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Innovation Project Final Report:
Preventing Suicide in the Health Care Workforce
October-December 2020

TEAM:
Lead: Jeff Rakover
Researcher: Alex Anderson
Commissioners: Jessica Perlo & Jesse McCall

INTENT AND AIM:
In the wake of COVID-19, healthcare providers have experienced unprecedented stress. While IHI has an existing focus on joy in work and burnout, we have not studied the more specific problem of suicide in the healthcare workforce—the worst case scenario for job-related stress. This R&D wave studied the causes of healthcare worker suicide, and identified "best practice" approaches to prevention.

We examined the following sub-questions:

1) Do healthcare providers have a higher rate of suicide relative to the general population? If so, what are the differences between provider groups (e.g., doctors vs. nurses)?
2) What are the causes of suicide among healthcare providers?
3) Are there disparities? For example by race, ethnicity, gender, sexual orientation, gender identity, specialty, age, or region?
4) Are there evidence-based practices for suicide prevention specific to healthcare providers?
5) If there are not evidence-based practices for suicide prevention specific to healthcare providers, what practices used in the general population are most applicable?
6) If there are few examples of successful programs to prevent suicide among healthcare providers specifically, what can we learn from other high pressure industries with likely stigma around mental illness? (e.g., military; airlines; law).

KEY FINDINGS

- Men and women in nursing have somewhat elevated suicide rates relative to men and women in other occupations; women physicians have a somewhat elevated suicide rate relative to other women.
- Higher suicide rates among women in healthcare represent an urgent challenge, and the driving factors are not yet well understood. Pervasive sexism in medicine, harassment, and stigma around help-seeking likely all contribute.
- Workplace factors (such as interpersonal conflict and threat of job loss) seem to contribute to suicidality among healthcare professionals, in addition to common risk factors for suicide in the general population (e.g., major depression).
- Experts identify a "continuum" of distress for the workforce: burnout, depression, and suicide. At the same time, these are separate constructs, and interventions to impact burnout will not necessarily address depression or suicide.
- A small number of dedicated programs have emerged in recent years to prevent suicide in the healthcare workforce, and the American Foundation for Suicide Prevention has developed a screening tool used by many of these programs.
- In addition to screening, peer support programs, training for managers and colleagues on recognizing and addressing the signs of distress, and in-house dedicated mental health support all represent important interventions, which are highly replicable.

- Because of the thankfully small number of healthcare professional suicides each year, intervention programs struggle to demonstrate an impact on outcomes, but show promise in terms of acceptability and uptake.
- A number of policy challenges continue to serve as barriers to reducing stigma and encouraging access to care for those in distress, such as stigmatizing language in state licensure and re-licensure applications, and similar challenges in hospital and clinic privileging (e.g., questions about a history of mental illness or mental health treatment).

DESCRIPTION OF THE WORK:
We relied on standard R&D techniques. As with other research, we scanned the academic and grey literature for emerging best practices and conducted expert interviews, detailed below in Appendix A.

FINDINGS:

Here, we review our findings in relation to the six questions described above.

1) Do healthcare providers have a higher rate of suicide relative to the general population? If so, what are the differences between different provider groups (e.g., doctors versus nurses)

The evidence suggests elevated rates of suicide for some healthcare professionals. Existing data is imperfect and not entirely clear. In general, existing reviews suffer from many flaws, such as conflation of statistics (e.g., combining in meta-analysis studies comparing physician suicide to the general population with those comparing suicide to other occupations) and lack of precision about time periods under investigation.

In the U.S., the CDC's National Violent Death Reporting System (NVDRS) tracks all suicides in many states using death certifications, medical examiner and law enforcement reports, and toxicology results. NVDRS data suggest that nurses have a higher suicide rate than others, especially female nurses (more recent years' data suggest elevated rate for male nurses as well).

NVDRS data do not suggest elevated suicide rates for physicians in the U.S., despite common claims that physicians have much higher suicide rates than others. Women physicians may have a higher suicide rate relative to other women, but recent NVDRS analyses suggest the difference does not meet some statistical significance rules.

2) What are the causes of suicide among healthcare providers?

Nurses

The broadest U.S. analysis suggests management issues, shift work, aggressive behavior from colleagues, workplace conflict, and inadequate role preparation as contributing factors in nurse suicides.

A more recent analysis by the same investigator reviewing individual cases of nurse suicide (yet to be published) finds that recent or impending job loss was an important factor. In other words, a recurring theme in review of case notes for nurses who had committed suicide was an imminent threat of job loss or recent termination.[i]

Like physicians, nurses have higher rates of depression than the general population

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Physicians

As for nurses, workplace factors are an important factor in studying drivers of physician suicide. Studies of physician suicide showed that physicians were more likely to have a job problem preceding their death than others. The most recent analysis of U.S. data suggests that physicians were also more likely to have had a physical or mental health problem than others, and less likely to have experienced significant personal problems.

Other important factors in the literature include lack of control over working conditions, degrading experiences, conflicts with colleagues, patient demands, role conflicts, increasing age, and certain specialties (psychiatry, anesthesiology).

Physicians also have a high rate of depression. A systematic review of depression among doctors found rates from 20.9-43.2%.

3) Are there disparities? For example by race, ethnicity, gender, sexual orientation, gender identity, specialty, age, or region?

Female nurses have a more elevated rate of suicide relative to other women than male nurses do relative to other men. Female physicians may have a higher rate of suicide relative to other women, but it is not entirely clear.[ii] Recent international meta-analysis suggests a higher rate of suicide for women physicians relative to others, but the highest quality studies do not suggest an elevated rate. The balance of evidence suggests that women physicians have a higher risk for suicide than other women. (A consistent finding from many studies over many years)

People of color serving as nurses or physicians do not appear to have elevated rates of suicide relative to whites. In general, whites have a higher rate of suicide than other racial/ethnic groups.

In general, non-heterosexual sexual orientation is considered a risk factor for suicide, but this factor has not been investigated specifically in the context of healthcare providers.

The evidence points to women in healthcare bearing special risks relative to other women, which deserve further investigation. Interviewees cited a number of possible factors driving this risk, including the work-life demands, and sexism/harassment in medicine. Some evidence suggests that women physicians are disinclined to seek help when in distress.

4) How is suicide related to burnout?

Experts in the field identify a continuum of distress among healthcare professionals, from burnout, to depression, to suicide. Interviewees urged us to distinguish burnout from depression and suicide. Burnout is not a clinical diagnosis, and is not "depression at work." An individual can experience burnout while not experiencing depression – for instance if that individual has a joyful home environment. Researchers recently found that burnout is not a risk factor for suicidal ideation. At the same time, factors that contribute to burnout, such as perceived loss of autonomy at work and overwhelming demands, also can contribute to severe distress and suicidality. Some experts still do posit a relationship between burnout and suicide.

5) Are there evidence-based practices for suicide prevention specific to healthcare providers?

We did not identify any programs that showed strong evidence of reducing suicide rates among healthcare professionals. Some programs have emerged that have been designed specifically to prevent physician and nurse suicide, and have shown some promise in moving upstream variables, especially access to care.

UC San Diego: Healer Education, Assessment and Referral (HEAR) Program
The HEAR program provides education and proactive screening, focused on identifying, supporting and referring those with untreated depression or suicide risk, and reaches doctors, nurses, and residents. Two full-time therapists and a 0.35 FTE psychiatrist support the program.

The program has three main goals: (1) education to decrease stigma related to mental health treatment through school-wide education and group emotional process debriefings after a significant event (2) Proactive risk screening and (3) bridge counseling & referral to treatment

UC San Diego, like a growing number of institutions including Providence Health and Services, uses the American Foundation for Suicide Prevention screening tool (ISP) to identify doctors and nurses in distress, and has identified many providers at high risk, linking them to services.

Additional detail regarding the HEAR Program is available from UCSD and AFSP.

Oregon Health and Science University (OHSU) Resident and Faculty Wellness Program
OHSU has had a similar program in place since 2004. While the full-time staff for Project HEAR at UCSD focus on case management and referral, the full-time therapy staff for the OHSU program offer intensive treatment onsite. The program targets residents, fellows, and full-time faculty.
Like Project HEAR, the OHSU program includes an educational prong designed to address stigma, and a separate arm providing individualized care. The educational arm includes wellness promotion workshops for residents and faculty, and education during orientation sessions.

The consultative arm includes use of the AFSP screening tool for distress and suicidality, and in-person appointments offered free of charge without insurance billing, and resident support groups. The therapeutic approach focuses on brief, evidence-based intervention rather than long term therapy. Program staff also offer consultation to GME and program leaders and chief residents about their concerns regarding potentially distressed individuals. The program has served hundreds of individuals who report a high level of satisfaction. Engagement has increased over time. Two psychologists and two psychiatrists provide services to 2300 eligible residents and faculty. Program leaders estimate that a midsized academic medical center would spend roughly $200,000 a year to run such a program, covering mainly FTE staff time.

Note that these programs show promise mainly in terms of process measures (identifying those in distress and bringing them access to care). No single screening tool has shown great impact in identifying those at risk of suicide completion. Anecdotally, leaders from UCSD report a decrease in the number of suicides in the years since the inception of the program.[iii]

We note that the Joint Commission adopted a standard for physician health that stipulates medical staffs put into place processes to educate physicians regarding distress and confidential systems to support physicians in distress. The American Foundation for Suicide Prevention recommends anonymous annual screening for distress in health systems and that practitioners receive training in identifying and responding to distress.

6) If there are not evidence-based practices for suicide prevention specific to healthcare providers, what practices used in the general population are most applicable?

A growing body of evidence suggests that suicide in general is indeed preventable. The most commonly cited effective intervention in the literature is, arguably, restriction to access to lethal means. Other important interventions include:

- Policies to reduce alcohol use
- Improved depression care
- Safety planning
- Continuity of care/follow-up for at risk individuals
- Ethical media reporting that does not sensationalize suicide
- Mitigating the impact of economic downturns via policy
- Gatekeeper training (gatekeepers are "individuals in a community who have face-to-face contact with large numbers of community members as part of their usual routine.")

Abstracting across the recent literature and meta-analyses, Cramer et al. suggest that suicide prevention efforts should emphasize (1) general practitioner education regarding depression and suicide (2) increased access to care for high risk groups and (3) lethal means restriction.

Suicide is a complex problem, and effective prevention requires multi-level, simultaneous interventions. Experts do not advocate for any single strategy as superior to all others.

7) If there are few examples of successful programs to prevent suicide among healthcare providers specifically, what can we learn from other high pressure industries with likely stigma around mental illness? (military; airlines; law).

Workplace suicide prevention has gained increased attention in recent years. The U.S. Air Force has one of the most exciting models for suicide prevention in the literature. Their program resulted in a significant drop in the suicide rate for personnel, from 3 to 2.4 per 100,000; further, available evidence suggests level of implementation over time tracked to fluctuations in the suicide rate.

The program includes several components, with a focus on policy changes and leadership involvement. It seeks to effect broad cultural change, impacting knowledge, beliefs, attitudes, and behaviors concerning suicide and help-seeking. Eleven initiatives form the program's core, ranging from leadership engagement to confidentiality protections for those seeking help.

Driver Diagram

Based on our findings regarding promising health system approaches, evidence-based suicide prevention in general, and risk factors for suicide among nurses and physicians, we developed a driver diagram (Appendix B) to outline how health systems can respond. Echoing the US Air Force program and the emerging literature on suicide prevention in general, health system programs should seek to effect broad cultural change and build multiple intervention pathways.

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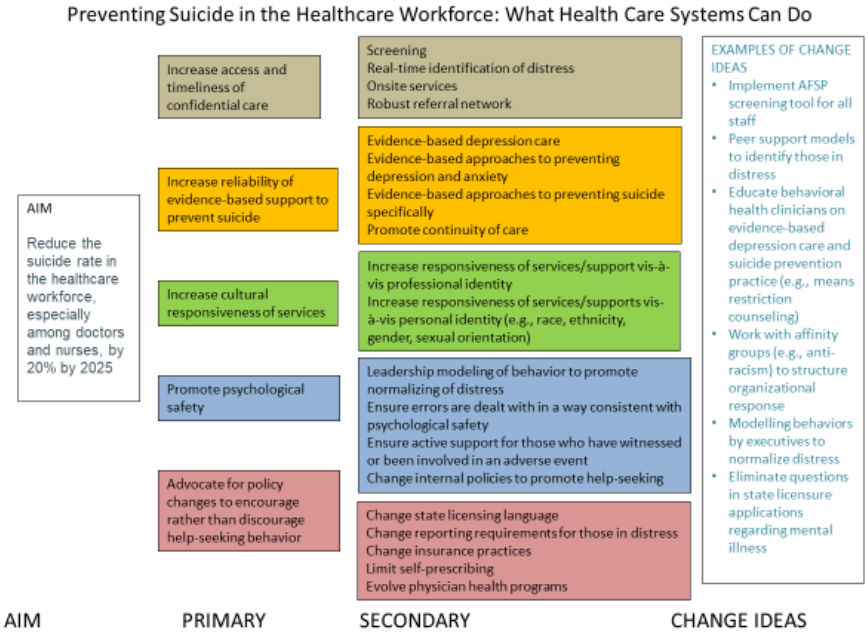

Description of primary and secondary drivers and change ideas:

P1: Increase access and timeliness of confidential care

All of the health systems we interviewed who actively prioritized suicide prevention in the healthcare workforce strove to find ways to make care more accessible for those in distress. Nurses, and especially physicians, voice concerns regarding professional repercussions for seeking help. In some states, medical licensure and licensure renewal applications ask invasive questions regarding an individual's history of mental illness and psychiatric treatment, and empirical analysis suggests these questions dissuade providers from seeking help. Thus, building systems of support with a high degree of credible confidentiality should remain a priority.

S1: Screening

As noted above, some health systems have begun to use the American Foundation for Suicide Prevention's screening tool to identify those in distress and link them to services. Offering screening represents one avenue to increasing the likelihood that physicians and nurses in distress connect to therapeutic support and other services.

S2: Real-time identification of distress

Several health systems we spoke with noted efforts to educate members of the workforce, including managers and leaders, in recognizing and addressing the signs of distress in colleagues. In one multi-hospital system in the Northeast, leaders structured a multi-pronged approach to suicide prevention which prominently includes psychoeducation for all leaders. This training, supported by psychologists who work for the system's center for professional wellbeing, includes content on the signs of distress, and how to respond with compassion and curiosity rather than disciplinary action. The training includes role plays and a review of HR policies.

Most of the institutions we spoke with had put into place or had begun to build peer support programs. Peer support programs most commonly offer trained emotional support to individuals involved in patient safety incidents, such as medical errors.

Today, healthcare organizations are further evolving peer support programs to respond to distress more generally. For example at one large system in the Southwest, the peer support program has evolved to include suicide prevention training, with peer supporters trained on identifying and responding to possible suicidality using the QPR approach.[iv]

S3: Onsite services

Many of the health systems we interviewed have built up onsite mental health services for staff. Given clinicians' busy schedules, offering substantial support onsite can help address common access issues. These onsite services can address the common pitfalls of offsite, contracted Employee Assistance Programs, which includes lack of training for working with healthcare professionals and long wait times. In some cases, these therapists report through the Human Resources team. A separate line of reporting, such as through the patient experience team, can prevent concerns about confidentiality violations.

S4: Robust referral network

For those who require longer term more intensive psychotherapy, or who would prefer to access therapeutic or psychiatric services offsite, maintaining a referral list of practitioners in the community who agree to see healthcare professionals without long waits and who appreciate the specific stressors faced by doctors and nurses can be helpful. Several of the systems we interviewed reported keeping carefully curated lists of providers, and the American Foundation for Suicide Prevention recommends this practice as part of an idealized model they developed.

P2: Increase reliability of evidence-based support to prevent suicide

S1: Evidence-based depression care

Institutions who have successfully reduced suicide rates, such as Henry Ford Health System, included education on and measurement of evidence-based practice for depression care (documented by Henry Ford leaders as part of a "perfect depression care" bundle). Ensuring evidence-based depression care means, for example, training for psychotherapists in use of cognitive behavioral therapy and applying clear guidelines for use of medications. As staff may ultimately access healthcare within their employer system, efforts to promote evidence-based depression care remain crucial.

S2: Evidence-based approaches to preventing depression and anxiety

Increasingly, certain interventions show promise in helping healthcare providers manage stress and anxiety, and these programs can help improve resilience. For example, the MindStrong intervention from the Ohio State University includes several sessions of cognitive behavioral-skills building. The intervention showed improved outcomes for nursing residents in mental health, healthy lifestyle behaviors, and job satisfaction.

S3: Evidence-based approaches to preventing suicide specifically

Means restriction counseling and safety planning show promise in preventing suicide in general, and constitute key aspects of the successful suicide prevention program at Henry Ford; today they continue as key elements of the set of changes advocated by the global "Zero Suicide" campaign—an effort to spread evidence-based suicide prevention practices worldwide. Advocates of the approach suggest broad training in the knowledge and skill to conduct means restriction counseling and safety planning of at-risk individuals. Training on such counseling should be provided to internal staff providing

counseling services to the workforce, to external EAP providers, and to behavioral health specialists in the system who might treat staff members as patients.[v]

S4: Promote continuity of care

Recent research suggests that times of job transition may pose specific risks to healthcare professionals—particularly if a doctor or nurse leaves involuntarily.[vi] Staff who have recently left, especially those with involuntarily terminated employment, should receive special consideration for access to supportive services. Such support could include access to EAP programs, but should also include access to other avenues, such as peer support or warm handoffs to community specialists.

P3: Increase cultural responsiveness of services

While we did not identify racial or ethnic disparities in the data on suicide in the healthcare workforce, institutions should still ensure they build their suicide prevention efforts with equity in mind, and the history of racism, sexism, and homophobia in the medical profession. Given heightened risks for women in medicine relative to other women, institutions should pay attention especially to ways they can understand distress experienced by women in their workforce.

Some institutions reported partnering with affinity groups, such as an internal Black Lives Matter group, or a gender equity taskforce, to inform their prevention efforts. Peer support staff should receive training in how to respond to incidents of maltreatment animated by bias or animus. The University of California system has created training videos for this purpose.

S1: Increase responsiveness of services/supports vis-à-vis professional identity

Numerous interviewees noted the special needs of healthcare professionals as a patient group. Treating a fellow healthcare provider poses specific challenges, such as an overly informal collegial relationship that may prevent an objective view of the patient's condition. In other cases, a provider may not take seriously enough a peer's condition. In the UK, the special needs of healthcare providers prompted the development of separate health services dedicated to treating healthcare professionals. Health systems should make training available for those working with healthcare professionals to better understand their needs. A small number of experts nationally specialize in treating other doctors; our interviews suggested that these experts would be willing to help build such trainings.[vii]

S2: Increase responsiveness of services/supports vis-à-vis personal identity

Peer supporters, managers, and those offering professional care to medical professionals should be sensitized to the impact of discriminatory behavior by both patients and staff, and should receive training on how to respond when such events occur. Harassment and lateral violence are risk factors for suicide in the healthcare workforce. Institutions should study challenges faced especially by female employees and co-produce interventions to address these challenges. One health system we interviewed reported building such a group.

P4: Promote psychological safety

Numerous experts suggested that psychological safety serves as the foundation for any broader effort to address distress in the workforce.[viii] Staff must not fear disciplinary action if they seek help. Successful organizational suicide prevention efforts like the US Air Force Program start with leadership messaging, which includes normalization of distress and encouragement of help-seeking.

S1: Leadership modeling of behavior to promote normalizing of distress

At one large urban system we interviewed, the incoming Chief Quality Officer started his tenure by telling a story about patient errors in which he was involved, and the emotional impact it had on him, during institution-wide grand rounds. This helped set the stage for broader cultural change.

Normalization of distress also encompasses psychoeducation for healthcare professionals. Psychoeducation at another system we interviewed includes groups sessions with residents, stressing that most physicians will experience significant distress at some point during the course of a career, and offering education on how best to cope what that distress.

The UCSD model includes regular messaging by executives to staff, encouraging help-seeking and completion of the AFSP survey.

S2: Ensure errors are dealt with in a way consistent with psychological safety

At one large urban system we interviewed, creating a culture of psychological safety meant starting at the top. Board meetings historically included sessions where executives had to speak to errors that took place in the facilities. Executives were regularly fired during these meetings. A new CEO and CQO changed the culture of these meetings to re-frame them as learning opportunities, noting that executives would likely bring a punitive approach to their own management styles if they experienced it themselves. In general, psychological safety involves ensuring attention to systems rather than individuals, and not unjustly blaming employees for problems.

S3: Ensure active support for those who have witnessed or been involved in an adverse event

Psychological safety also means ensuring employees involved in distressing situations have ready access to peer support and counseling. Broad spread of trained peer supporters across an institution – to every specialty, and covering every shift – helps ensure rapid identification of employees potentially in need of assistance. Several health systems we interviewed reported aggressive efforts to increase coverage of teams via peer support.

S4: Change internal policies to promote help-seeking

Numerous hospitals and clinics retain language in privileging documentation that asks about a history of mental illness or mental health treatment. This language, like similar licensure language, discourages individuals from seeking treatment for fear of disparate treatment by an employer. Institutions like Michigan Medicine have removed such questions.[ix]

P5: Advocate for policy changes to encourage rather than discourage help-seeking behavior

All interviewees we spoke to agreed that policy change must occur to promote help-seeking behavior. The successful US Air Force suicide prevention model demonstrates that policy change must occur to remove any barrier to help-seeking, especially in a profession like medicine where significant stigma regarding mental illness exists.

S1: Change state licensing language

A 2018 analysis found that medical licensure boards in 32 states still asked questions about a history of mental illness that may violate the Americans with Disabilities Act. Only seven states asked no questions about mental illness in licensure applications.

Both the American Psychiatric Association and the American Medical Association have made recommendations that states not ask blanket questions about mental illness, and have suggested alterative language. Health systems often have significant political influence and could play a role in effecting changes by state medical licensure boards. State nursing boards also ask such questions and should also change their practices.

S2: Change reporting requirements when a colleague is in distress

In some states, nurses and doctors have a legal requirement to report a colleague who exhibits signs of impairment to the state nursing or medical board. Such reporting can result in immediate disciplinary action. In reality, healthcare professionals are unlikely to report a colleague in distress, and these laws likely discourage help-seeking behaviors.

S3: Change insurance application process

Some malpractice, life and disability insurers will deny coverage to an individual reporting mental illness or treatment for mental illness. This practice discourages providers from seeking help. Insurers should not be permitted to deny policies due to such reporting. Prohibitions on denying coverage exclusively due to a history of mental illness would likely require changes to state and/or federal law.

S4: Limit self-prescribing

While the American Medical Association code of ethics stipulates self-prescribing as a violation, in many states, physicians can self-prescribe. Physicians and nurses are more likely to use medications to complete suicide than the general public, likely due to greater access. Health systems should prohibit self-prescribing, routinely tracking prescribing behaviors to identify self-prescribing problems, and also ensure limited access to substances that may be used for self-harm (e.g., via more secure storage). Some interviewees suggested that state laws prohibiting self-prescribing could help.

S5: Evolve physician health programs

Physician health programs developed in the 1980s mainly to address substance use, in the wake of a landmark 1972 report from the American Medical Association, *The Sick Physician*. Nearly every state now has a dedicated "physician health program" which connects distressed physicians with support. Significant variation exists in the structure and culture of these programs. Some still take a relatively punitive approach and maintain close relationships with state medical boards (including receipt of funding). To promote self-referral, physician health programs should exist entirely separately from state medical boards and should maintain separate programmatic workflows for self-referral versus mandatory treatment. They should also maintain separate approaches to supporting physicians with psychological distress versus those with substance use disorders, as some have reported that programs have sometimes inappropriately applied the same approach to both groups (including random drug and alcohol screening for physicians not experiencing addiction). Experts also noted the need for greater oversight of both physician health programs and state medical licensure boards. Some have reported abusive behavior from such entities, including inappropriate and unfair judgments. State departments of health or the U.S. Department of Health and Human Services could serve a useful oversight function.

CONCLUSIONS

Supporting health care workers' mental health — especially to prevent suicide — requires increased awareness, stigma erosion, and utilization of best practices. Experts who have studied the underlying data and practitioners leading prevention programs have a variety of opinions on the basic epidemiology, drivers of provider distress, and best practices for proactive and reactive responses to suicide prevention. Even so, key themes emerged as described in the driver diagram listed above.

Based on this research wave, IHI has several opportunities to add value to this space directly in service of our strategic priority of Joy in Work as well as quality, safety, and equity. IHI should consider how to incorporate suicide prevention into existing work and explore opportunities for new program and project development.

OPEN QUESTIONS

We identified a number of problems in our research that also call for attention in the context of efforts to address physician and nurse distress.

1. Many physicians lack a regular source of medical care.[x] Primary care physicians are an important node in some suicide prevention efforts for identifying individuals experiencing mental illness and connecting to treatment.
2. Means restriction continues to be perhaps the most evidence-based intervention for suicide prevention, and is underexplored in context of prevention for physicians and nurses. Means restriction for medical professionals could mean many things: pharmacy checks, random drug testing, and weapons screening in hospitals. We need to understand better ways of addressing these opportunities.
3. Job problems are important in the etiology of suicide for both physicians and nurses. We need a clearer understanding of the nuances of these job problems to develop better interventions to address them.
4. Research on suicide in the healthcare workforce suggests that women in medicine have a higher level of risk than women in other occupations. We must better understand the reasons why and structure interventions accordingly.
5. Suicide among other healthcare professionals (dentists, social workers, psychologists, administrative leaders) remains under-investigated; we should better understand who is at risk and whether distinct risk factors impact these populations.
6. Data collection is a gap. We need better training and education for those who write death certificates to ensure deaths are coded accurately, especially for healthcare professionals, given stigma. Better data could drive more targeted regional or local interventions. After-event briefings in the context of physician health programs can help (investigate what, if anything, could have been done). Experts suspect many suicides among healthcare workers are mis-coded as accidental overdoses.

APPENDICES:

Appendix A: Interviews

Outside IHI
Louise Andrew, MD JD FIFEM Founder, MD Mentor
Christine Moutier MD

Chief Medical Officer, American Foundation for Suicide Prevention
Eric Wei, MD, MBA Interim CEO; SVP and CQO, NYC Health and Hospitals
Dr. Glenda Mutinda, PhD Director of Interprofessional Well-Being, JPS Health Network **Kimberly Cartwright**, BSN, RN, CCRN-K, TCRN Project Manager for Graduate Medical Education, JPS Health Network
Judy Davidson, DNP RN FCCM FAAN Nurse Scientist, UC San Diego Health
Justin Coffey, MD Chair of the Department of Psychiatry, Addiction Medicine, and Behavioral Health, Geisinger
Beth Welborn, MHA Organizational Development Manager, Southcoast Health
Katherine Gold, MD, MSW, MS Associate Professor, Family Medicine and Obstetrics and Gynecology, University of Michigan
Stephen Pratt, MD Anesthesiologist, Peer Support Lead, Beth Israel Deaconess Medical Center
Heather Farley, MD, MHCDS, FACEP Chief Wellness Officer, ChristianaCare Health System **Vanessa Downing**, PhD Director of ChristianaCare Center for WorkLife Wellbeing, ChristianaCare
Colin West, MD, PhD Professor of Medicine, Medical Education, and Biostatistics, Mayo Clinic
Linda Kenney Director of Peer Support Programs, Betsy Lehman Center for Patient Safety
Susan Scott, PhD, RN, FAAN Nurse Researcher Adjunct, University of Missouri Health Care
Sidney Zisook, Director, UC San Diego Residency Training Program
Jeff Dill Founder, Firefighter Behavioral Health Alliance
Michael Myers, MD Vice Chair Education, Director of Residency Training, State University of New York, Downstate

Appendix B: Driver diagram as a table (complete list of primary and secondary drivers, linked to change ideas)

[i] Interview with Dr. Judy Davidson, December 17, 2020.
[ii] Interview with Dr. Katherine Gold, December 10, 2020.
[iii] Interview with Dr. Sidney Zisook, November 17, 2020.
[iv] Interview with expert [anonymized], December 17, 2020.
[v] Interview with Dr. Justin Coffey, December 15, 2020.
[vi] Interview with Dr. Judy Davidson, December 17, 2020.
[vii] Interview with Dr. Mike Myers, Nov. 5, 2020. Interview with Drs. Heather Farley and Vanessa Downing, December 10, 2020.

[viii] Interview with Dr. Stephen Pratt, December 10, 2020; Interview with Dr. Eric Wei, December 21, 2020; Interviews with Drs. Vanessa Downing and Heather Farley, December 10, 2020.
[ix] Interview with Dr. Katherine Gold, December 10, 2020.
[x] Interview with Dr. Michael Myers, Nov. 5, 2020.