REVIEWS

Self-Identified Social Determinants of Health during Transitions of Care in the Medically Underserved: a Narrative Review

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BACKGROUND: Medically underserved or low socioeconomic status (SES) patients face significant vulnerability and a high risk of adverse events following hospital discharge. The environmental, social, and economic factors, otherwise known as social determinants, that compound this risk have been ineffectually described in this population. As the underserved comprise 30% of patients discharged from the hospital, improving transitional care and preventing readmission in this group has profound quality of care and financial implications.

METHOD: EMBASE and MEDLINE searches were conducted to examine specific barriers to care transitions in underserved patients following an episode of acute care. Articles were reviewed for barriers and categorized within the context of five general themes.

RESULTS: This review yielded 17 peer-reviewed articles. Common factors affecting care transitions were cost of medications, access to care, housing instability, and transportation. When categorized within themes, social fragility and access failures, as well as therapeutic misalignment, disease behavior, and issues with accountability were noted.

DISCUSSION: Providers and health systems caring for medically underserved patients may benefit through dedicating increased resources and broadening collaboration with community partners in order to expand health care access and enhance coordination of social services within this population. Future studies are needed to identify potential interventions targeting underserved patients to improve their post-hospital care.

KEY WORDS: socioeconomic factors; underserved populations; care transitions; access to care.

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BACKGROUND

Patients discharged from hospitals confront significant vulnerability and excess rates of adverse events in the post-acute period.[1, 2] Poor clinical outcomes during this dynamic time are attributed to many causes, including high-risk disease, evolving clinical needs, and fragmented, poor care coordination.[3–7] Such factors are compounded in patients who lack access to fundamental medical and economic resources. Patients who are *medically underserved*, also referred to as low socioeconomic status (SES), broadly encompass a population subset that traditionally includes racial minorities, the chronically ill, homeless, and low-income populations who lack insurance coverage or have insufficient coverage through Medicaid.[8] These patients defer necessary medical care, and present to the hospital sicker and with more advanced disease.[9–16] Poor care access and cost have been identified within this population as major barriers to routine medical care, thereby increasing medical resource utilization.[17–22]

Despite an implicit understanding that the underserved population faces a multitude of unique struggles in the post-hospital period, the true nature of these barriers remains poorly described in the medical literature. In contrast, multiple studies in Medicare and commercially insured populations have examined the risk of hospital readmission and describe interventions to assist transitions in care to a primary care physician.[23–25] As underserved patients comprise 30% of all patients, ineffectively addressing these issues in the peri-discharge period may have significant consequences on the overall quality and success of care delivery.[26] Moreover, under the federal Hospital Readmissions Reduction Program (HRRP), safety-net and urban teaching hospitals caring for large percentages of patients of SES are disproportionately penalized for high readmission rates, reflecting financial consequences of this inadequate care.[27] Research has shown broader health outcomes are strongly correlated to social determinants of health—environmental, social, and economic factors that are "conditions in which people are born, grow, live, work, or age."[28] These determinants directly account for over a third of total deaths in the USA each year.[29–31] As such, modification of these determinants may aid in achieving health equity between the underserved and insured populations.

In an effort to better identify unique barriers and to elucidate disparities in health outcomes among the medically underserved, we reviewed existing literature for specific characteristics of ineffective transitions following an episode of acute care. By categorizing these factors into an existing comprehensive framework, providers may be able to better influence and prioritize institutional policies in addressing these issues.[28, 32]

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METHODS

We performed a literature review through Ovid MEDLINE and EMBASE covering January 1, 1960 to August 1, 2016, with the assistance of a research librarian. Ovid Medical Subject Headings (MeSH terms) were used to capture post-hospital care: "transition" and "patient discharge" or "patient readmission" with key word searches for "barrier," "follow-up" (and all permutations), "rehospitalization," "early discharge," and "post-discharge." To define the medically underserved population, the Medical Subject Headings "emigrants and immigrants," "homeless persons," "uninsured or underserved or underinsured," "refugees," "transients and migrants" and "Medicaid" were used, augmented with key word searches for low socioeconomic, uninsured, Medicaid, undocumented or homeless.

Inclusion Criteria

Articles were included in the review if they identified an underserved group primarily comprised of Medicaid, uninsured, or homeless adult persons and if the article specifically defined and described specific barriers to post-acute care. Only articles and studies performed in the USA were included. Articles and abstracts were excluded if they primarily addressed the commercial insurance population, Veterans, or Medicare recipients due to the increased services these groups have compared to the underserved. Studies focused on non-medical populations, e.g., surgical or psychiatric patients, were also excluded as to focus on establishment of a primary care medical home. Dual eligible Medicare-Medicaid were only included if the study specifically defined that population as underserved. There was no exclusion made based on study design, size, or methodological criteria. Only peer-reviewed articles were included. After the initial search, titles were reviewed to limit findings to adult medical patients based on the above inclusion criteria.

Data Synthesis

Selected full-text articles were read by the authors and determined for final inclusion by group consensus. After inclusion for final review, abstracted data elements included study design and type, number of patients, insurance status, article methodology, primary outcomes, and identified barriers. The listed barriers were then subcategorized by theme. Given the heterogeneous quality of the methods and outcomes among included studies, a meta-analysis or formal systematic review was not feasible.

RESULTS

The database search yielded 1702 articles. A total of 1635 records were excluded based on title or abstract, leaving 67 full-text articles for additional review (Fig. 1). Ultimately, 17 peer-reviewed papers met final inclusion criteria. The most common reasons for exclusion were lack of discussion of specific barriers to post-hospital follow-up and lack of payer source breakdown.

The 17 included articles had heterogenous study designs[32–48] (Table 1). Most were structured interviews (5) or direct patient surveys (5). Three articles were prospective cohorts [39, 41, 45] while three other articles were designed as a case-control study,[47] a semi-structured interview,[32] and a needs assessment[34] respectively. Only one article was a randomized control study.[38] The number of patients in each study ranged from 17 patients to 2974 (both structured interview methodology papers), with a median of 227 patients for all studies. Primary outcome metrics between studies varied greatly.

There was variability in how underserved populations were examined within studies. Six studies examined both Medicaid and uninsured populations[32, 34, 36, 37, 40, 46], while one explored the uninsured only.[47] One article studied Medicaid patients specifically,[39] while another targeted the homeless population.[42] The remaining eight articles defined the underserved population using methods other than payer source, labeled "all types."[33, 35, 38, 41, 43–45, 48]

Cited determinants in obtaining post-hospital care included cost of medications or services, ability access to services, housing instability, transportation, health literacy, mental illness, and insufficient social support. Cost of care and lack of access were most frequently cited.

When regrouped within the construct of a framework of themes based on social determinants established in prior work, common themes included access failures and social fragility—including housing issues, lack of social support and basic resources, disease behavior, therapeutic misalignment, and accountability (Tables 2, 3 and 4).

DISCUSSION

Our literature review revealed a number of important findings relevant to hospital providers who care for medically underserved patients. We identified access to services and cost of health care as the most commonly cited factors influencing care transitions in this population. When reclassified into themes, access failures and social fragility were most commonly represented. This may reflect greater impediments to timely outpatient follow-up than previously realized in this population. Additionally, while patient accountability and substance abuse may impact an individual patient's care, our findings highlight the critical role of tenuous social circumstances on discharged patients and their direct influence on health outcomes. Moreover, it seems unrealistic, if not impractical, to expect a medically underserved patient to effectively navigate his/her own health care needs given the high cost of care and often non-existent outpatient options available to them.

The results from this exhaustive review of 50 years of literature highlights the paucity of studies explicitly researching

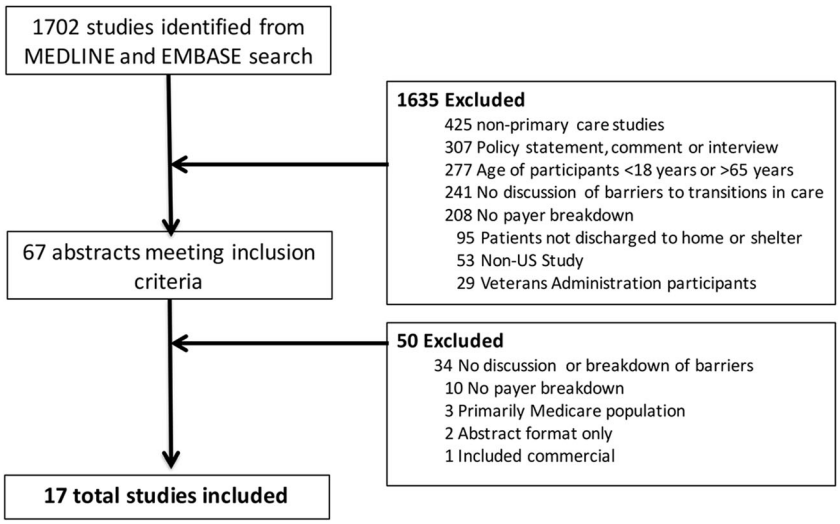

Fig. 1 Flow diagram.

medically underserved populations and their unique obstacles to a successful post-hospital transition. Existing research evaluating the transitional period has been largely directed at specific diseases or Medicare populations.[23, 24, 49, 50] Beyond the provision of suboptimal care, the omission of medically underserved patients with more unique care barriers from prior research may have serious cost implications given expanded Medicaid populations and hospital readmission provisions within the Affordable Care Act.[51]

The implications of our findings directly impact a number of important health care stakeholders and may inform and redirect strategies involving care coordination in this vulnerable population. Health care institutions should explore creative, targeted solutions that specifically improve access to essential care in the medically underserved population. For example, establishment of a medical home—frequently lacking in high-risk Medicaid patients—improves health, decreases care utilization and cost, and reduces disparities between socioeconomic subgroups.[52, 53] Hospitals can improve access and reduce preventable acute care visits by coordinating timely access to publicly funded safety-net clinics.[54–57] Another potentially beneficial strategy in connecting patients with a primary care provider is the initiation of home physician visits or telemedicine services.[58] Programs allotting medications, transportation vouchers, and telephone reminders in the post-acute setting have also been shown to improve the likelihood of timely follow-up.[59]

To further enhance access to primary care and reduce hospital readmissions, hospitals should enlist the help of social and community supports, including community health workers.[38, 60] On a larger scale, states or hospital systems may consider developing an integrated care coordination program that affords vulnerable populations a safety-net system, similar to those already active in Colorado, North Carolina, and Virginia. These programs provide comprehensive care management, contiguous patient care, and establishment of medical homes for vulnerable populations.[61–64]

Health care systems should also re-evaluate their discharge process when transitioning underserved patients to the outpatient setting. Historically, comprehensive discharge interventions broadly targeting all patients demonstrate low overall success, are frequently multicomponent and costly, and rarely address the unique or magnified factors within patients of low SES.[25, 65–71] Instead, providers tasked with discharging at-risk patients should focus on a patient's ability to afford and execute the medical necessities in the context of fragile social support systems and housing, e.g., how likely is a patient being discharged able to afford his/her medications or obtain a ride to their scheduled appointment. Providers should engage the patient in shared decision-making regarding pharmaceutical costs prior to discharge, with realistic goal setting and transparency about differences in prices.[72] Additionally, providers should establish the housing status of a discharging patient, as omitting this may impede the success of a patient with housing insecurity obtaining necessary medications, transportation, or mental health follow-up.[42, 73] The use of checklists (e.g., SAFE DC) may provide a conceptual model when having these discussions in patients with identified housing insecurity.[73]

Table 1 Study Characteristics ($N = 19$)

	N	%
Study design		
Case-control	1	5.3
Prospective cohort	3	15.8
Randomized control trial	1	5.3
Semi-structured interviews	1	5.3
Structured interviews	5	26.3
Survey	5	26.3
Survey and semi-structured interviews	1	5.3
Insurance populations addressed		
Mixed insurances	8	42.1
Homeless	1	5.3
Medicaid	1	5.3
Medicaid/Uninsured	6	31.6
Uninsured	1	5.3

Table 2 Study Descriptions

Author	Title	Study design	Type of study	No. of patients	Insurance category	Summary	Primary outcomes	Barriers discussed specific to underserved	Barrier themes
Blanchard J et al. (2008)	Access to appointments based on insurance status in Washington DC	Article	Survey	250	All types	In a scenario of a patient needing acute post-ED care, the insurance status of patient significantly affected ability to obtain timely follow-up care	Overall success in making an appointment, success with monetary limitations, and success with making an appointment within 7 days	Access, cost of care	Access failures
Englander H & Kansagara D (2012)	Planning and Designing the Care Transitions Innovation (C-Train) for Uninsured and Medicaid Patients	Article	Survey and semi-structured interviews	94	Medicaid/ uninsured	Performed a needs assessment and mapped out key program elements for future use	Needs assessment of barriers for Medicaid/uninsured	Access, cost of care, housing stability, mental illness, transportation, medication adherence	Access failures, social fragility, disease behavior, accountability
Hefner JL et al. (2015)	Primary care access barriers as reported by nonurgent emergency department users: implications for the US Primary Care Infrastructure	Article	Survey	349	All types	Brief survey administered to nonurgent ED patients regarding barriers to primary care.	Reported access barriers	Insurance status, cost of care, transportation, access	Access failures, social fragility
Kangovi S et al. (2012)	Perceptions of Readmitted Patients on the Transitions from Hospital to Home	Article	Survey	1084	Medicaid/ uninsured	36-item survey of readmitted patients addressing preparedness of prior discharge, delays in care-seeking, med adherence, follow-up with PCP and other challenges	Themes related to readmission	Health literacy, medication adherence, insufficient social support, lack of basic resources, substance abuse, mental illness	Therapeutic misalignment, accountability, social fragility, disease behavior
Kangovi S et al. (2013)	Understanding why Patients of Low Socioeconomic Status Prefer Hospitals Over Ambulatory Care	Article	Structured interviews	40	Medicaid/ uninsured	Interviewed underserved patients to determine reasons for hospital care over ambulatory care. They found two profile subtypes: those with >5 acute care visits over 6 months reported social dysfunction and disability, and those with <5 visits over 6 months reported social stability	Reasons for preferring hospital care	Access, cost of care, housing instability, lack of basic resources	Access failures, social fragility
Kangovi S et al. (2014)	Challenges Faced by Patients with Low Socioeconomic Status During the Post-Hospital Transition	Article	Structured interviews	65	All types	Interviewed underserved patients to determine challenges during the hospital and post-hospital transition. 6 themes were identified: (1) powerlessness, (2) misalignment, (3) lack of saliency of health, (4) socioeconomic issues (5) abandonment, (6) loss of self-efficacy	Perception of hospitalization, discharge and post-hospital transition	Access, financial strain, housing instability, provider communication, health literacy	Therapeutic misalignment, access failures, social fragility

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Table 2. (continued)

Author	Title	Study design	Type of study	No. of patients	Insurance category	Summary	Primary outcomes	Barriers discussed specific to underserved	Barrier themes
Kangovi S et al. (2014)	Patient-Centered Community Health Worker Intervention to Improve Post-hospital Outcomes	Article	Randomized control trial	446	All types	446 patients were assigned to 2 study arms, one w/a community health worker (CHW), the other without. Included uninsured, low-income and Medicaid patients. CHW addressed patient barriers on an individual basis	Completion of primary care follow-up within 14 days of discharge	Insufficient social support, insurance, cost of care, housing instability, transportation, lack of basic resources, self-motivation, substance abuse, financial strain	Access failures, accountability, disease behavior, social fragility
Kansagara D et al. 2011	Post-discharge intervention in vulnerable, chronically ill patients	Article	Prospective cohort	227	Medicaid	Discharged patients with chronic illnesses were administered a survey via phone to identify barriers/needs that were then addressed with "brief touch" or intensive care management. The intervention group had a lower 60-day re-hospitalization rate.	Recurrent hospitalization within 60 days after index hospitalization	Access, transportation, health literacy, housing instability	Access failures, therapeutic misalignment, social fragility
Kerr EA & Siu AL (1993)	Follow-up After Hospital Discharge: Does Insurance Make a Difference?	Article	Survey	59	Medicaid/ uninsured	Among patients with no identified primary care physician at admission, patients with Medicaid or no insurance were significantly less likely to have follow-up within the month after discharge, and were less likely to be able to identify a regular physician than those with insurance	% with primary care doctor	Cost of care	Access failures
Kiefe CI et al. (1999)	Compliance with post hospitalization follow-up visits; rationing by inconvenience?	Article	Prospective cohort	372	All types	Interviewed patients to determine barriers to compliance with follow-up appointments	Factors associated with compliance with 1st follow-up appointment	Transportation, cost of care, provider communication	Access failures, therapeutic misalignment, social fragility
Kushel MB et al. (2001)	Factors Associated with the Health Care Utilization of Homeless Persons	Article	Structured interviews	2974	Homeless	Described utilization of health care and barriers to care in the homeless population	Use of acute of ambulatory and acute care services; inability to receive care or medications	Medication adherence, mental illness, housing instability	Accountability, social fragility, disease behavior
Long T et al. (2013)	Reasons for readmission in an underserved high-risk population: a qualitative analysis of a series of in-patient interviews	Article	Structured interviews	17	All types	Interviewed patients after hospital discharge to identify themes relating to risk of readmission	Patient experience after discharge	Access, cost of care, insufficient social support, health literacy	Access failures, social fragility, therapeutic misalignment

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Table 2. (continued)

Author	Title	Study design	Type of study	No. of patients	Insurance category	Summary	Primary outcomes	Barriers discussed specific to underserved	Barrier themes
McCormick D et al. (2012)	Access to Care after Massachusetts Health Care Reform	Article	Structured interviews	431	All types	Surveyed emergency room patients regarding utilization of outpatient care and compared the privately insured to those with Medicaid, commonwealth or uninsured	Utilization of outpatient visits and cost-related barriers to care	Access, cost of care	Access failures
Misky G et al. (2016)	Hospital readmission from the perspective of Medicaid and uninsured patients	Article	Semi-structured interviews	18	Medicaid/ uninsured	Interviewed patients upon readmission to determine reasons for readmission	Reasons for admission	Access, insufficient social support, mental illness, housing instability, substance abuse	Access failures, social fragility, disease behavior
Mitchell SE et al. (2012)	Health Literacy and 30-Day Post-discharge Hospital Utilization	Article	Prospective cohort	703	All types	Examined effect of health care literacy on hospital utilization	% 30-day re- utilization of emergency and hospital services	Health literacy	Therapeutic misalignment
Naderi S et al. (2012)	Factors associated with failure to follow-up at a medical clinic after an ED visit	Article	Survey	125	Medicaid/ uninsured	Identified factors associated with missed follow-up appointments from the ED and assessed the ability of clinicians to predict which patients would follow-up	% missed follow-up appts	Transportation, cost of care, employment restraints, lack of childcare	Access failures, social fragility
Warren BH et al. (1999)	Opportunities for increasing value of Health Services among Frequently Hospitalized Indigent Patients in a Public Hospital	Article	Case-control	99	Uninsured	Compared uninsured versus insured patients who had been admitted four or more times in a year. Uninsured patients were younger, male, homeless, substance abuse patients, chronically mentally ill, and often lost to follow-up	Differences in risks associated with readmission	Access, mental illness, substance abuse, housing instability, transportation	Access failures, social fragility, disease behavior

Table 3 Barriers by Frequency of Discussion (Articles (*N*) = 17)

	N	%
Cost of care	10	52.6
Access to care	8	42.1
Housing instability	8	42.1
Transportation	7	36.8
Health literacy	5	26.3
Mental illness	5	26.3
Insufficient social support	4	21.1
Substance abuse	4	21.1
Medication adherence	3	15.8
Lack of basic resources	3	15.8
Financial strain	2	10.5
Provider communication	2	10.5
Employment restraints/unemployment	1	5.3
Insurance status	1	5.3
Self-motivation	1	5.3
Lack of childcare	1	5.3

Targeted care management may additionally offer a solution for addressing social and economic barriers. One intervention on largely homeless inpatients at high risk for readmission demonstrated promise through integrated care management addressing housing, transportation, and social issues.[74] Another hospital program utilized a patient needs assessment, serial stakeholder meetings, and formal programmatic development through integrating a nurse transitions advocate to assist patients in self-management and to link patients to outpatient care.[62] Lastly, an intervention to provide respite care for homeless patients following hospitalization effectively reduced inpatient utilization.[75]

LIMITATIONS

Limitations of this paper include the significant heterogeneity of populations studied and an overall paucity of data represented. Such findings may represent ambiguity in defining this population, relative indifference from policy makers, and/or our narrow targeted interest in exploring studies specific to the post-acute care period. Additionally, the overall level of evidence of included studies was relatively low (given numerous retrospective and qualitative studies) with only one randomized controlled trial included. However, we posit inclusion of qualitative studies in this review is beneficial, if not necessary, as such studies represent the barriers as reported by patients themselves in describing their acute care transition experiences. In addition, absence of a reported barrier in an individual study did not preclude its existence, nor were individual barriers necessarily mutually exclusive, e.g., a patient who reported difficulty with affording medications may not have separately reported difficulty obtaining transportation. Likewise, other barriers (e.g., educational level, racism) may exist beyond those explored in our included studies. Lastly, we were not able to quantify the relative impact of the various defined barriers on care transitions due to the nature of the included studies.

Table 4 Barriers Categorized by Theme (Articles (*N*) = 17)

	N	%
Access failures	13	68.4
Cost of care	9	47.4
Access to care	9	47.4
Transportation	7	36.8
Insurance status	1	5.3
Social fragility	12	63.2
Housing instability	8	42.1
Insufficient social support	4	21.1
Lack of basic resources	3	15.8
Financial strain	2	10.5
Employment restraints/unemployment	1	5.3
Lack of childcare	1	5.3
Disease behavior	6	31.6
Mental illness	5	26.3
Substance abuse	4	21.1
Therapeutic misalignment	6	31.6
Health literacy	5	26.3
Provider communication	2	10.5
Accountability	3	15.8
Medication adherence	3	15.8
Self-motivation	1	5.3

CONCLUSIONS

Expansion of Medicaid and broad healthcare reform is not sufficient to ensure improved population health outcomes without concurrent interventions that address socioeconomic issues that consistently plague vulnerable patients. While multiple, large-scale health policy initiatives have addressed care coordination among Medicare beneficiaries, unique transitional care barriers and effective interventions among Medicaid and uninsured populations remain largely unaddressed.[76] Additional research into the real-world issues that negatively affect at-risk patients is needed to gain broader insight and to create effective tools to improve the health of this vulnerable community and reduce health care costs.

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Compliance with Ethical Standards:

Conflict of Interest: *The authors declare that they do not have a conflict of interest.*

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