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Changing Internal Medicine Residents' Perspectives on Social Determinants of Health

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Background

- Social determinants of health (SDOH)
  - conditions in which people are born, live, learn, work, play and worship
  - affect wide range of health, functioning and quality-of-life[1]
- SDOH play enormous roles in health and well being
  - annual US deaths attributable to SDOH equivalent to the number due to lung cancer[2]
  - place of birth, race and income all have strong influence on health outcomes
  - place of birth is more strongly associated with life expectancy than race or genetics [3]
- There is growing awareness of importance of social factors in improving overall population health and wellbeing
  - highlighted by COVID pandemic, which disproportionately affected minority racial groups[4, 5]
- Physicians must understand these core principles in order to bring forth change
- Our objective: quality improvement project to improve Rowan's Internal medicine residents' awareness and understanding of SDOH

Methods

- Online survey
  - 23 questions focusing on SDOH and their medical implications in patient care
  - sent to 50 residents of the Rowan Internal Medicine Residency program
  - focus questions assessing experiences in patient care regarding COVID-19, vaccine availability and hesitancy
- Subsequent implementation of Curriculum
  - lecture series: 3 didactic lectures followed by 4 interactive case studies adapted from New England Journal of Medicine[1,6] emphasizing salient points
  - national & local statistics along with resources to aid in patient care presented
- Post-education survey
  - Collected from the same group to determine curriculum effectiveness in addressing SDOH
  - 22 questions, 33 responses collected

Results

- Assessment of Internal Medicine Residents knowledge of SDOH
  - 41.7% did not know definition of SDOH
  - 36% unable to provide an example
  - only 47.2% knew the difference between health equity and health equality
  - understanding of these important concepts improved across the board after implementation of curriculum (Figure 1)
- 9 out of 10 residents believed social needs and factors impact the overall health of their patients care
  - however, 89% did not know where to locate SDOH tab in the EMR
  - This percentage dropped to 3% after curriculum implemented (Figure 1)
- 94% of residents encountered patients who could not afford medications (Figure 2) or had social factors complicating timely discharge
- 88.9% of residents felt limited/hopeless in caring for patients with social needs (Figure 3)
- Most residents asked about patients' medications and employment
  - access to food, transportation, safety and education rarely addressed
  - after curriculum implementation, all social factors addressed more often (Figure 4)
- 53% of residents were not confident addressing vaccine hesitancy (Figure 1) and a limited percentage understood interconnection of COVID-19 and SDOH
  - Curriculum improved residents' comfort addressing vaccine hesitancy and understanding of COVID-19's impact on SDOH (Figure 5)
- Many residents perceived importance of social factors
  - But: 77.8% of residents did not feel completely comfortable addressing SDOH
  - After training, number of residents who did not feel comfortable at all decreased to 0% (Figure 6)
- After undergoing curriculum:
  - most residents would consult and work with case manager/social work to help care for their patients
  - 90% indicated would look up available resources to provide to patients (Figure 7)

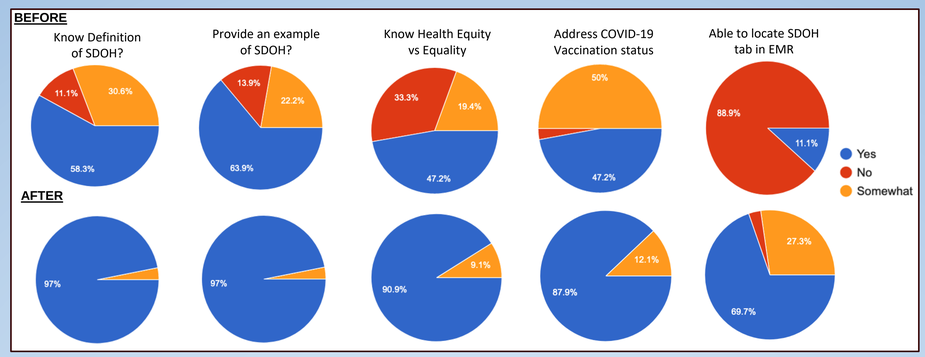

Figure 1. *Pie chart demonstrating proportion of internal medicine residents' comprehension of SDOH before and after implementation of the curriculum. Majority of residents have significantly improved their understanding of SDOH, health equity, and health equality. Most can even now provide specific examples of each.*

Questions	Yes	No	Somewhat
% of Residents who routinely have patient encounters with:			
… readmission primarily due to social factors	91.7%	8.3%	N/A
… readmissions primarily due to inability to afford medications	94.4%	5.6%	N/A
% of Residents who routinely assess:			
… whether patients routinely follow with an established PCP	44.4%	22.2%	33.3%
… patients living conditions	13.9%	36.1%	50.0%

Figure 2 (above) & 3 (below). *Tables summarizing several social factors encountered by internal medicine residents and their ability to routinely assess and then address these factors.*

Questions	0-20%	20-40%	40-60%	60-80%	80-100%
Residents who encountered pts with social factors preventing timely and discharge	8.3 %	47.2 %	33.3%	8.3%	2.8%
Residents who confirmed patient understood follow up plan	2.8%	19.4%	16.7%	38.9%	22.2%
Residents overall perception of hopelessness:					
When it came to ability to provide care due to SDOH	11.1 %	38.9%	38.9%	5.6%	5.6%

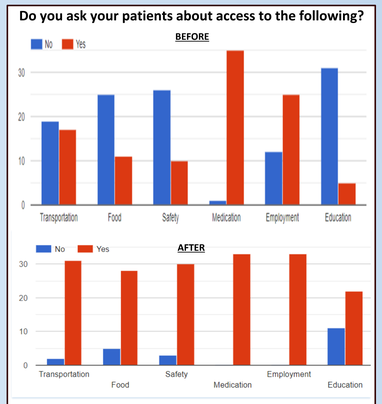

Figure 4. *Bar graph demonstrating the prevalence of routine evaluation of specific components of SDOH before and after implementation of the curriculum. There were noticeable improvements in what residents evaluated across the board.*

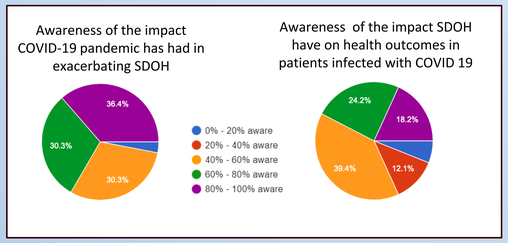

Figure 5. *Pie Charts demonstrating residents awareness of SDOH in the context of COVID 19*

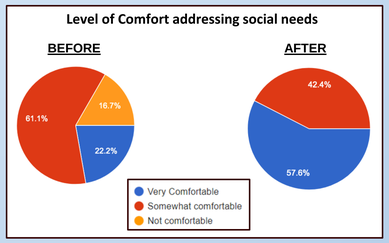

Figure 6. *Pie chart demonstrating the comfort level of internal medicine residents in addressing social needs or factors before and after implementation of the curriculum.*

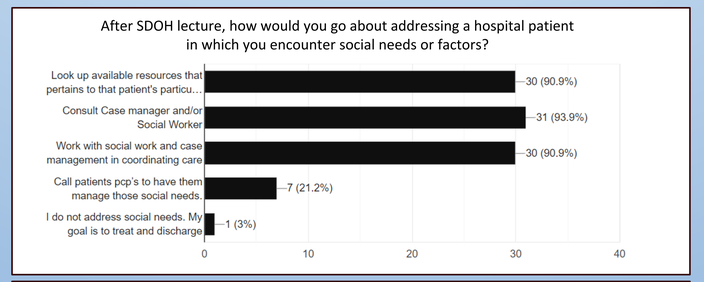

Figure 7. *Bar graph summarizing the various methods residents would use when addressing the social needs of their patients. Most residents would consult and work with a case manager/social worker to help care for their patients. 90% of all residents would take it upon themselves to look up available resources to provide their patients*

Discussion

- Objective: assess understanding of SDOH in our Internal medicine residency program
  - program includes four different community hospitals across two counties
  - serving patients with diverse socioeconomic backgrounds
  - as survey confirmed, many residents have experienced poor outcomes in patient health due to SDOH
- Most residents felt social needs vastly impact overall health of patients but felt uncomfortable addressing SDOH
  - evidenced by 100% of residents deferring to case management/social work
  - raises concern for our graduate medical education system
  - suggests need to further expand curriculum to include this essential training
- Since 2018, ACGME requires residents to understand SDOH and the resources to address them[7]
  - our curriculum provided education to help fulfill this requirement
  - curriculum used case studies to assess knowledge and solidify management of SDOH in potential real-life scenarios
- Approximately 245,000 deaths were due to low education and 162,000 deaths were due to low social support in the United States in 2000[8,9]
  - Necessitating that future physicians understand and learn how to screen and address social needs early on in training[10,11]
- Medical readmissions are often due to unidentified underlying social needs[9] like medication cost
  - curriculum provided residents tools for screening social needs
  - such knowledge encourages participation in research and policymaking to help find ways to improve patients' health
- COVID-19 pandemic has unmasked inequalities in SDOH
  - populations including economically disadvantaged, racial minorities, incarcerated and elderly populations have had higher rates of COVID-19 infections, hospitalizations and mortality[4,5]
  - lecture series highlighted these disparities using regional data, including counties covered by our hospital networks
    - spotlighted current reality as it affects our own patients
    - increased understanding of impact of COVID-19 on SDOH
- Unique curriculum objective was to identify and interpret SDOH page in EMR
  - enabled residents to fully capture components of SDOH that actively played role in each patients care
- Addressed utility of telehealth options and vaccine hesitancy with intent to
  - Increase COVID-19 prevention
  - reduce hospitalizations and mortality
- Limitations to generalization of study findings
  - broad range and variability of individual resident experiences, especially across all years
  - lack of continuity clinic limits to heavy focus on inpatient experiences
  - single study at one community-based residency program in New Jersey
  - only 68% of residents participated fully

Conclusion

- While most residents agreed that SDOH plays a major role in health equity of their patients, few knew extent of impact and even fewer could confidently attempt to address it
- After implementing our curriculum, improvement was seen in residents' understanding of impact of each component of SDOH on patients, including impact of COVID-19 pandemic on these determinants
- It is crucial for physicians to better understand the community they serve beyond realm of pure medicine
- Our objective was more than simply educating resident physicians on the deep impact of their patients' social circumstances; but also empowering them to address these factors for improved patient outcomes and physician well being
- Early education on SDOH starting in medical school and continuing throughout residency will equip budding physicians with more holistic set of tools and enable more effective care of patients from all walks of life

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