial of Electronic Care Plan Alerts and Resource Utilization by High Frequency Emergency Department Users with Opioid Use Disorder. West J Emerg Med. 2016;17(1):28-34.	E10
Reinius P, Johansson M, Fjellner A, Werr J, Ohlén G, Edgren G. A telephone-based case-management intervention reduces healthcare utilization for frequent emergency department visitors. Eur J Emerg Med. 2013;20(5):327-334.	E2
Rinke ML, Dietrich E, Kodeck T, Westcoat K. Operation care: a pilot case management intervention for frequent emergency medical system users. Am J Emerg Med. 2012;30(2):352-357.	E2
Rosted E, Poulsen I, Hendriksen C, Petersen J, Wagner L. Testing a two step nursing intervention focused on decreasing rehospitalizations and nursing home admission post discharge from acute care. Geriatr Nurs. 2013;34(6):477-485.	E10
Salerno S, Duckles J, Elliot A, Sellers CA, Christensen T, Shah MN. A qualitative exploration of emergency department revisits by older adults. Academic Emergency Medicine. 2013;20(5):S292-S293.	E7
Sharp B, Singal B, Pulia M, Fowler J, Simmons S. You've got mail … and need follow-up: the effect and patient perception of e-mail follow-up reminders after emergency department discharge. *Acad Emerg Med.* 2015;22(1):47-53.	E10
Shumway M, Boccellari A, O'Brien K, Okin RL. Cost-effectiveness of clinical case management for ED frequent users: results of a randomized trial. *Am J Emerg Med.* 2008;26(2):155-164.	E10
Skinner J, Carter L, Haxton C. Case management of patients who frequently present to a Scottish emergency department. *Emerg Med J.* 2009;26(2):103-105.	E2
Soril LJ, Leggett LE, Lorenzetti DL, Noseworthy TW, Clement FM. Reducing frequent visits to the emergency department: a systematic review of interventions. *PLoS One.* 2015;10(4):e0123660.	E8
Spivock Smith S, Mahon B, Smith M. Creating a continuum of care: Seniors emergency center. Journal of the American Geriatrics Society. 2011;59:S50.	E7
Stergiopoulos V, Gozdzik A, Cohen A, et al. The effect of brief case management on emergency department use of frequent users in mental health: Findings of a randomized controlled trial. *PLoS One.* 2017;12(8):e0182157.	E10
Suarez Cadenas M, Garcia Brinon MA, Martin-Sanchez FJ. Nurse intervention in the discharge from the emergency department of the frail older patient. *Enfermeria Clinica.* 2019;29(1):60-61.	E7
Tang R, Gizzi M, Jacobs S, et al. Implementation of a novel emergency department discharge center. *Academic Emergency Medicine.* 2021;28(SUPPL 1):S222.	E7

Vaiva G, Vaiva G, Ducrocq F, et al. Effect of telephone contact on further suicide attempts in patients discharged from an emergency department: randomised controlled study. BMJ (Clinical research ed). 2006;332(7552):1241-1245.	E10
Walsh K. Emergency Department Case Management: the compendium of best practices [Internet] Danvers (MA): HCPro; 2014 [cited 2018 Aug 21]. In:2014.	E7

APPENDIX D: EVIDENCE TABLES

CHARACTERISTICS OF INCLUDED SYSTEMATIC REVIEW

Author Year N Studies	Search Details	Eligibility Criteria	Populations Included	Interventions Included	Outcomes Assessed
Aghajafari 2020[1] 35 studies	MEDLINE, EMBASE, CINAHL and Cochrane Central Register of Controlled Trials from inception to October 2018.	RCTs of ED-based care transition interventions promoting care transitions to outpatient settings.	Adults discharged from the ED	Care transition interventions focused on promoting care transition from ED to outpatient settings	Outpatient follow up, ED revisit, hospital admission, patient satisfaction

OUTCOME DATA OF INCLUDED SYSTEMATIC REVIEW

Author Year	Subgroup	Primary Study Design(s)	Synthesis Method	Findings
Aghajafari 2020[1]	NA	RCT	Meta-analysis	**Outpatient Follow up:** 20 studies (8187 patients) OR: 1.79 (95% CI 1.43 to 2.24) *Low SOE* **ED Revisit:** 20 studies (8048 patients) OR 1.01 (95% CI 0.86 to 1.20) **Hospital Admission:** 13 studies (5742 patients) OR 0.99 (95% CI 0.86 to 1.14) **Patient Satisfaction**: 3 (of 5) studies found positive impact of care transition interventions on patient satisfaction while 2 studies found no significant differences between intervention and comparator groups.

Abbreviations. ED=Emergency Department, RCT=Randomized control trial, SOE=Strength of Evidence

OUTCOME DATA OF INCLUDED INTERVENTION OUTCOME STUDIES

Author **Year** **N** **Country** **Study Design**	**Intervention**	**Patient Outcomes:** Mortality Patient Satisfaction	**Intermediate Outcomes:** Follow up by primary care, over/inappropriate prescribing, duplicate tests or imaging, *etc*	**Utilization:** ED utilization (up to 1 year), inpatient admission (direct or via ED) within 30 days of last ED visit, ambulatory care sensitive hospitalizations within 30 days
Veterans				
Ayele 2021[2] N=668 US Other Observational	Community hospital transitions program, Intensive case management	NR	Primary care follow up +	30-day ED utilization = 30-day inpatient admission =
Dixon 2021[3] N=393 US Prospective observational	HIE vs usual care	NR	7-day phone contact with primary care + 30-day primary care visit +	30-day inpatient admission = 30-day ED utilization =
Hastings 2020[4] N=513 US Trial	Telephone follow up vs usual care	NR	Primary care follow up +	180- and 30- day ED utilization =
Lovelace 2016[5] N=200 US Other observational	Intensive case management	NR	NR	90-day ED utilization + 90-day hospitalization +
Rinne 2019[22] N=25 US Qualitative	COPD care	NR	Duplicate tests-	NR
Sherman 2021[6] N=111 US Other observational	HIE vs usual care	NR	Primary care follow up +	NR

Author **Year** **N** **Country** **Study Design**	**Intervention**	**Patient Outcomes:** Mortality Patient Satisfaction	**Intermediate Outcomes:** Follow up by primary care, over/inappropriate prescribing, duplicate tests or imaging, *etc*	**Utilization:** ED utilization (up to 1 year), inpatient admission (direct or via ED) within 30 days of last ED visit, ambulatory care sensitive hospitalizations within 30 days
High Utilizers				
Bodenmann 2016[7] N=250 Europe Trial	Intensive case management vs usual care	NR	NR	1-year ED utilization =
Nossel 2016[8] N=75 US Prospective observational	Peer transition specialist support vs usual care	NR	Outpatient follow up	1-year ED utilization +
Older adults				
Biese 2018[9] N=2,000 US Trial	Telephone follow up	30-day mortality =	NR	30-day ED utilization = 30-day inpatient admission =
Hwang 2018[10] N=57,287 US Prospective observational	Transitional care nurse vs usual care	NR	NR	Day 0 inpatient admission + (all 3 sites) 30-day inpatient admission + (site 1,2) ED revisit - (site 3) = (site 1,2)
Jacobsohn 2021[11] N=1,756 US Trial	Home visits and care coaching vs usual care	NR	Primary care follow up +	30-day ED utilization =
Pedersen 2016[12] N=1,330 Europe Trial	Home visits vs usual care	30-day mortality =	NR	30-day ED utilization + 30-day hospitalization +

Author **Year** **N** **Country** **Study Design**	**Intervention**	**Patient Outcomes:** Mortality Patient Satisfaction	**Intermediate Outcomes:** Follow up by primary care, over/inappropriate prescribing, duplicate tests or imaging, *etc*	**Utilization:** ED utilization (up to 1 year), inpatient admission (direct or via ED) within 30 days of last ED visit, ambulatory care sensitive hospitalizations within 30 days
Schumacher 2021[13] N=1,101 US Trial	Care transition coaches with home visit and telephone follow up vs usual care	NR	NR	ED utilization = Inpatient admission = (overall), + (among those with ED revisit)
Mental Health/Substance Use/Homeless				
McCormack 2013[20] N=60 US Other observational	Case management vs usual care	NR	Shelter provided and accepted	6-month ED utilization + Inpatient days +
General/other				
Bauer 2021[14] N=278 US Qualitative	Automated self-scheduling system vs usual care	NR	Primary care follow up +	120-day ED utilization =
Bell 2021[15] N=192 Europe Other observational	Rapid remote follow-up service	NR	NR	ED utilization +
Foster 2018[16] N=2,064 US Other observational	Care coordination and scheduling assistance vs usual care	NR	Primary care follow up +	NR
Galarraga 2021[17] N=25 US Qualitative	Policy incentive	NR	Primary care follow up +	Inpatient admission +

Author **Year** **N** **Country** **Study Design**	**Intervention**	**Patient Outcomes:** Mortality Patient Satisfaction	**Intermediate Outcomes:** Follow up by primary care, over/inappropriate prescribing, duplicate tests or imaging, *etc*	**Utilization:** ED utilization (up to 1 year), inpatient admission (direct or via ED) within 30 days of last ED visit, ambulatory care sensitive hospitalizations within 30 days
Losonczy 2017[18] N=47 US Prospective observational	Screening, resource referral, telephone follow up vs usual care	NR	Have primary care "home" + Appointment with primary care =	ED utilization =
Luciani-McGillivray 2020[19] N=1,259 US Prospective observational	Telephone follow up	NR	Primary care follow up +	7-day ED utilization +
Nanavati 2020[21] N=191 US Other observational	PCP consultation and follow up vs usual care	NR	NR	Inpatient admission +
Shuen 2018[23] N=251 US Trial	Telephone or text follow up vs usual care	Patient Satisfaction =	Primary care follow up =	ED Utilization
Soto 2018[24] N=3,969 US Prospective observational	Early discharge with specialist follow up	NR	NR	All-cause ED revisit + Cardiac-related ED revisit +
Tessitore 2021[25] N=500 US Other Observational	Scheduling PCP follow up before ED discharge	NR	Primary care follow up +	ED utilization +

Notes: "+" represents studies reporting an intervention improved outcomes compared to a comparator, "=" represents studies reporting no difference in outcomes with intervention compared to a comparator, and "-" represents studies reporting an intervention worsened outcomes compared to a comparator
Abbreviations. COPD=Chronic obstructive pulmonary disease, ED=Emergency Department, HIE=Health Information Exchange, NR=Not reported, PCP=primary care physician

BARRIERS AND FACILITATORS DATA

Author Year N Country Study Design	Intervention Characteristics	Implementation Process	Inner Setting (ED)	Inner Setting (Outpatient)	Outer Setting	Characteristics of Individuals (Patients)	Characteristics of Individuals (Providers/ Staff)
Veterans							
Ayele 2020[26] N=70 US Qualitative	Unable to identify patients as Veterans and notify VA primary care of discharge; Unable to transfer non-VA hospital medical records to VA primary care; Unable to to write VA formulary medications for Veterans to fill at VA pharmacies. No process in place for non-VA clinicians to confirm whether the follow-up care was received due to lack of bilateral communication. Facilitators: Increased urgent care appts for Veterans; programs where nurses handle follow-up visits, VA Call Center Nurses occasionally called Veterans upon discharge to schedule a follow-up appointment and facilitated timely care. Participants from a VA CBOC discussed being part of a Community	NR	NR	Difficult to obtain follow-up care appointments with VA primary care; Patients have had to check into the VA ED to have medications "re"-prescribed so they can be filled by VA.	NR	NA	VA providers feel uninformed and feel they need to rely on patients for information.

Author Year N Country Study Design	Intervention Characteristics	Implementation Process	Inner Setting (ED)	Inner Setting (Outpatient)	Outer Setting	Characteristics of Individuals (Patients)	Characteristics of Individuals (Providers/ Staff)
	Transitions Consortium aimed at identifying high-utilizing patients (Veteran and non-Veteran) and improving communication across systems. The consortium members discussed each facility's transition-of-care process, described having access to local non-VA hospital medical records and a backline phone number at the non-VA hospitals to coordinate transitional care. This allowed the VA clinicians to learn about non-VA hospital processes and Veteran needs.						
Dixon 2017[27] N=57,072 US Other observational	NR	NR	NR	NR	Living in isolated small rural (OR 0.53; 95% CI, 0.43- 0.66), large rural (OR0.75; 95% CI, 0.69-0.82), or small rural city (OR 0.60; 95% CI, 0.52-0.69) vs urban was associated with lower odds of authorization.	Lower odds of authorization were seen in those not married (OR 0.90; 95% CI, 0.85-0.95) or with unknown marital status (OR 0.42; 95% CI, 0.30-0.60) compared to married individuals; female vs male (OR 1.12; 95% CI, 1.01-1.25); age 50–64 years vs 65	NR

Author Year N Country Study Design	Intervention Characteristics	Implementation Process	Inner Setting (ED)	Inner Setting (Outpatient)	Outer Setting	Characteristics of Individuals (Patients)	Characteristics of Individuals (Providers/ Staff)
						years (OR 1.10; 95% CI, 1.03-1.18); Charlson comorbidity index 1 vs 0 (OR 1.25; 95% CI, 1.16-1.34) or 2 vs 0 (OR 1.29; 95% CI, 1.19-1.39); military co-insurance vs VA insurance alone (OR 1.17; 95% CI, 1.01-1.37); and catastrophically disabled vs no service-connected disability (OR 1.12; 95% CI, 1.02-1.23) or moderate disability vs no service-connected disability (OR 1.26; 95% CI, 1.16-1.37).	
Dixon 2021[28] N=12 US Qualitative	NR	VA leaders sensitive to burden on staff by the recruiting and consenting process. Impact upon workflow as potentially disruptive to normal clinical activities and described clinical personnel as already facing many demands on their time. HIE	NR	Some providers were reluctant to participate in the training and to use the product. Operations leaders described some pessimistic responses of clinical staff to the product	NR	NR	NR

Author Year N Country Study Design	Intervention Characteristics	Implementation Process	Inner Setting (ED)	Inner Setting (Outpatient)	Outer Setting	Characteristics of Individuals (Patients)	Characteristics of Individuals (Providers/ Staff)
		leaders described the opt-in process as a barrier to greater enrollment. Veterans were required to expressly ask to join (opt in) the VA-HIE project and agree to the release of their medical records. Opt-in approach was restrictive but that it would take an act of Congress (literally) to change		launch. These leaders speculated that pessimism resulted from disappointing past experiences with other initiatives.			
Franzosa 2021[29] N=23 US Qualitative	More information on non-VA visits needed. Discharge info would be helpful. Unclear what the action is at times. (Nurse) records from ED take too long, sometimes unnecessary tests are re-run/performed.	Needing to log into HIE is a barrier. Too much time is spent discussing. Alerts are challenging to sort out. MAs need to get codes from physicians or RNs to follow up with patients. Process needs improving. Unclear what's been addressed and not. Scheduling capacity concerns. Facilitators: sharing alerts with team members for improved workflow	NR	NR	NR	NR	NR

Author Year N Country Study Design	Intervention Characteristics	Implementation Process	Inner Setting (ED)	Inner Setting (Outpatient)	Outer Setting	Characteristics of Individuals (Patients)	Characteristics of Individuals (Providers/ Staff)
Martin 2021[30] N=2 US Qualitative	Difficulty identifying Veterans other than reviewing VA eHealth Exchange query audit logs	Staff perceived the mandates to coordinate care by VA leadership to be discordant with the priorities of their patients. As a result of this perceived misalignment, staff members sometimes struggled to define care coordination and to articulate where care coordination fits within the larger set of VA priorities. Although staff members understood that the impetus for care coordination originated from a centrally initiated strategy, they were less clear about how to implement care coordination day to day. Staff's lack of clarity also extended to how care coordination should be prioritized vis-à-vis overall care delivery goals. Staff expressed frustration at misaligned goals, with	NR	NR	NR	NR	NR

Author Year N Country Study Design	Intervention Characteristics	Implementation Process	Inner Setting (ED)	Inner Setting (Outpatient)	Outer Setting	Characteristics of Individuals (Patients)	Characteristics of Individuals (Providers/ Staff)
		staff prioritizing some aspects of care delivery while leadership was perceived to prioritize others. One nurse explained the misalignment in goals at different levels within the VA and the lack of appropriate metrics. Resource gaps were described as having implications for how care coordination activities were prioritized and delivered. Not having fully staffed PACTs consistently resulted in staff having to cross-cover to other PACTs in their facilities. For some, cross-coverage resulted in long assignments spanning several months to years while awaiting new hires. Having to balance the workload of two or more PACTs over an extended period led staff to report burnout					

Author Year N Country Study Design	Intervention Characteristics	Implementation Process	Inner Setting (ED)	Inner Setting (Outpatient)	Outer Setting	Characteristics of Individuals (Patients)	Characteristics of Individuals (Providers/ Staff)
		and low morale. They called for performance metrics that are more fully aligned with clinic and national priorities around shared goals to help to focus clinic activities on the priorities national leadership seeks to improve.					
Olmos-Ochoa 2019[31] N=18 US Qualitative	Finding VA formulary medications equivalent to those prescribed by community providers.	NR	Care coordination challenges arose in contacting community entities in a timely manner, gaining access to patient data needed to make clinical decisions on patients' behalf (*eg*, results of tests performed at a community site).	Finding VA formulary medications equivalent to those prescribed by community providers.	NR	NR	NR
Pearson 2016[32] N=6 US	NR	Different stakeholder expectations about data security. Difficulty navigating the layers within the	NR	NR	NR	NR	NR

Author Year N Country Study Design	Intervention Characteristics	Implementation Process	Inner Setting (ED)	Inner Setting (Outpatient)	Outer Setting	Characteristics of Individuals (Patients)	Characteristics of Individuals (Providers/ Staff)
Qualitative		VA—national, regional, and state. Multiple approvals required. Facilitators: The buy-in for the HIE from stakeholders. "Our interviews identified collaboration and communication as essential factors that helped the project stay on track and move forward." Strong and influential champions in all 3 of the partnering organizations.					
Rinne 2019[22] N=25 US Qualitative	NR	A lack of EHR interoperability results in transmission of unstructured data, such as letters and faxes that are subsequently scanned as PDF documents, posing barriers to providers in their ability to rapidly find, access, and search for pertinent clinical information.	NR	NR	NR	NR	Respondents in our study perceived communication challenges with community providers, and frequently described this communication as "difficult," "insufficient," and "delayed."

Author Year N Country Study Design	Intervention Characteristics	Implementation Process	Inner Setting (ED)	Inner Setting (Outpatient)	Outer Setting	Characteristics of Individuals (Patients)	Characteristics of Individuals (Providers/ Staff)
		Facilitator: In our study, establishing or capitalizing on relationships with community providers was described as the best way to facilitate communication: "Unless the providers have a personal relationship, we never hear from the outside hospitals." Community providers who trained at a VA site were more likely to contact VA providers, as according to one provider, they have "preexisting knowledge and they're able to kind of break into the VA and find me." These pre-existing relationships opened lines of communication that would have otherwise stayed closed.					
High-ED Utilizers							
Chang 2018[35] N=25	Patient Perspective: No unified EHR is barrier	NR	NR	NR	Facilitator: Social support w/help	Facilitator: Need to be your own advocate because	NR

Author Year N Country Study Design	Intervention Characteristics	Implementation Process	Inner Setting (ED)	Inner Setting (Outpatient)	Outer Setting	Characteristics of Individuals (Patients)	Characteristics of Individuals (Providers/ Staff)
US Qualitative	Facilitator: Pts attribute coordination to EHRs, online patient portals.				coordinating care.	you don't have much time w/ multiple doctors and it's overwhelming.	
Kahan 2016[41] N=47 Canada Qualitative	Poor identification and referral processes Facilitators: ED presence of case managers	Facilitators: Partnership with local health authority Agency commitment Training and technical assistance	NR	Decentralized structure, Long wait times for other services, Incomplete understanding of drivers of ED use	NR	NR	NR
Older Adults							
Coe 2018[36] N=14 US Qualitative	Facilitator: Explicitly told (or remembers being told) to follow up	Patients stated that they were not given a copy of their ED visit care plan. Some participants were not told to follow up.	NR	NR	NR	Patients don't understand their health or lack a personal health record. Perception of staff/provider incompetency if problems were not resolved.	NR
Gettel 2020[39] N=22 US Qualitative	NR	Discordant recommendations between ED, PCP, specialist	NR	Outpatient settings are complex, time consuming. Long wait times (2 mos) for PCP follow up.	Facilitator: Social support	NR	NR
Mental Health/Substance/Homeless							
High 2020[40] N=54	High cost of medications	Challenges in hiring persons with felonies and delivering health	Barriers related to knowledge, attitudes, and	Barriers related to knowledge, attitudes, and	Challenges in buprenorphine prescribing by	NR	NR

Author Year N Country Study Design	Intervention Characteristics	Implementation Process	Inner Setting (ED)	Inner Setting (Outpatient)	Outer Setting	Characteristics of Individuals (Patients)	Characteristics of Individuals (Providers/ Staff)
US Qualitative		care-required trainings to peer support specialists; time required for relationship building w/ stakeholders for buy in Facilitator: Regular communication between state implementation teams and bridge model teams. Need for implementation specialists to provide ongoing support to local leadership, symposium to discuss program issues/ implementation	system structure/ design must all be minimized for change to be impactful and sustainable.	system structure/ design must all be minimized for change to be impactful and sustainable.	insurance pre-authorization requirements; state regulations; a sizable and unrelenting supply of fentanyl continuing to enter the illicit drug market		
Poremski 2016[43] N=33 Canada Qualitative	NR	Patient has multiple case managers. Coordination is challenging, need to streamline. But care management is not always linked to outcomes. Lack of system-level integration.	NR	NR	NR	Unmotivated due to depression, shame and anger because of relapse. Three months too short for some to develop a trusting relationship. Facilitators: Collaborative empowering relationship	NR

Author Year N Country Study Design	Intervention Characteristics	Implementation Process	Inner Setting (ED)	Inner Setting (Outpatient)	Outer Setting	Characteristics of Individuals (Patients)	Characteristics of Individuals (Providers/ Staff)
						between staff/pts. Good therapeutic relationship.	
Walker 2021[49] N=45 US Qualitative	NR	NR	NR	NR	Lack of social support, child care, logistics, transportation	Not ready to engage in treatment; severity of symptoms or lack of time due to other appt for physical symptoms	NR
General/Other							
Altman 2012[33] N=14 US Qualitative	Too little information provided. Need more information (*eg*, discharge summary or diagnosis); notifications should be more timely	No time in workflow to react to the information. Not yet beneficial due to workflow issues. May be better if routed to a nurse or care manager than a physician.	NR	NR	NR	NR	Outpatient providers perceived a shift from the ED's responsibility to contact outpatient clinic to the outpatient clinic's responsibility to contact the ED.
Atzema 2018[3] N=41485 Canada Other observational	NR	NR		Smaller hospital; Family physicians paid by capitation, simple FFS Facilitators: Larger Community Hospitals; FPs	Rural setting, low SES	Facilitators: older age, higher SES	Facilitators: Patients who saw ED specialist w/5+ years training, Family physicians w/>15 practice

Author Year N Country Study Design	Intervention Characteristics	Implementation Process	Inner Setting (ED)	Inner Setting (Outpatient)	Outer Setting	Characteristics of Individuals (Patients)	Characteristics of Individuals (Providers/ Staff)
				paid by enhanced FFS			
Cornell 2020[37] N=84,929 US Other observational	NR	NR	NR	NR	Facilitator: continuous coverage, PPO	Facilitators: hx of filling anti-hypertensive meds within day of index event, filling in last year, full-time employment	NR
Flink 2012[38] N=23 Europe Qualitative	Patients perceived that no information was exchanged between ED and PCP. Felt they had to contact their PCP most of the time.	NR	NR	Wait time for follow up too long.	NR	Distrust = limited shared info Facilitators: Provider trust. Positive past health care experiences guided more active participation in continuity of care transition. Trust in the organization.	NR
Foster 2018[16] N2,064 US Other observational	NR	NR	Scheduling	Financial Transportation Language	NR	NR	NR
Galarraga 2021[17] N=25 US Qualitative	NR	NR	Insufficient financial and hospital management support	Insufficient financial and hospital management support, insufficient	Social determinants (housing, income, citizenship), insurance	NR	NR

Author Year N Country Study Design	Intervention Characteristics	Implementation Process	Inner Setting (ED)	Inner Setting (Outpatient)	Outer Setting	Characteristics of Individuals (Patients)	Characteristics of Individuals (Providers/ Staff)
				outpatient resources, communication lapses between different clinical and community teams	barriers, patient transportation		
Lockman 2018[42] N=34 Europe Qualitative	NR	Unclear or unorganized information provided. Too much communication that takes up too much time - multiple versions of discharge information for same patient sent, or same version sent multiple ways.	NR	NR	NR	NR	NR
Richards 2007[44] N=238 Canada Other observational	NR	NR	NR	No after-hours appointments	Transportation difficulties getting to the exercise stress test lab or FP office	Didn't feel they had a heart problem family or other time barriers, and forgetfulness.	NR
Rider 2018[45] N=101 US Qualitative	NR	High patient volume, time constraints re: coordinating time to call and communication during non-business hours. EMR barriers to effective transitions	NR	NR	NR	NR	Differences in the communication preferences between EP's and PCP's use of EHRs (*eg*, how, about

Author Year N Country Study Design	Intervention Characteristics	Implementation Process	Inner Setting (ED)	Inner Setting (Outpatient)	Outer Setting	Characteristics of Individuals (Patients)	Characteristics of Individuals (Providers/ Staff)
		were also noted, including lack of EMR access or shared EMR, uncertain receipt of information, and limited EMR literacy. Other logistical barriers to communication included inability to identify the PCP, difficulty getting in touch with the appropriate provider, and lack of resources. These are systems issues that could be addressed with increased emphasis on the ED-to-outpatient communication.					what, who has access to what info). Also differences in what they felt were the significant barriers (*eg*, setting/ environment, poor documentation, patient constraints, communication logistics, EHR barriers).
Rising 2015[46] N=60 US Qualitative	NR	NR	NR	Patient perceptions: believed their extensive outpatient physician network caused problems because of difficulties coordinating care and constant referrals.	NR	The most common challenge identified was with general mobility, including problems moving around the house because of current illness. When asked why they returned to the ED rather than following up as an outpatient, patients	NR

Author Year N Country Study Design	Intervention Characteristics	Implementation Process	Inner Setting (ED)	Inner Setting (Outpatient)	Outer Setting	Characteristics of Individuals (Patients)	Characteristics of Individuals (Providers/ Staff)
				Patients frequently reported problems with receiving needed outpatient care, including difficulties contacting providers, inability to make appointments when needed, and waiting too long at their actual appointments.		reported that they feared their symptoms were too severe to wait until their scheduled appointment, or that they were instructed to return by a provider. Other prominent themes related to the limited use of outpatient care included problems accessing care, dissatisfaction with a primary care physician, and lack of trust in their primary physician.	
Schenhals 2019[47] N=20 US Qualitative	Facilitators: written discharge instructions, being contacted by their PCP following their visit	NR	NR	Difficulty scheduling follow up appts/ long wait times - especially to see specialist	Having a friend or family member present during the ED visit	Not clear about diagnosis. Hopelessness re: getting better – a cycle of ED to PCP, repeat. Facilitators: personal experience in the health care field	Facilitators: Patient perception of good communication by ED provider/staff
Vieth 2008[48] N=1,056	NR	NR	NR	No answer, too long on hold,	NR	NR	NR

Author Year N Country Study Design	Intervention Characteristics	Implementation Process	Inner Setting (ED)	Inner Setting (Outpatient)	Outer Setting	Characteristics of Individuals (Patients)	Characteristics of Individuals (Providers/ Staff)
				wrong number, doesn't handle condition, not accepting new patients, no late hours. Difficulty navigating systems in general			
Wexler 2015[50] N=52 US Qualitative	NR	NR	NR	NR	No after-hours care. lack of transportation and a need for childcare	NR	NR

Abbreviations. CBOC= Community-based outpatient clinic, ED= Emergency department, EHR= Electronic health record, FFS=Fee for service, FP= Family physician, HIE= Health information exchange, Mos= Months, NR= Not reported, PCP=Primary care provider, PPO= Preferred provider organization, SES= Socioeconomic status, VA= Veteran Affairs

QUALITY CHARACTERISTICS OF INCLUDED PRIMARY STUDIES

Author Year	Study Design	Sample Size	Single or Multi-Site	Adjustment for Confounders
Altman 2012[33]	Qualitative	14	NA	NA
Atzema 2018[34]	Other observational	41,485	NA	NA
Ayele 2021[2]	Other observational	668	Multi-site	Trial/Adjusted
Ayele 2020[26]	Qualitative	70		
Bauer 2021[14]	Trial	278	Single	Trial/Adjusted
Bell 2021[15]	Other observational	192	Single	Unadjusted
Biese 2018[9]	Trial	2000	Single	Trial/adjusted
Bodenmann 2016[7]	Trial	250	Single	Trial/Adjusted
Chang 2018[35]	Qualitative	25	NA	NA
Coe 2018[36]	Qualitative	14	NA	NA
Cornell 2020[37]	Other observational	84,929	NA	NA
Dixon 2021 (impact)[3]	Prospective observational	393	Multi-site	Trial/Adjusted
Dixon 2021 (leadership)[28]	Qualitative	12	NA	NA
Dixon 2017[27]	Other observational	57,072	NA	NA
Flink 2012[38]	Qualitative	NA	NA	NA
Foster 2018[16]	Other observational	2064	Single	Unadjusted
Franzosa 2021[29]	Qualitative	23	NA	NA
Galarraga 2021[17]	Qualitative	25	Multi-site	Unadjusted
Gettel 2020[39]	Qualitative	22	NA	NA
Hastings 2020[4]	Trial	513	Single	Trial/Adjusted
High 2020[40]	Qualitative	54	Multi-site	Unadjusted
High 2020	Qualitative	54	Multi-site	Unadjusted
Hwang 2018[10]	Prospective observational	57,287	Multi-site	Trial/Adjusted
Jacobsohn 2021[11]	Trial	1756	Multi-site	Trial/Adjusted
Kahan 2016[41]	Qualitative	47	Multi-site	Trial/Adjusted
Lockman 2018[42]	Qualitative	34	NA	NA
Losonczy 2017[18]	Prospective observational	459	Single	Unadjusted

Author Year	Study Design	Sample Size	Single or Multi-Site	Adjustment for Confounders
Lovelace 2016[5]	Other observational	200	Single	Unadjusted
Luciani-McGilivray 2020[19]	Prospective observational	1259	Single	Unadjusted
Martin 2021[30]	Qualitative	2	NA	NA
McCormack 2013[20]	Other observational	60	Single	Unadjusted
Nanavati 2020[21]	Other observational	191	Single	Unadjusted
Nossel 2016[8]	Prospective observational	75	Single	Unadjusted
Olmos-Ochoa 2019[31]	Qualitative	18	NA	NA
Pearson 2016[32]	Qualitative	6	NA	NA
Pedersen 2016[12]	Trial	1330	Single	Trial/Adjusted
Poremski 2016[43]	Qualitative	33	NA	NA
Richards 2007[44]	Other observational	238	NA	NA
Rider 2018[45]	Qualitative	1010	NA	NA
Rinne 2019[22]	Qualitative	25	NA	NA
Rising 2015[46]	Qualitative	60	NA	NA
Schenhals 2019[47]	Qualitative	20	NA	NA
Schumacher 2021[13]	Trial	1101	Multi-site	Trial/Adjusted
Sherman 2021[6]	Other observational	111	Single	Unadjusted
Shuen 2018[23]	Trial	251	Single	Trial/Adjusted
Soto 2018[24]	Prospective observational	3,969	Single	Unadjusted
Tessitore 2021[25]	Other observational	500	Multi-site	Trial/Adjusted
Vieth 2008[48]	Other observational	1065	NA	NA
Walker 2021[49]	Qualitative	45	NA	NA
Wexler 2015[50]	Qualitative	52	NA	NA

APPENDIX E: RESEARCH IN PROGRESS

Status	Study Title	Study Design	Intervention	Information Resources
Completed: October 21, 2016 No publication	Trial of Emergency Department Discharge With Enhanced Transitions of Care Compared to Usual Care (ETOC)	Randomized, parallel assignment	Services provided to assist patients in accessing needed healthcare services after emergency department discharge such as scheduling appointments, finding new doctors, getting medications, or addressing problems with insurance coverage.	NCT02533856
Recruiting	Suicide Prevention Among Recipients of Care (SPARC)	Randomized, parallel assignment	SPI+: Safety Planning Intervention plus structured phone-based follow up Caring Contacts: Safety Planning Intervention plus Caring Contacts (SP+CC)	NCT04893447
Recruiting	The LEARNING WISDOM Phase II Scale up Project	Randomized, parallel assignment	Behavioral: GEM nurse Behavioral: pre- and post-hospitalization medication list reconciliation Behavioral: systematic discharge summaries Behavioral: medical follow-up appointment Behavioral: follow-up phone call Other: Wiki-based Knowledge tools Other: Telemonitoring service	NCT04093245
Completed No publication	Paramedic Coached ED Care Transitions to Help Older Adults Maintain Their Health	RCT	Paramedic-delivered ED-to-home Care Transitions Intervention in older adults	NCT02520661

.

APPENDIX F: PEER REVIEW DISPOSITION

Comment #	Reviewer #	Comment	Author Response
Are the objectives, scope, and methods for this review clearly described?			
1	1	Yes	None
2	2	Yes	None
3	3	Yes	None
4	4	Yes	None
5	5	Yes	None
Is there any indication of bias in our synthesis of the evidence?			
6	1	No	None
7	2	No	None
8	3	No	None
9	4	No	None
10	5	No	None
Are there any published or unpublished studies that we may have overlooked?			
11	1	No	None
12	2	Yes - Perhaps this one: Mi R, Hollander MM, Jones C, DuGoff EH, Caprio TV, Cushman JT, Kind AJ, Lohmeier M, Shah MN. A randomized controlled trial testing the effectiveness of a paramedic-delivered care transitions intervention to reduce emergency department revisits. BMC geriatrics. 2018 Dec;18(1):1-9.	Thank you. This study is a protocol for a R01. According to ClinicalTrials.gov the study is complete. There are a number of study related publications listed on NIH RePORTER. However, the published preliminary findings focus on feasibility and intervention acceptability, and others did not focus on the intervention. Since we anticipate they plan to publish the findings of their primary outcomes of interest, we added the suggested protocol to our table of studies in progress.
13	3	No	None
14	4	No	None
15	5	No	None
Additional suggestions or comments can be provided below. If applicable, please indicate the page and line numbers from the draft report.			
16	1	PICOTS on page 9 clear.	Thank you.

17	1	Authors may need to review Outcomes for wording " Intermediate outcomes: Over or inappropriate prescribing, duplicate tests or imaging, follow-up by primary care (# days), (?)purpose tests or images ordered in ED are clear." In future, I would consider reporting also on HEDIS or VA eTM measures into intermediate outcomes. For instance, instead of just follow up by primary care, would include Follow-Up After Emergency Department Visit for Mental Illness and Follow-Up After Emergency Department Visit for Alcohol and Other Drug Abuse or Dependence by member of SUD or MH. I'm guessing that these are not commonly reported though.	Thank you. We have corrected it to “purpose of tests or images ordered in the ED are clear.” We agree these are measures worth exploring, and we agree that follow-up for patients with mental health or substance use disorders are an important outcome. Due to the rapid nature of this review, our scope needed to be narrow and the committee prioritized primary care follow up. However, we did identify barriers and facilitators related to a handful of interventions for this population.
18	1	Also, I know that the page size poses a limitation for the supp material. However, I think it might be useful to add a column or some indication in the existing columns for whether or not there was an HIE, where the ED encounter took place (always non-VA?) and where the outpatient setting took place (VA and non-VA).	Thank you. Since this report focused on EDs in the community, we did not include any studies of VA EDs. We have edited our inclusion criteria (PICOTSS) for clarity. The supplement tables indicate Veterans as the population for all studies that applied to VHA settings. We have re-organized the supplemental tables so that they are grouped by population. Similarly, to more easily identify HIE and other interventions, we have consolidated tables so interventions are noted alongside effect.
19	1	I'm guessing that this ESP was performed in response to the high number of ER visits in the community. I wonder what authors think about potential solutions to address care coordination issues based on the evidence review given policy and program implications.	This evidence map was performed to inform a January 2022 State-of-the-Art (SOTA) conference on emergency medicine. One of the main goals of the SOTA is to identify research priorities for VHA, and thus the purpose of this evidence map was to illustrate the characteristics of the body of literature, but not to provide conclusions or recommendations based on the evidence. Further work in this area may arise based on the SOTA conference, including the potential for a systematic review on specific questions in this area of research, which may be able to address potential solutions to the care coordination issues identified in this report.
20	2	Some minor edits suggested in my uploaded draft (below)	Thank you. Please see below.
21	2	Pg. 8, Line 3-4:	Edited

		they are likely recovering from injuries or acute illness.....	
22	2	Pg. 8, line 30: More effective	Edited
23	2	Pg. 8, line 31: Between VA and	Edited to “between VHA and…”
24	2	Pg. 10, line 24 – 25: Recovering from injuries and acute illness	Edited
25	2	Pg. 10, line 28: Re-visits	Edited
26	2	Pg. 11, line 16 – 17: Not sure what this means	Thank you. We have edited this for clarity.
27	2	Pg. 20, line 11: more effective	Edited
28	2	Pg. 20, line 43 – 46: Did we decide not to include observational studies?	This statement refers to the included systematic review. This evidence map does include observational studies.
29	3	I thought that the report was concise and straightforward. If anything could be improved, perhaps some clarifying definitions could be given for the bullet points in Figure 1 (e.g., cosmopolitanism, trialability). There was not much substance in the text, while the figures contained more information. I wonder if additional discussion could be brought to the text.	Thank you. We have updated the report to include a list of definitions (Appendix B). With regard to your comment about there being more detail in figures than in the body of the text, the format of this report is an evidence map. As such, the intention of the text is to briefly summarize and/or provide information useful to interpreting the figures.
30	4	This is a complex topic and it was unclear, to me at least, about the focus of this review. It seems to be related to factors that influence outcomes in the ED to outpatient transition. Part of the difficulty is that there is a dearth of published information out there, as was made clear in this review. But perhaps a narrower focus on an analysis of	The key questions and outcomes of interest were developed by the 2022 SOTA conference on emergency medicine community care committee. Due to the broad and complex nature of the topic, the purpose of this evidence map was to illustrate where existing research does and does not exist and to

		post-ED discharge outcomes and a correlation to post-ED discharge follow-up care might be more gainful.	provide a high level summary of the existing literature.
31	5	Title-Include “Implementation”?	We have updated to the title to: Implementation Factors Influencing the Transition from Emergency to Outpatient Care Settings.
32	5	Executive Summary Should frame this earlier on that these are implementation factors (title) and also the mention of the use of CFIR. Otherwise, someone unfamiliar with CFIR will have no idea what inner/outer setting etc is. Include mention of CFIR in the Background/Methods as well. Otherwise CFIR is not mentioned until page 12.	Thank you. We have added a statement about organization according to CFIR to the executive summary methods and have also added the figure that illustrates CFIR constructs.
33	5	Reporting of CFIR elements-perhaps keep consistent with the order discussed on page 12? Intervention characteristics, outer setting, inner setting, characteristics of individuals, and process factors	We have edited the report for consistency.
34	5	Also, I would use the same terminology in the summary as used later. In the summary you use “implementation processes” vs. “Process factors”	We have edited the report for consistency.
35	5	Figure ES1-is it fair to represent qualitative studies using the same sample size representation as quantitative studies? Virtually all qualitative studies will be the smallest size bubble. However, I would view a qualitative study with 10 participants very different from one in which there were 50-75 interviews.	One key purpose for visualizing data is ease of interpretability. Aligning bubble sizes to different scales based on study design would add a degree of complexity that would hinder interpretation. We knew that the qualitative studies would be interpreted differently, not only within the context of sample size, but also in terms of outcomes effectiveness. Study-level data are provided in the appendices.
36	5	One other issue re. qualitative studies. None of these are mixed methods? Seems like a lot of qualitative studies to have no mixed methods. Plus, looking at the references, at least 4 papers identify themselves as “Mixed Methods” so are these categorized under qualitative or quantitative?	You are correct that some of the included studies were mixed-methods studies. We classified mixed-methods studies based on the component(s) that met inclusion criteria. For example, we categorized Schumacher et al., 2021 “Impact of an emergency department-to-home transitional care intervention on health service use in Medicare beneficiaries: A mixed methods study“ which included both an RCT and interviews, as a trial because the qualitative component did not meet inclusion criteria.

37	5	Report Eligibility criteria Overall-why not use the accepted “PICOT” abbreviation here?	You are correct that use of PICOT(SS) is well known and widely used in research settings and evidence-based medicine. However, we avoid jargon when possible in order to allow our reports to be accessible to a wide range of readers.
38	5	Intervention-Why must eligible studies involve “the transition from 1 health system to another”? Can’t they be from a VA ED to the same system’s outpatient setting? This seems like an unnecessary exclusion criteria.	The purpose of this report is to inform the transition from community EDs to VHA outpatient care. One of the major barriers is the lack of a shared EHR and there are other barriers simply due to the interaction of healthcare systems and processes. Excluding transitions within the same system increased the likelihood of identifying relevant studies.
39	5	Population-Why not Veterans discharged from VA settings to VHA outpatient care?	Same as above.
40	5	Data Abstraction Reported Effect p.9 lines 57-8 “whether the reported effect was positive, equal, or negative, and data on barriers and facilitators.” Do you mean beneficial, neutral, and/or detrimental? Not sure what a negative facilitator and/or positive barrier (and vice versa) would mean.	Thank you. We have revised this portion of the sentence to read“…whether the reported intervention effect was positive, equal, or negative, as well as barriers and facilitators to successful ED to outpatient transitions.”
41	5	Figure 5 p.15-the blue for the 2nd blue circle should be more clearly identified (kind of like the orange in Figure 6). Also, this is the first mention of “Community Care” I’d include this earlier and define what this means. Also, the barriers are broken down by setting but then just bulleted for facilitators.	Thank you. We have changed “Community Care” to “Veteran Care in the Community” to avoid confusion. We separated barriers into those that were general or non-setting/population specific and those specific to the VHA and Veterans. No facilitators were Veteran or VHA specific.

REFERENCES

1. Aghajafari F, Sayed S, Emami N, Lang E, Abraham J. Optimizing emergency department care transitions to outpatient settings: A systematic review and meta-analysis. *American Journal of Emergency Medicine.* 2020;38(12):2667-2680.
2. Ayele RA, Liu W, Rohs C, et al. VA Care Coordination Program Increased Primary Care Visits and Improved Transitional Care for Veterans Post Non-VA Hospital Discharge. *American Journal of Medical Quality.* 2021;36(4):221-228.
3. Dixon BE, Judon KM, Schwartzkopf AL, et al. Impact of event notification services on timely follow-up and rehospitalization among primary care patients at two Veterans Affairs Medical Centers. *Journal of the American Medical Informatics Association.* 2021.
4. Hastings SN, Stechuchak KM, Coffman CJ, et al. Discharge Information and Support for Patients Discharged from the Emergency Department: Results from a Randomized Controlled Trial. *Journal of General Internal Medicine.* 2020;35(1):79-86.
5. Lovelace D, Hancock D, Hughes SS, Wyche PR, Jenkins C, Logan C. A Patient-Centered Transitional Care Case Management Program: Taking Case Management to the Streets and Beyond. *Professional Case Management.* 2016;21(6):277-290.
6. Sherman RL, Judon KM, Koufacos NS, et al. Utilizing a health information exchange to facilitate COVID-19 VA primary care follow-up for Veterans diagnosed in the community. *JAMIA open.* 2021;4(1):ooab020.
7. Bodenmann P, Velonaki VS, Griffin JL, et al. Case Management may Reduce Emergency Department Frequent use in a Universal Health Coverage System: a Randomized Controlled Trial. *J Gen Intern Med.* 2016;32(5):508-515.
8. Nossel IR, Lee RJ, Isaacs A, Herman DB, Marcus SM, Essock SM. Use of Peer Staff in a Critical Time Intervention for Frequent Users of a Psychiatric Emergency Room. *Psychiatr Serv.* 2016;67(5):479-481.
9. Biese KJ, Busby-Whitehead J, Cai J, et al. Telephone Follow-Up for Older Adults Discharged to Home from the Emergency Department: A Pragmatic Randomized Controlled Trial. *Journal of the American Geriatrics Society.* 2018;66(3):452-458.
10. Hwang U, Dresden SM, Rosenberg MS, et al. Geriatric emergency department innovations: transitional care nurses and hospital use. *Journal of the American Geriatrics Society.* 2018;66(3):459-466.
11. Jacobsohn GC, Jones CMC, Green RK, et al. Effectiveness of a care transitions intervention for older adults discharged home from the emergency department: A randomized controlled trial. *Academic Emergency Medicine.* 2021;26:26.
12. Pedersen LH, Gregersen M, Barat I, Damsgaard EM. Early geriatric follow-up visits to nursing home residents reduce the number of readmissions: a quasi-randomised controlled trial. *Eur Geriatr Med.* 2018;9(3):329-337.
13. Schumacher JR, Lutz BJ, Hall AG, et al. Impact of an Emergency Department-to-Home Transitional Care Intervention on Health Service Use in Medicare Beneficiaries: A Mixed Methods Study. *Medical Care.* 2021;59(1):29-37.
14. Bauer KL, Sogade OO, Gage BF, Ruoff B, Lewis L. Improving Follow-up Attendance for Discharged Emergency Care Patients Using Automated Phone System to Self-schedule: A Randomized Controlled Trial. *Academic Emergency Medicine.* 2021;28(2):197-205.

15. Bell LC, Norris-Grey C, Luintel A, et al. Implementation and evaluation of a COVID-19 rapid follow-up service for patients discharged from the emergency department. *Clinical Medicine.* 2021;21(1):e57-e62.
16. Foster SD, Hart K, Lindsell CJ, Miller CN, Lyons MS. Impact of a low intensity and broadly inclusive ED care coordination intervention on linkage to primary care and ED utilization. *American Journal of Emergency Medicine.* 2018;36(12):2219-2224.
17. Galarraga JE, DeLia D, Wilhite D, et al. Emergency department care coordination strategies and perceived impact under Maryland's hospital payment reforms. *American Journal of Emergency Medicine.* 2021;45:578-589.
18. Losonczy LI, Hsieh D, Wang M, et al. The Highland Health Advocates: a preliminary evaluation of a novel programme addressing the social needs of emergency department patients. *Emerg Med J.* 2017;34(9):599-605.
19. Luciani-McGillivray I, Cushing J, Klug R, Lee H, Cahill JE. Nurse-Led Call Back Program to Improve Patient Follow-Up With Providers After Discharge From the Emergency Department. *Journal of Patient Experience.* 2020;7(6):1349-1356.
20. McCormack RP, Hoffman LF, Wall SP, Goldfrank LR. Resource-limited, collaborative pilot intervention for chronically homeless, alcohol-dependent frequent emergency department users. *American journal of public health.* 2013;103(S2):S221-S224.
21. Nanavati M, Saenz S, Swayne K, Carek P. The Golden Letter: Innovation Collaboration to Reduce Avoidable Hospital Admissions. *Journal of the American Board of Family Medicine: JABFM.* 2020;33(6):1011-1015.
22. Rinne ST, Resnick K, Wiener RS, Simon SR, Elwy AR. VA provider perspectives on coordinating COPD care across health systems. *Journal of general internal medicine.* 2019;34(1):37-42.
23. Shuen JA, Wilson MP, Kreshak A, et al. Telephoned, Texted, or Typed Out: A Randomized Trial of Physician-Patient Communication After Emergency Department Discharge. *Journal of Emergency Medicine.* 2018;55(4):573-581.
24. Soto GE, Huenefeldt EA, Hengst MN, et al. Implementation and impact analysis of a transitional care pathway for patients presenting to the emergency department with cardiac-related complaints. *BMC Health Services Research.* 2018;18(1):672.
25. Tessitore A, Brennan-Cook J. Improving Outpatient Follow-Up Through Innovative Appointment Scheduling at Emergency Department Discharge. *Advanced Emergency Nursing Journal.* 2021;43(1):71-78.
26. Ayele RA, Lawrence E, McCreight M, et al. Perspectives of clinicians, staff, and Veterans in transitioning Veterans from non-VA hospitals to primary care in a single VA Healthcare System. *Journal of hospital medicine.* 2020;15(3):133.
27. Dixon BE, Ofner S, Perkins SM, et al. Which veterans enroll in a VA health information exchange program? *Journal of the American Medical Informatics Association.* 2017;24(1):96-105.
28. Dixon BE, Luckhurst C, Haggstrom DA. Leadership Perspectives on Implementing Health Information Exchange: Qualitative Study in a Tertiary Veterans Affairs Medical Center. *JMIR medical informatics.* 2021;9(2):e19249.
29. Franzosa E, Traylor M, Judon KM, et al. Perceptions of event notification following discharge to improve geriatric care: qualitative interviews of care team members from a 2-site cluster randomized trial. *Journal of the American Medical Informatics Association.* 2021;28(8):1728-1735.

30. Martin TR, Gasoyan H, Pirrotta G, Mathew R. A National Survey Assessing Health Information Exchange: Readiness for Changes to Veterans Affairs Access Standards. *Perspectives in Health Information Management.* 2021;18(3).
31. Olmos-Ochoa TT, Bharath P, Ganz DA, et al. Staff Perspectives on Primary Care Teams as De Facto "Hubs" for Care Coordination in VA: a Qualitative Study. *Journal of General Internal Medicine.* 2019;34(1):82-89.
32. Pearson M, Karen B, Burgess MPPM A, Gale MS JA, Coburn PhD AF, Yousefian Hansen M. Health information exchange: a strategy for improving access for rural veterans in the Maine Flex Rural Veterans Health Access. 2016.
33. Altman R, Shapiro JS, Moore T, Kuperman GJ. Notifications of hospital events to outpatient clinicians using health information exchange: a post-implementation survey. *Informatics in Primary Care.* 2012;20(4):249-255.
34. Atzema CL, Yu B, Ivers NM, et al. Predictors of obtaining follow-up care in the province of Ontario, Canada, following a new diagnosis of atrial fibrillation, heart failure, and hypertension in the emergency department. *CJEM Canadian Journal of Emergency Medical Care.* 2018;20(3):377-391.
35. Chang L, Wanner KJ, Kovalsky D, Smith KL, Rhodes KV. "It's Really Overwhelming": Patient Perspectives on Care Coordination. *Journal of the American Board of Family Medicine: JABFM.* 2018;31(5):682-690.
36. Coe AB, Moczygemba LR, Ogbonna KC, Parsons PL, Slattum PW, Mazmanian PE. Low-Income Senior Housing Residents' Emergency Department Use and Care Transition Problems. *Journal of Pharmacy Practice.* 2018;31(6):610-616.
37. Cornell SD, Valerio MA, Krause T, Cornell J, Revere L, Taylor BS. Low Adherence to Post Emergency Department Follow-Up Among Hypertensive Patients With Medical Insurance. *Journal of Emergency Medicine.* 2020;58(2):348-355.
38. Flink M, Ohlen G, Hansagi H, Barach P, Olsson M. Beliefs and experiences can influence patient participation in handover between primary and secondary care--a qualitative study of patient perspectives. *BMJ Quality & Safety.* 2012;21 Suppl 1:i76-83.
39. Gettel CJ, Hayes K, Shield RR, Guthrie KM, Goldberg EM. Care Transition Decisions After a Fall-related Emergency Department Visit: A Qualitative Study of Patients' and Caregivers' Experiences. *Academic Emergency Medicine.* 2020;27(9):876-886.
40. High PM, Marks K, Robbins V, et al. State targeted response to the opioid Crisis grants (opioid STR) program: Preliminary findings from two case studies and the national cross-site evaluation. *Journal of Substance Abuse Treatment.* 2020;108:48-54.
41. Kahan D, Leszcz M, O'Campo P, et al. Integrating care for frequent users of emergency departments: implementation evaluation of a brief multi-organizational intensive case management intervention. *BMC Health Services Research.* 2016;16:156.
42. Lockman KA, Lee WH, Sinha R, et al. Effective acute care handover to GP: optimising the structure to improve discharge documentation. *Acute Medicine.* 2018;17(2):68-76.
43. Poremski D, Harris DW, Kahan D, et al. Improving continuity of care for frequent users of emergency departments: service user and provider perspectives. *General Hospital Psychiatry.* 2016;40:55-59.
44. Richards D, Meshkat N, Chu J, Eva K, Worster A. Emergency department patient compliance with follow-up for outpatient exercise stress testing: a randomized controlled trial. *Canadian Journal of Emergency Medicine.* 2007;9(6):435-440.

45. Rider AC, Kessler CS, Schwarz WW, et al. Transition of Care from the Emergency Department to the Outpatient Setting: A Mixed-Methods Analysis. *The Western Journal of Emergency Medicine.* 2018;19(2):245-253.
46. Rising KL, Padrez KA, O'Brien M, Hollander JE, Carr BG, Shea JA. Return visits to the emergency department: the patient perspective. *Annals of Emergency Medicine.* 2015;65(4):377-386.e373.
47. Schenhals E, Haidet P, Kass LE. Barriers to compliance with emergency department discharge instructions: lessons learned from patients' perspectives. *Internal & Emergency Medicine.* 2019;14(1):133-138.
48. Vieth TL, Rhodes KV. Nonprice barriers to ambulatory care after an emergency department visit. *Annals of Emergency Medicine.* 2008;51(5):607-613.
49. Walker ER, Fukuda J, McMonigle M, Nguyen J, Druss BG. A Qualitative Study of Barriers and Facilitators to Transitions From the Emergency Department to Outpatient Mental Health Care. *Psychiatric Services.* 2021:appips202000299.
50. Wexler R, Hefner JL, Sieck C, et al. Connecting Emergency Department Patients to Primary Care. *The Journal of the American Board of Family Medicine.* 2015;28(6):722-732.