# Medical-Legal Partnership Education Impacts Resident Physician Competencies Relating to Social Drivers of Health

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**Abstract:** Medical-legal partnerships (MLPs) support patients and clinicians by streamlining legal and medical care and helping identify and address a subset of social drivers of health (SDOH). Less is known on the effect of MLPs on the competency of residents regarding SDOH. The aim of this study was to identify how integration of an MLP into a pediatric residency training program affected residents' experience understanding and addressing SDOH.

Medical-Legal Partnerships (MLPs) are defined by the National Center for Medical-Legal Partnership as a model of health care and legal services that aim to better address patient and family well-being by integrating legal assistance into medical settings, strengthening the linkages between medical and legal care, and providing for referral from medical to legal care.[1] MLPs were first developed in the early 1990's and are now integrated into over 450 healthcare locations in 49 different states and the District of Columbia.[2] Prior work has identified the strong potential for MLPs to improve overall health outcomes, health care delivery, and provider satisfaction, while simultaneously reducing financial burdens.[3] There have been growing incentives to increase the number and reach of MLPs. For example, the Affordable Care Act (ACA) created accountable care organizations which utilizes a coordinated approach to also address social drivers of health (SDOH) and reduce healthcare costs for patients.[4] The ACA additionally supported the increase in the reach of MLPs through its Community Health Needs Assessment, a require-

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ment for all tax-exempt hospitals to conduct a needs assessment identifying and subsequently providing solutions for the factors contributing to the health disparities that exist in their communities.[5] Also, the role of MLPs has expanded as the Medicare Access and CHIP Reauthorization Act of 2015 provided additional financial incentives to physicians that screen patients for certain SDOH.[6]

## Medical-Legal Partnerships (MLPs) and Social Drivers of Health (SDOH)

In addition to strengthening the linkages between medical and legal care, providing for referral from medical to legal care, and co-locating legal care within medical care settings, MLPs support patients and clinicians by streamlining legal and medical care and helping to identify and address a subset of SDOH concerns termed health-harming legal needs (HHLNs). SDOH, such as income, access to healthcare, healthy food, housing, job stability, and personal safety, are estimated to determine more than three-fourths of health, while only one-fourth is determined by health behaviors, medical care, or genetics.[7] For these reasons, reducing disparities, improving health for all, and achieving health equity are all components of the overarching goals for Healthy People 2020 and were included as top priorities by the Centers for Disease Control and Prevention.[8] Some direct examples of prior MLP successes include supports for patients with chronic diseases such as addressing environmental hazards for patients with asthma, the positive impact of legal care access for patients with sickle cell disease, and reduction of chronic stress and improved health outcomes.[9] Tobin-Tyler and Teitelbaum describe that MLPs in themselves can serve as an intervention due to their ability to detect the "often-gross injustices that fall into the gap between 'laws on the books' and 'laws on the street' by working directly with patients and clinical partners in community-based clinics."[10] For example, parents that were contacted by MLPs after medical certification for utility shut-off protections also had various other stressors including food, finances, and housing which could be subsequently identified and addressed.[11] It is thanks to these MLPs that these needs can be better identified and addressed for all patients.

### *Medical-Legal Partnerships in Pediatrics*

MLPs are indispensable for pediatric patients. One study qualitatively demonstrated through semi-structured interviews with providers and patients that MLPs can enrich individual and population health by equipping medical professionals with the knowledge, skills, and tools to help patients with specific social determinant of health-related needs.[12] Additionally, Taylor, et al., demonstrated that a screening questionnaire is beneficial in identifying and acting on energy insecurity for children's wellbeing.[13] Furthermore, over a third of patients in this study had more than two unmet legal needs that could result in health or safety concerns for children.[14] Another study demonstrated that MLPs also fostered stronger longitudinal relationships between patients and lawyers and fostered trust and confidence in the legal system overall.[15]

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### *The Role of the Physician in Medical-Legal Partnerships*

Despite a strong understanding of the benefits to patients, families, and communities from MLPs, there is still much that can be done to explore the impact of MLPs from the physician perspective. Murphy, et al., describe the too often siloed nature of addressing social drivers of health stating, "legal needs that address social determinants of health have traditionally been addressed by the legal community, with minimal input or feedback from the health care community beyond the provision of basic evidence for people with disabilities seeking public benefits."[16] Gilbert and Downs describe that few pediatricians "have successfully incorporated medical-legal issue screening, assessment, intervention, and referral into their routine practice."[17] When defining the research area still to be done for MLPs, Benfer, et al., ask the unanswered question of what effect working with attor-



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neys in an MLP has on the doctors: "do those doctors approach their work differently than doctors without exposure to partnering attorneys?"[18] One previous study demonstrated that the presence of clinic-based social and legal resources resulted in increased confidence in knowledge and more screening by resident physicians.[19]

*Medical Training Structure*

Immediately following medical school, most medical doctors complete graduate medical education within a residency program designed to further train them in a medical specialty, during which time they are termed "residents" or "resident" physicians. Programs range in their timeline, and in the United States the categorical pediatric residency program is three years. Through this training, doctors immerse themselves in real-time learning in inpatient and outpatient care settings while also completing focused didactic experiences. Resident physicians in primary care-oriented specialties such as internal medicine, pediatrics, and obstetrics-gynecology often follow a group of patients, serving as their primary provider, in a setting often called a "continuity clinic."[20] Resident physicians are primarily responsible for their patients in these settings, and high levels of continuity (when individual clinicians see specific patients repeatedly) have been associated with better patient health outcomes and improved patient and resident physician satisfaction.[21]

There is a paucity in the literature on the impact of MLP training and integration on resident competencies. For this reason, we aimed to study the impact of MLP integration into a pediatric residency program to determine the impact on residents' experience understanding and addressing SDOH.

*Integration of a Medical-Legal Partnership to a Residency Training Program*

To successfully implement MLPs, teaching about MLPs to future and current medical professionals is vital. Joint medical-legal courses, clerkships, and clinical rotations have all effectively instructed medical students about MLP and health harming legal needs.[22] Training at the residency level typically includes a host of clinical experiences and some classroom didactics.[23] However, as both undergraduate medical education (medical student) and graduate medical education (residency) is already overloaded with information, adding to either curriculum is often difficult.[24] Girard, et al., demonstrated during a 2016-2017 pilot study that legislative advocacy training in preclinical medical students can improve their advocacy knowledge and skills.[25] However, there is a paucity in the literature on the impact of MLP training and integration on resident competencies. For this reason, we aimed to study the impact of MLP integration into a pediatric residency program to determine the impact on residents' experience understanding and addressing SDOH.

## Materials and Methods

This study was conducted at Yale-New Haven Children's Hospital (YNHCH) in collaboration with The Center for Children's Advocacy Medical-Legal Partnership Project at YNHCH. This MLP at YNHCH was first established in 2013 by the Center for Children's Advocacy to focus on addressing health harming legal needs related to childhood poverty and increase access to beneficial services. A full-time attorney and one volunteer law student are available to consult with healthcare workers informally and to accept formal legal patient referrals.[26] Additionally, the attorney and the medical director of the MLP (AMF) provide trainings and didactic teaching sessions about legal and social topics with health impacts on children.[27]

From 2013 to 2017, this MLP received 1212 referrals for patients and families with 1304 unique legal needs with most cases centering around housing (26%) or education (25%).[28] Through a 2021 qualitative study, this pediatric MLP was also shown to have a positive impact on providers through: "1) improved provider awareness of SDOH and HHLN, 2) expanded provider perceptions of their role and responsibilities as clinicians, 3) improved provider efficacy in addressing SDOH and HHLN, 4) empowered providers to engage in systemic advocacy, and 5) improved providers' relationships with patients' families."[29]

This study was deemed exempt by the Yale IRB.

*Study Participants*

Study participants included 18 residents in the pediatric residency program who completed both a pre- and a post-survey on their experience with the MLP. Their



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Table 1
**MLP-specific and non-MLP SDOH topics assessed in pre and post surveys.**

| MLP-specific SDOH topics | Non-MLP SDOH topics |
|---|---|
| • Housing conditions and instability<br>• Public benefits<br>• Food insecurity/supplemental nutritional assistance<br>• Educational services<br>• Health insurance difficulties<br>• Disability benefits | • Domestic violence/abuse<br>• Maternal depression<br>• Incarceration of a family member<br>• Special supplemental nutrition program for Women, Infants, and Children (WIC)<br>• Food pantries<br>• Parenting skills groups<br>• Child care/after school care<br>• Head Start<br>• Mental health resources<br>• Domestic violence<br>• Care coordination for children with special health care needs<br>• Birth to Three |

experience included a variety of interactions with the MLP ranging from formal didactic teaching sessions to general informal interactions with the MLP lawyer.

*Data Collection*

Pre-and post-surveys were collected over the course of the first 5 years of the MLP (see appendix for full survey). Residents rated their comfort, knowledge, and ability to advise on MLP and non-MLP-related SDOH via a five-point Likert scale (poor 1, fair 2, good 3, very good 4, excellent 5) before and after exposure to the MLP, matched by their anonymous code. The survey included both SDOH directly addressed by the MLP (HHLN) and those not addressed by the MLP (Table 1). The topics on the survey that the MLP addresses included: housing (poor conditions and instability), public benefits, food insecurity, school problems, health insurance difficulties, disability benefits, supplemental nutrition assistance (including SNAP, formerly known as food stamps), Temporary Assistance for Needy Families (TANF), and English as a second language (ESL) programs. The other topics not directly addressed by the MLP on the survey were: domestic violence/abuse, maternal depression, incarceration of a family member, special supplemental nutrition program for Women, Infants, and Children (WIC), food pantries, parenting skills groups (e.g., Nurturing Families), child care/after school care, Head Start, mental health resources, care coordination for children with special health care needs, asthma resources, Birth to Three, and obesity (e.g., Bright Bodies). True-false questions measuring knowledge on both MLP and non-MLP SDOH topics were queried pre/post-MLP exposure, analyzed nonparametrically, and evaluated using a paired t-test. Means between the pre-post-MLP questions and the pre-post-non-MLP questions were evaluated using ANOVA. All statistical analysis was done utilizing GraphPad Prism 9 software.

## Results

At the time of initial survey, all respondents were in their first (n=12) or second (n=6) year of residency and 95% were between the ages of 26-30 years old. The average time between pre- and post-surveys was 2 years. Self-reported comfort on all MLP topics increased (pre-test mean 2.59 (SD 0.84), post-test mean 3.47 (SD 0.81), p 0.004), as did self-reported knowledge (pre-exposure 2.16 (SD 0.67), post-exposure 2.94 (SD 0.72), p <0.001), and self-reported ability to advise pre-exposure 1.71 (SD 0.70), post-exposure 2.85 (SD 0.74), p <0.001) (Figure 1). Additionally, self-reported comfort on non-MLP topics increased (pre-exposure 2.64 (SD 0.80), post-exposure 3.37 (SD 0.94), p 0.009) as did ability to advise (pre-exposure 1.82, (SD 0.86), post-exposure 3.09 (SD 0.83), p 0.001). However, self-reported knowledge on non-MLP topics did not statistically improve (pre-exposure 2.67 (SD 0.79), post-exposure 3.17 (SD 0.71), p 0.06. The changes between pre-intervention and post-intervention did not differ between MLP and non-MLP topics (comfort p=0.6907, knowledge p=0.4147 and ability to advise p=0.7265).

There was a statistically significant increase in correct answers when comparing the results of the pre-exposure and post-exposure knowledge-based true and false questions on housing (pre-exposure 32%,



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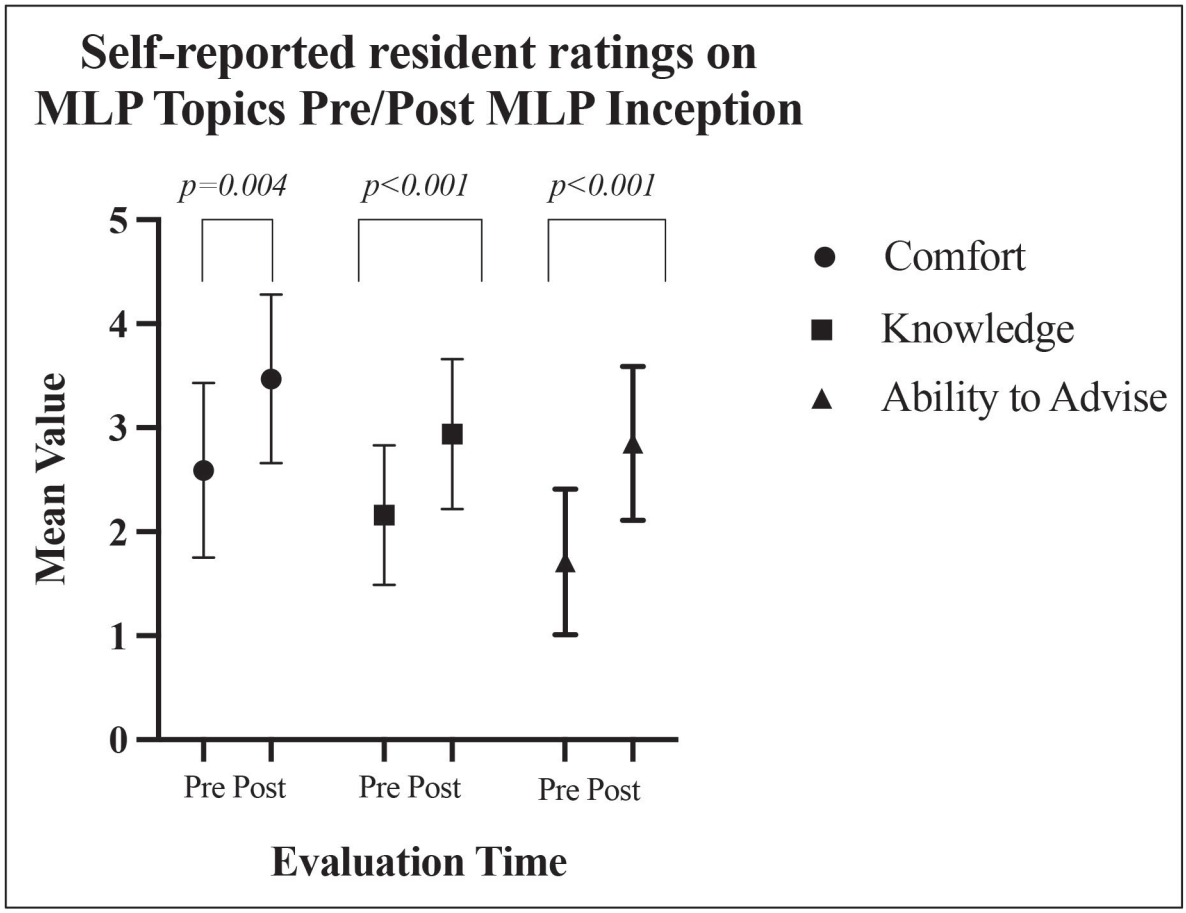
Figure 1
**Self-reported resident physician ratings on MLP topics pre and post MLP inception.**




post-exposure 43%, p=0.018), financial assistance (pre-exposure 46%, post-exposure 82%, p<0.001) and education (pre-exposure 35%, post-exposure 57%, p=0.019). Additionally, there were some questions with all respondents answering either incorrectly or "I do not know." These questions asked about qualification for Medicaid, the role of the school district for school evaluations, the importance of rent payments while landlords make repairs, unhealthy housing conditions, and housing inspectors in the local area (see appendix).

## Discussion

The incorporation of the MLP into the training curriculum is a useful pedagogical approach to educating pediatric resident physicians about topics related to SDOH. There was a statistically significant increase in objective knowledge regarding SDOH as well as self-reported comfort, knowledge, and ability to advise on all MLP topics. Additionally, there was an increase in comfort and ability to advise on non-MLP topics, but not self-reported knowledge.

The improvement in ability to advise is noteworthy as it is a particularly challenging skill, requiring one to not only understand the topics at hand but to then apply that knowledge and take it a step further as demonstrated by "performance integrated into practice," the most challenging level of Miller's pyramid for clinical competence.[30] Thus, these results demonstrate the positive impact exposure to an MLP, and in the future could be improved to utilizing more specific opportunities for formal and informal training on advising families regarding SDOH and HHLN in particular.

Although all categories demonstrated a statistically significant increase from the pre-to post MLP exposure data, the post-training self-rating scores were overall still low, averaging 3.47, 2.94, and 2.85 out of 5. Some explanations could include that respondents felt the topics were challenging or that the trainings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did not do enough to ensure that the learners retained all information. Additionally, these surveys were conducted between the years 2013 and 2018 when SDOH were not as integrated into the overall curriculum for medical schools or residencies nationally, thus these trainings were the only exposures for residents in these topics.

SDOH are now a much larger part of medical education as there has been a growing national shift towards the focus on the psychosocial parts of medicine at all levels of training. Since at least 2018, there has been published academic literature supporting that moving forward there is potential for impact as educational experiences become integrated into clinical education, intentional time for trainee reflection on action is dedicated, and specific competencies are identified for identification and mitigation of SDOH.[31] Additionally, nationally, this drive has been reflected in the accumulating volume of policy statements by the Centers for Medicare & Medicaid Services and others regarding the need to address health related social needs. As SDOH are now more incorporated into a variety of educational experiences, repeating surveys today might elicit higher scores overall. Furthermore, an area of improvement could focus on the modalities of teaching at MLP sessions. Prior work has demonstrated that simulation-based training, creating standardized tools for future patient interactions, and including residents in the planning process of educational experiences all can lead to a significant improvement in the educational experience.[32]

We found no significant difference in the change in scores when comparing MLP-related topics with non-MLP related topics. As one goes through residency training, learning and growth occurs throughout the process. Our data suggests that this learning development is not hindered by the MLP trainings, but that it does not necessarily drive significant knowledge change independently.

There was a statistically significant increase in recall when comparing the results of the pre- and post- true and false questions, which can be attributed to the MLP trainings and time spent in residency training. These results are promising that the MLP seems to complement the residency experience and knowledge about these topics improves over time.

Interestingly, the true/false question topics for which all respondents chose the wrong answer or "I do not know" highlight areas for improvements for MLP trainings and/or experiential learning. The topics included qualification for Medicaid, interactions with school districts for evaluation, laws about rental when housing is substandard, and housing inspection. While some of these topics are directly taught in trainings, others are not. The integration of the MLP into the residency program is a unique experience as its teaching is twofold – the MLP provides direct teaching through its topics discussed in direct didactic teaching, but it is also an integrated experience that continues as resident physicians learn through their clinical experience and utilize the MLP in their patient care practice. Though time constraints do often hinder the number of topics that can be covered, more emphasis in trainings might improve overall knowledge. Longitudinal threads could also be built in to ensure trainees gain clinical experiential learning in these topic areas over time.

Limitations of our study include a low overall resident response rate and potential conflation of SDOH and HHLN as residents increasingly encounter these topics in other trainings and clinical exposure. Additionally, residents may not have been able to attend all trainings due to scheduling. Lastly, self-reported measures are less objective than observational measures. Future studies might evaluate how trainees use knowledge gained in trainings and clinical encounters within their future encounters.

MLP integration into pediatric resident training is associated with improvements in objective resident knowledge and self-perceived comfort, knowledge, and ability to advise on various HHLNs and SDOH. Future research may benefit from today's SDOH-heavy curricula and may elucidate how these improvements affect resident clinical reasoning and ultimately improve outcomes for pediatric patients and families.

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## Note

The authors have no conflicts of interest to disclose.

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