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Mobilizing Technology and Innovation to Support Rural Health

Mitigating gaps in rural health resources and the workforce

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Introduction

Mobilizing Technology and Innovation to Support Rural Health

Mitigating gaps in rural health resources and the workforce

According to the Rural Healthy People 2030 survey, rural residents' top three health concerns are mental health, substance-use disorders and health care access. Geographical isolation, inadequate health infrastructure and a shortage of health professionals can result in poor health outcomes in rural settings. These challenges impact rural communities and residents' well-being both physically and emotionally. Technology and artificial intelligence (AI) can bridge these gaps in innovative ways to make health care services more accessible in rural communities and support economic stability. This Knowledge Exchange e-book provides insights on how rural health care leaders envision using technology and innovation to address these issues, as well as transform their organizations and community engagement.

Rural residents top three health concerns

1. Mental health
2. Substance-use disorders
3. Health care access

Action Items

10 strategies and technology investments
rural health leaders prioritize to attract clinicians and expand health services in their communities

10 | Use Findhelp or Unite Us to **connect the hospital and clinics to community-based organizations**. Follow up and make sure the patient connected with the service and that it was a quality experience.

1 | Communicate and commit to a **digital health vision** in the hospital strategic plan and educate the community on specifics being implemented and the big picture.

2 | Form an **interdisciplinary digital health and AI steering committee** with an executive sponsor to vet technology and look at each solution for security, ethics and operational issues. Use data and analytics to justify training and staffing investments.

9 | **Pilot AI programs** like MindUP, Mental Health First Aid and Youth Mental Health First Aid to expand access to vital assessments. Train care team members in these programs to educate staff in schools and community settings.

3 | **Partner with specialty programs** such as teleneonatal intensive care, teleneuro, telepharmacy and telehealth for patients with chronic obstructive pulmonary disease. Collaborate with other hospitals and emergency medical service providers on mobile integrated health programs.

8 | Develop patient education materials and videos using AI tools to **address the health literacy gap**.

4 | Work on good **processes that can be repeatable and scalable** for claims processing and clinical workflows.

7 | **Create a telepsychiatry hub** for perinatal patients. Offer virtual medical and behavioral health services in schools. Partner with large behavioral health providers and insurers on geriatric psych units and safe rooms for patients experiencing acute behavioral health crises for assessment and stabilization.

6 | **Address nursing shortages with virtual integrated nursing care models.** Use team models for inpatient rounding to improve the patient experience. Add mobile patient apps to interact with hospital services during inpatient stays and emergency department (ED)visits for better patient satisfaction scores.

5 | **Select AI technology designed to fit easily into clinical teams' day-to-day workflows** inside the electronic health record and does not detract from patient-clinician interactions. Adopt ambient listening technology to reduce clinician documentation burden and increase patient face time. Triage inbox messages with AI solutions to prioritize patients who need immediate attention.

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MODERATOR SUZANNA HOPPSZALLERN *(American Hospital Association):* **How is your rural hospital/health system using technology and innovation to improve health care access today? What opportunities is your organization interested in pursuing?**

HOLLY McCORMACK *(Cottage Hospital):* We're leaning into artificial intelligence (AI) technology this year to help with clinician retention. Last August, we formed an AI steering committee to vet our first technology. An interdisciplinary team looks at each solution from security to ethics to operations to ensure that we have a comprehensive review prior to installing. I'm the executive sponsor for the team.

Our first toe in the water for AI technology was ambient listening for providers to decrease pajama time documentation. When we went live, early data show that we're going to achieve our goal. Providers have had a few hiccups with it, but they were asking for it and that is a win already when your providers are vested in the process.

GRATIA PITCHER *(Essentia Health):* To enhance the patient experience at Essentia Health, we are introducing ambient listening so our providers can be more engaged and more responsive during patient visits while also reducing time spent on documentation. We have an AI steering committee and a digital health steering committee to help us evaluate opportunities for process improvement that will benefit our colleagues and the patients we serve.

We've partnered with Medica and individual school districts to launch virtual access points in schools. We're planning to roll that out across our system to make it easier and more convenient for adolescents to receive both behavioral health and primary care, while at the same time missing less school. This program also allows parents to join the visit via a three-way call. We continue to learn from our initial in-school clinics so we can scale the process and successfully roll them out in more communities.

JOSIAH WARD *(La Esperanza Clinic):* We're using AI scribe systems, ambient listening and then creating notes. We're looking into another service that will order, searching within our electronic health record (EHR), so augmented intelligence systems are well-utilized. We also offer virtual health services with school-based telehealth.

JEREMY DAVIS *(Grande Ronde Hospital and Clinics):* We launched our AI governance committee and adopted a new strategic plan a few years ago that focused on digital health transformation. We have about 15 providers using ambient listening, and we'll double that this year. It's starting to sweep through the medical staff with how much better it is. One provider commented that he didn't have to do any work over the weekend and was quite impressed.

The other AI solution that we've implemented is triaging inbox messages for key words so that when staff arrive next morning, they know which patients need the most immediate attention. That's been received well.

DOUG WEHRMAN *(Brodstone Healthcare)*: Our electronic steering committee handles data integration and product vetting. We haven't utilized much AI in our organization. Some physicians are piloting ambient listening at our rural health clinic. We're also looking for opportunities within the revenue cycle to help with claims processing.

JEREMY DAVIS | GRAND RONDE HOSPITAL AND CLINICS

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LANDON DYBDAL *(Lake Health District):* We've started to explore options for ambient listening. We're also interested in how we can utilize AI and technology in the revenue cycle.

TERESA MALLETT *(Madison Regional Health System):* After we go live with Epic, we will step into more AI. We have physicians and staff interested and curious about the AI benefits and efficiencies it can provide.

COREY LIVELY *(Great Plains Regional Medical Center):* Right now, we use traditional telehealth in a variety of services. We're in half a dozen schools. We're part of a nationwide teleneonatal intensive care program. We run our 12-bed geriatric psychiatric unit with telehealth and a physician and nurse practitioner on-site for medical issues. We've partnered with a large behavioral health institution to provide telehealth services for behavioral health patients in a secure hold room prior to transfer or release.

We are going through a MEDITECH upgrade and several other implementations before we move into ambient listening and other AI applications.

TRENT BOURLAND *(Cole County General Hospital):* We're exploring AI options for revenue cycle management, ambient listening and within our EHR. We face challenges with some older providers who don't find technology friendly.

DORA ANNE MILLS *(MaineHealth):* We rolled out Copilot about a year ago. The senior executive team became part of the pilot and it was successful. I oversee 300 care team members who do public health work, including our patient education group who use it to produce patient education materials and videos, checking for health literacy.

CARRIE LUTZ *(Holton Community Hospital):* We are vetting a variety of AI options for our providers in enrolled health clinics. Did any of the steering committees find two vendor solutions that were close and how did the resolution come about?

PITCHER: We went through a normal request for proposal process because we're a larger health system and use Community Connect with other community services. When it came to the final decision, we went with an established product used across Essentia versus an additional overlay. Ambient listening has been well-received by our clinicians, and our initial data are promising. Our chief medical informatics officer is one of the clinicians piloting it, and she said she didn't know what to do with her hands during the patient visit because she's so used to being at the computer, and being able to interact without the distraction of a computer is an enriching experience.

MODERATOR: Describe the top barriers you encounter in adopting technology and fostering innovation to improve rural health and health care delivery? What strategies have been successful in overcoming these challenges?

MALLETT: Being an independent critical access hospital, you must figure out where your resources are going and where you're getting them. I believe we already have technological capabilities at our fingertips; however, getting these implemented in a small facility can be difficult due to small staff sizes and most staff wear multiple hats. The return on investment on technology costs should always be at the forefront. Implementing technology that can relieve the work of employees will hopefully increase staff satisfaction, retention and recruitment efforts all while keeping the patient front and center.

COREY LIVELY | GREAT PLAINS REGIONAL MEDICAL CENTER

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LIVELY: Workforce training is another challenge. Recruiting people who are knowledgeable in technology and training is a challenge.

BOURLAND: Our staff wear two or three different hats and finding time for them to sit down and learn a new process or a different service that we want to add is a significant challenge.

McCORMACK: With ambient listening, providers are narrating the visits. If patients are nodding their heads or pointing at something, they have to say that out loud now, which has been different for them. I heard somebody say that AI would dehumanize health care, but I think that it does the opposite; by taking the computer out of the middle, you're now having a face-to-face encounter again.

DAVIS: In our hospital, we get Epic through the Providence Community Connect program. We've leveraged the work that they had done and their stats for ambient listening. For our providers, the biggest conflict has been getting rid of their scribes. They've created a relationship with these scribes.

WARD: We stopped using virtual medical scribes, but it is tough, especially when you develop relationships. Ambient listening is 10% of the cost, which makes a huge difference.

LUTZ: Is anyone using an AI clinical assistant for summaries of a patient's medical record and clinical note documentation? Are you using it in the inpatient setting or clinics as well? Are any of your behavioral health staff using it?

McCORMACK: We started in clinics. We're just not ready for the hospital sites.

WARD: It's built to interface directly with the clinic schedule. When you click on the patient's name, it goes straight into their record. They're working on interfacing with the hospital right now.

LAURA KREOFSKY *(Microsoft):* Is anybody using Findhelp or Unite Us to connect their hospitals and their clinics to community-based organizations? How do you break through resistance to using technology and a new process and build collective community momentum around programs with technologies?

MILLS: We've been using Findhelp to screen our inpatients and outpatients for health-related social needs for years. It's been great because Findhelp is embedded into Epic. When staff are filling out the Epic form of the Centers for Medicare & Medicaid Services questionnaire, they can link quickly to the resources available in the community where the patient resides. One of the challenges is keeping the information current, but we have staff in community health who do a yearly reassessment and make sure that it's up to date.

KREOFSKY: Substance use, mental health challenges and access to care are critical issues for rural communities. It is encouraging to see growing interest in tools like Findhelp and Unite Us, which facilitate service discovery and closed-loop referrals. Leveraging apps, analytics and AI to bridge the gaps among medical care, community-based services and social support is essential. Technology that enables whole-person care can drive better patient outcomes, optimize resource use and foster healthier communities.

MODERATOR: How are technology and AI helping with health improvement and staffing shortages?

MILLS: Our data analytics team uses AI to combine our

HOLLY McCORMACK | COTTAGE HOSPITAL

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public health data with our Epic data to figure out the major health issues among our patients in rural areas.

I'm the principal investigator on a Health Resources and Services Administration rural maternity grant. We've been using AI to help us develop some tools to provide care to both pregnant and perinatal women in rural areas. On the technology front, we're using telehealth, telepsychiatry, perinatal psychiatry virtual care and registered dietician telehealth.

OLIVIA SWEETNAM *(Grace Cottage Family Health and Hospital):* In southern Vermont, we struggle with mental health and substance use. We use telemedicine in behavioral health. We have partnerships with Dartmouth Health on telepsych, teleneuro, pharmacy and a couple other modalities. We plan to partner with the other hospitals in southern Vermont as well as our emergency medical service (EMS) providers on mobile, integrated health programs. We are on Community Works and at the beginning of our journey with AI and we're interested in ambient listening.

TONY TORRES *(Dignity Health Yavapai Regional Medical Center):* In our rural community, affordable workforce housing is a challenge; the cost of living in Prescott, Arizona is higher than in Phoenix. To date most of our innovation in technology is on the hospital side. Along with CommonSpirit Health, we have developed a Virtually Integrated Care model using nurses with at least 10 years of experience. These nurses man a monitor and a camera on our medical-surgical floors; the patient can connect with the virtual nurse via an app on the cellphone or by tapping on the monitor. A virtual nurse will appear on the monitor who has access to the medical record and can assist the patient and/or the bedside nurse. This service compliments the role of the bedside nurse. We have also paired that with a shift of the health care delivery model with a geographically placed team that consists of a hospitalist physician or advanced practice provider, a bedside nurse, a care management person and a pharmacist. As a team, they make patient rounds together in the patient room with the patient also participating. This new model is working well by shortening the length of stay, lowering the opportunity index and improving the overall patient experience. It has also improved the provider experience by improving communication, collaboration and collegiality.

In addition, we have also deployed two mobile apps that patients can access on their cellphones, called CareAdvisor for inpatients and ER Advisor for ED patients. Patients can connect to either of these apps via a QR code that can then connect them to the platform. These connections allow patients to interact with many different hospital services such as viewing their lab and imaging results in real time. They can also follow the scheduling of procedures or treatment plans while in the ED or on the hospital floor. These types of interactions have improved our patient satisfaction scores.

MODERATOR: How is technology being used in your community for behavioral health to prioritize responses and develop prevention and intervention programs?

MELANIE BOYD *(Clark County Hospital):* We have a behavioral health clinic, but we do not provide substance-use counseling there. We offer outpatient behavioral telehealth consults and telepharmacy. We have two other behavioral health clinics in our town and several nearby, but we still can't meet patient de-

LAURA KREOFSKY | MICROSOFT

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mand. Our children are really underserved, and it is difficult to find counselors for children.

TORRES: As a hospital organization, we are not able to provide behavioral health services in the hospital. We partner with other organizations in the community for inpatient and outpatient behavioral services. Our local behavioral organization has three inpatient sites with a total of about 36 beds. We also have a program with our local sheriff's department that has a crisis unit within the local jail whereby a person who has not committed a crime is brought in for an emergency mental health evaluation and appropriate disposition. The sheriff's department, when appropriate, will partner with local community behavioral health providers for inpatient or outpatient services, and partners with our local hospital for ED patients when a medical condition is complicated with a behavioral health issue.

For patients with substance-use disorders, both of our hospitals and our clinics are connected on the same EHR and can identify doctor-shopping issues across the continuum of the organization. When patients come to the ED, we have created a system and a committee to review patients that have chronic substance recidivism and doctor shop. We can see where they are getting prescriptions for opioids and try to break the cycle by referring these patients to an on-call behavioral health person for real-time intervention. This is an example of how we work with our local behavioral health partners to get these patients referred to a diversion and or a recovery program.

In our community, staffing shortages in behavioral health are more severe than for primary care or specialty physicians. Our local behavioral health partners are becoming more dependent on smartphone and/or computer-based behavioral health apps because they are unable to recruit or retain an adequate number of behavioral health providers.

LUTZ: I'm interested in the learnings and feedback for treating substance-use disorders. We're the only provider for this service in our rural health clinics in the community, and we do not have any Federally Qualified Health Centers (FQHCs) nearby. We work closely with our mental health centers, but there's no substance-use disorder treatment available. There's a perceived huge need. We received a grant and have dedicated funds to train two of our providers who want to treat substance-use disorder in our community. A core group of people meet every other week, setting goals to start offering substance-use disorder treatment this year, while obtaining the necessary training.

WARD: We started a task force with the FQHCs, hospitals and rehab centers to work on controlled substance pain management strategies.

MILLS: With our rural maternity grant, we've developed a telepsych hub for perinatal patients in Maine. Mental health was by far the biggest health issue among rural women in the reproductive age group. We have an epidemic around this country of youth anxiety and depression. Women are coming into pregnancy with a lot of existing anxiety and/or depression, and then pregnancy triggers more of it. The staff — the perinatal psychiatrist, psychiatric nurse practitioner and clinical social worker — are part of our telehealth hub; they all live in other states and are licensed in Maine.

MODERATOR: Is anyone using data and analytics to justify training and staffing investments?

TONY TORRES | DIGNITY HEALTH YAVAPAI REGIONAL MEDICAL CENTER

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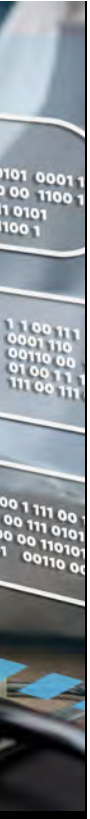

MILLS: The analytics we've been using on the resources we provide patients who screen positive for health-related social needs have been extremely valuable. We've been able to show a significant reduction in ED visits and readmissions when patients who screen positive for health-related social needs are assigned to a community health worker and use that referral. That has helped us make the case for more community health workers. If we didn't have the data analytics people to do that, it would've been tough to do. Now, the social workers are interested in analytics because they also want to show that their work is effective.

TORRES: We are kicking off a new program training nonclinic persons as community health workers. These individuals will be attending Arizona State University and undergo a training program with eventual certification through a program supported by a federal grant. Upon completion, we will be able to send these individuals into our communities to visit those suffering from lack of access to health care due to the effect of health-related social needs.

DAVIS: We added Epic's Compass Rose module to track health-related social needs, enrollment in community-based programs and outcomes.

Our vision is to chip away at population health and social determinants, knowing that with our resource constraints, it's going to be one day at a time.

MODERATOR: What practical insights and actions can drive rural residents' health priorities and organization leaders' strategic imperatives in supporting the community and the local economy?

McCORMACK: Communicating and committing to a vision and having it in the strategic plan is important for the hospital. We focus on educating the community. When you use ambient AI in your rural clinic, it's important to educate both your patients and the community as to what that means: What happens with their data? Are we sharing it? Is it stored anywhere? We speak at our local Chamber of Commerce meetings about what we're doing, not just within our own walls, but the big picture.

WILLIAM (BILL) WEEKS *(Microsoft):* Rural hospitals serve as the economic powerhouses of their communities. When they close, the impact on these areas is devastating. I envision a revitalization of rural America, led by rural hospitals embracing advanced technologies, establishing AI skilling centers in partnership with local educational systems, and creating direct and indirect jobs that leverage these innovations. Most importantly, these hospitals will deliver world-class health care, fostering community engagement and supporting care and aging at home.

DAVIS: Our providers have, as part of their contract, quality incentives. In most places I've worked, it's typically a base salary, then production. We have a base salary and quality incentives.

WEEKS: How does that look? Do they have to hit certain quality metrics? Does that help with recruitment and retention?

DAVIS: Depending on the specialty, we look for three, four or five measures that we can measure in Epic or some other means; they're evidence-based and reasonable. We partner with our providers to find out what's

DORA ANNE MILLS | MAINE HEALTH

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important to them. We found that this helped with provider retention and recruitment. I'm seeing physician recruitment firms and more organizations looking toward quality incentives and moving away from production, especially rural. As we head toward value and population health, providers are rewarded for the quality of the care they provide, not the quantity. We've found that this balance excites most of our providers.

TORRES: Every three years we conduct a community health needs assessment. In our most recent report, our top four concerns are: poor access to health care, lack of primary and specialty care providers, high cost of care and lack of behavioral health services. Over the next three years, our focus will be on these topics through financial support of preventive and educational services throughout our communities.

Primary care and cardiology are probably our biggest challenges right now, followed by orthopedics. Our physicians are aging out, mostly in primary care. We are actively recruiting and have had general success in recruitment and retention with younger doctors and surgeons and are seeing the number of advanced practice practitioners go up.

MILLS: In our community health needs assessment, mental health is a major priority. As we implement strategies across the communities to improve the overall emotional mental health of the population, we know we're not going to have enough therapists for everybody and we're using programs like MindUP, Mental Health First Aid and Youth Mental Health First Aid. About 10 people across the system are trained in these programs and are educating staff in schools and community settings. Our population health efforts in behavioral health and direct care services use technology and are often virtual because we're primarily rural.

We have a zero-suicide grant from the Substance Abuse and Mental Health Services Administration and we've been implementing suicide prevention training with care team members in the system. Now, we're going out to the public and providing a one-hour virtual training not only on how to recognize the warning signs of suicide, but also to provide support.

LUTZ: During our most recent community health needs assessment, chronic disease management emerged as one of the top-priority issues for the first time. Mental health is No. 1 and has been No.1 for the last nine years. Substance-use disorder was third, obesity second, and fourth was chronic care management and diseases within our community. We've targeted to offer classes to the community on how to eat more healthfully, conducted by a medical person, a diabetic educator and a local chef.

WEHRMAN: In our community, eldercare and access to resources and transportation are concerns. Older adults may face challenges in accessing and using technology. Getting easy-to-use technology has been difficult, but where we are able to we are having staff teach them while they are in our facility so they can use the technology at home. Access to cellular service or reliable internet service is also an issue in some parts of our service area. Supporting improved infrastructure to increase connectivity will hopefully improve access for those individuals who have difficulty accessing health care services.

WILLIAM (BILL) WEEKS | MICROSOFT

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