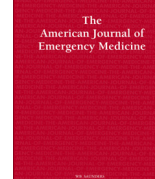




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Are acute care settings amenable to addressing patient social needs: A sub-group analysis

Keywords:

Social determinants of health
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Based on a strong body of evidence linking socioeconomic status and health, interest in patients' social and economic needs is rapidly expanding [1–8]. This has seeded new research on the feasibility and impact of incorporating interventions that address patients' social needs—like early literacy initiatives, community linkage programs, and legal services—into routine health care delivery [9–11]. Existing work in the area of social interventions has largely focused on pediatric primary care settings [9,10,12]. Yet low-income patients seen in emergency departments and urgent care centers often lack contact with primary care clinics [13] or public assistance networks [14,15] and frequently use acute settings for non-urgent issues [16]. As a result, low-income children may miss opportunities for social resource linkages.

In 2016, we reported findings from a randomized controlled trial designed to assess the comparative impacts on social needs and child health of two interventions, one involving in-person navigation services provided by a volunteer trained to actively link participants with available social services, and the other a written handout of community-based social service resources. The original study population included patients from both primary care and acute care settings. The full study sample, methods, and results are reported elsewhere [17]. In this sub-group analysis, we examine program impacts on those patients seen in acute care settings only.

Of the 3058 families approached in two Bay Area hospitals' acute care settings, 1237 families were enrolled. The final follow-up sample included 718 patients for a retention rate of 58%. The enrolled sample included 53.8% Latino families; 80% of participating households reported combined household annual incomes less than \$30,000/year. Participant attrition did not differ by arm on key study variables.

Overall, 82.5% of sub-sample enrollees reported at least one social need, and 34.4% reported four or more needs. The most common social needs included: insufficient money to pay utility bills (40.7%), running out of food (39.6%), trouble finding a job (31.5%), and unstable housing (28.6%).

In mixed linear regression analyses, adjusted for baseline number of social needs, clinical site, and clustering by randomization day, there was a significant study arm effect for change in social needs. Decreases in number of social needs were greater in the navigator arm compared to active control group [mean difference of 0.69 (SE = 0.20), $p < .001$]; this difference persisted after further adjusting for family demographics. The largest relative changes (baseline to follow-up) in social needs between study arms were: difficulty paying utility bills (navigation group = 31% decrease vs. active control = 3% increase), running out of food (navigation group = 23% decrease vs. active control = 9%

decrease), and lack of or unstable housing (navigation group = 14% decrease vs. active control = 36% increase).

We found a significant difference in improvement on the five-point scale of parent-reported child health status in the intervention group versus in the active control arm [mean difference of 0.18 (SE = 0.07), $p < .05$]. In mediation analyses, after controlling for change in social needs, the relationship between intervention study arm and change in child health [mean difference of 0.14 (SE = 0.10), $p = .14$] was no longer significant.

This study presents a sub-group analysis of patients in pediatric acute care settings recruited to participate in a social and economic needs-targeted intervention. Analyses demonstrate that acute care interventions targeting families' social and economic hardships can successfully decrease families' needs, and that addressing these contextual needs can lead to child health improvements. Participants in the acute care navigation arm experienced larger decreases in social needs and improvements in parent-reported child health than those who received a handout with general information about available community resources. Differences in impact between study arms in the acute care sub-sample were largest for family needs related to utility assistance, food security, and housing security/conditions.

In the sub-sample navigation arm, changes in child health were partially mediated by changes in social needs. This finding differs from the primary study findings, where the intervention's health and social needs impacts appeared unrelated [17]. Relationships with primary care providers may obscure the mediation effects between social needs reduction and health improvements; moreover, our sub-group results may underestimate the potential mediating effects in acute care settings since more study families reported a usual source of care than national averages [18]. Future work should explore further the mechanisms through which attention to social needs impacts health in these different care settings. These results also illustrate the specific social domains successfully impacted in acute care settings. We hope that these findings can contribute to operational decisions to undertake or revise interventions addressing families' social needs in acute care settings, since children facing socioeconomic barriers to health are disproportionately seen for health concerns in these contexts.

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Conflict of interest

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Clinical trial registration

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References

- [1] American Academy of Pediatrics Council On Community. Poverty and child health in the United States. *Pediatrics* 2016;137(4). <https://doi.org/10.1542/peds.2016-0339>.
- [2] APA Task Force on Childhood Poverty. A strategic road-map: committed to bringing the voice of pediatricians to the most important problem facing children in the US today. http://www.ambpeds.org/public_policy/pdf/APA_Task_Force_Strategic_Road_Mapver3.pdf; 2003, Accessed date: 7 April 2017.
- [3] American Academy of Pediatrics Medical Home Initiatives for Children with Special Needs Project Advisory Committee. The medical home. *Pediatrics* 2002;110(1):184–6.
- [4] American Academy on Pediatrics Committee on Community Health Services. The pediatrician's role in community pediatrics. *Pediatrics* 2005;115(4):1092–4. <https://doi.org/10.1542/peds.2004-2680>.
- [5] Baer TE, Gottlieb L, Sandel M. Addressing social determinants of health in the adolescent medical home. *Curr Opin Pediatr* 2013;25(4):447–53. <https://doi.org/10.1097/MOP.0b013e32836280ae>.
- [6] Chung EK, Siegel BS, Garg A, Conroy K, Gross RS, Long DA, et al. Screening for social determinants of health among children and families living in poverty: a guide for clinicians. *Curr Probl Pediatr Adolesc Health Care* 2016;46(5):135–53. <https://doi.org/10.1016/j.cppeds.2016.02.004>.
- [7] Fieldston ES, Zaniletti I, Hall M, Colvin JD, Gottlieb L, Macy ML, et al. Community household income and resource utilization for common inpatient pediatric conditions. *Pediatrics* 2013;132(6):e1592–01. <https://doi.org/10.1542/peds.2013-0619>.
- [8] Colvin JD, Zaniletti I, Fieldston ES, Gottlieb LM, Raphael JL, Hall M, et al. Socioeconomic status and in-hospital pediatric mortality. *Pediatrics* 2013;131(1):e90–182. <https://doi.org/10.1542/peds.2012-1215>.
- [9] Fleegler EW, Lieu TA, Wise PH, Muret-Wagstaff S. Families' health-related social problems and missed referral opportunities. *Pediatrics* 2007;119:e1332–1. <https://doi.org/10.1542/peds.2006-1505>.
- [10] Garg A, Toy S, Tripodis Y, Silverstein M, Freeman E. Addressing social determinants of health at well child care visits: a cluster RCT. *Pediatrics* 2015;135(2):e296–04. <https://doi.org/10.1542/peds.2014-2888>.
- [11] Beck AF, Klein MD, Kahn RS. Identifying social risk via a clinical social history embedded in the electronic health record. *Clin Pediatr* 2012;51(10):972–7. <https://doi.org/10.1177/0009922812441663>.
- [12] Garg A, Marino M, Vikani AR, Solomon BS. Addressing families' unmet social needs within pediatric primary care: the health leads model. *Clin Pediatr* 2012;51(12):1191–3. <https://doi.org/10.1177/0009922812437930>.
- [13] Data Resource Center for Child and Adolescent Health. Title V National Performance Measure #11.2: percent of children with and without special health care needs having a medical home. <http://childhealthdata.org/browse/rankings/maps?s=121>, Accessed date: 17 April 2007.
- [14] Gordon JA, Chudnoffsky CR, Hayward RA. Where health and welfare meet: social deprivation among patients in the emergency department. *J Urban Health* 2001;78(1):104–11. <https://doi.org/10.1093/jurban/78.1.104>.
- [15] Gordon JA. The hospital emergency department as a social welfare institution. *Ann of Emerg Med* 1999;33(3):321–5.
- [16] Zimmer KP, Walker A, Minkovitz CS. Epidemiology of pediatric emergency department use at an urban medical center. *Pediatr Emerg Care* 2005;21(2):84–9.
- [17] Gottlieb LM, Hessler D, Long D, Laves E, Burns AR, Amaya A, et al. Effects of social needs screening and in-person service navigation on child health: a randomized clinical trial. *JAMA Pediatr* 2016:e162521. <https://doi.org/10.1001/jamapediatrics.2016.2521>.
- [18] Zickafoose JS, Gebremariam A, Davis MM. Medical home disparities for children by insurance type and state of residence. *Matern Child Health J* 2012;16(Suppl. 1):S178–187. <https://doi.org/10.1007/s10995-012-1008-9>.