INFUSING INNOVATION AND STRATEGY IN RURAL HEALTH

10th Annual Michigan Critical Access Hospital Conference

Lansing, Michigan November 9th and 10th, 2023

DISCLAIMER

This presentation is presented with the understanding that the information contained does not constitute legal, accounting or other professional advice. It is not intended to be responsive to any individual situation or concerns, as the contents of this presentation are intended for general information purposes only. Viewers are urged not to act upon the information contained in this presentation without first consulting competent legal, accounting or other professional advice regarding implications of a particular factual situation. Questions and additional information can be submitted to your Eide Bailly representative, or to the presenter of this session.

ROCHELLE DAHMEN, CSBI

Rochelle is a Healthcare Director at Eide Bailly . She has more than 20 years of healthcare experience, including more than three years at Blue Cross Blue Shield of Minnesota and more than 17 years working in multiple health care organizations across the country. Specializing in revenue cycle and technology implementations, she has assisted health systems throughout the country with denials management, chargemaster assessments, compliance reviews, charge capture improvements, as well as electronic health record implementations, conversions and optimizations. Rochelle brings strong analytical skills and a thorough understanding of the revenue cycle that allow her to quickly identify issues and create solutions to improve revenue cycle performance.

AGENDA

- The Current State of Rural Healthcare
- Leveraging Technology in Rural Healthcare
- Future Trends and Emerging Technologies
- Challenges and Roadblocks
- Call to Action

EideBailly®

THE CURRENT STATE OF RURAL HEALTHCARE

RURAL AMERICANS FACE NUMEROUS HEALTH DISPARITIES COMPARED TO THEIR URBAN COUNTERPARTS

Rural Americans are more likely to die from heart disease, cancer, unintentional injury, chronic lower respiratory disease, and stroke than their urban counterparts.

Unintentional injury deaths are approximately 50 percent higher in rural areas than in urban areas, partly due to greater risk of death from motor vehicle crashes and opioid overdoses.

Children in rural areas also face challenges. A recent CDC study finds that children in rural areas with mental, behavioral, and developmental disorders face more community and family challenges than children in urban areas with the same disorders.

Rural Americans tend to have higher rates of cigarette smoking, high blood pressure, and obesity. Rural residents report less leisure-time physical activity and lower seatbelt use than their urban counterparts. They also have higher rates of poverty, less access to healthcare, and are less likely to have health insurance.

All of these factors can lead to poor health outcomes

Centers for Disease Control and Prevention, "About Rural Health", May 9, 2023
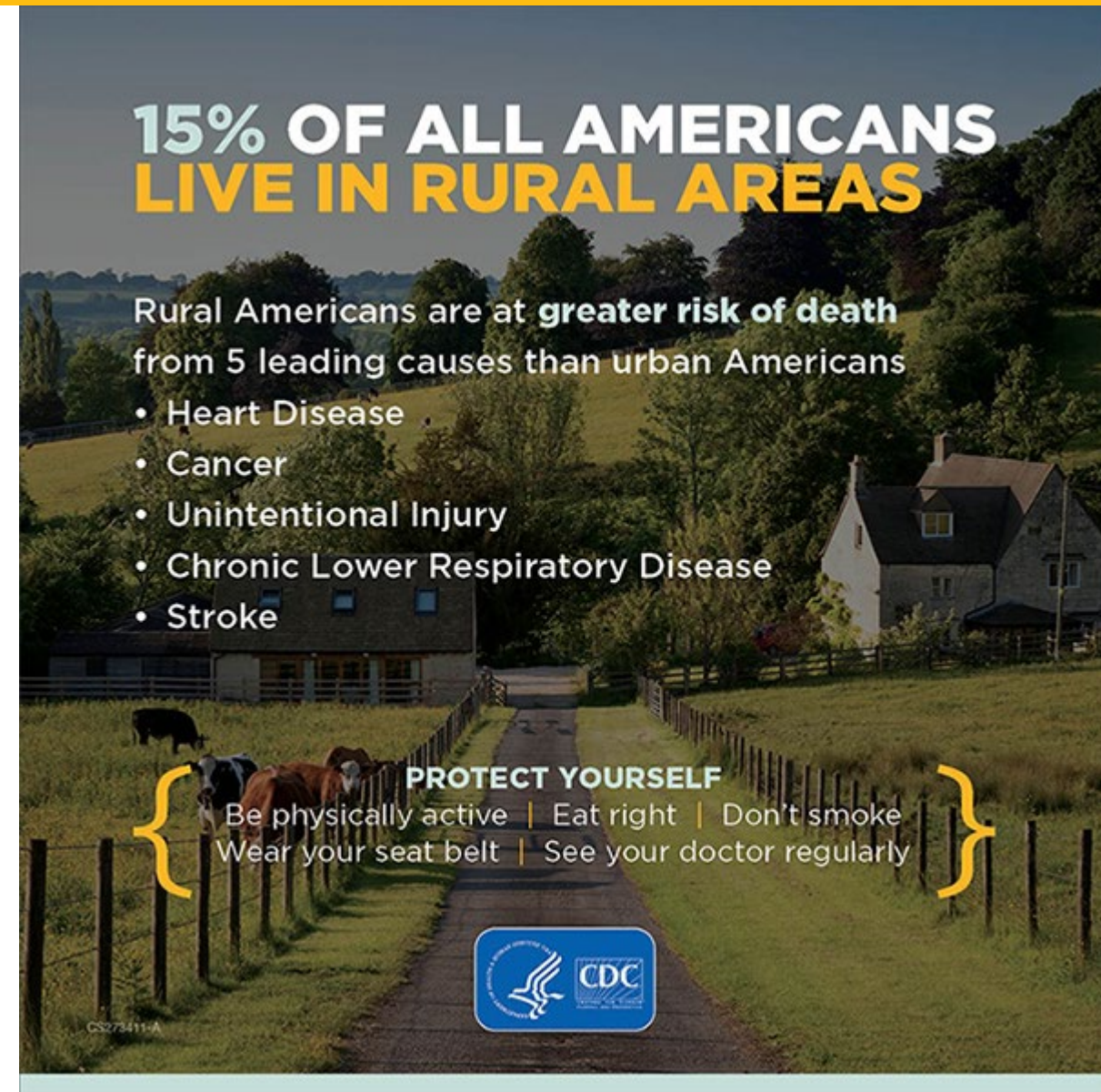
WHY HEALTHCARE IS HARDER TO ACCESS IN RURAL AMERICA

Many rural residents are seeing their local hospital close. More than 100 (or 4% of) rural hospitals closed from 2013 through 2020. As a result, residents had to travel about 20 miles farther for common services like inpatient care, and 40 miles farther

Inpatient care

3.4 miles

23.9 miles
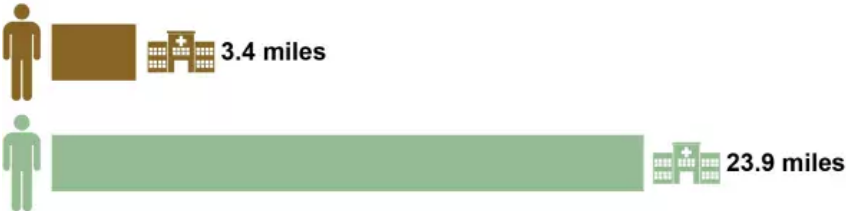
Alcohol or drug misuse treatment

5.5 miles

44.6 miles

Distance in miles between patient and hospital...

...before closure (2012)   ...after closure (2018)

Source: GAO analysis of data from the Department of Health and Human Services and North Carolina Rural Health Research Program; GAO (illustrations). | GAO-21-93

EideBailly®

U.S. Government of Accountability Office, "Why Health Care is Harder to Access in Rural America", May 16th, 2023

PHYSICIANS ARE MORE LIKELY TO LOCATE IN AN AREA THEY TRAIN CREATING A SHORTAGE IN RURAL AREAS

Most U.S. medical schools and residencies are located in urban and suburban areas, resulting in fewer physicians choosing to locate in rural settings.

99 percent of residencies are located in urban or suburban areas, and thus even those interested in rural practice may feel inadequately prepared for the challenges of working in rural communities.

Students in rural settings may have fewer opportunities to receive the prerequisite math and science courses in undergraduate education curriculums that prepare them for medical school.

Per Capita Rates of Health Professionals – Selected Occupations

Occupation	Health professionals per 10K, Rural	Health professionals per 10K, Urban
Dentists	4.7	7.6
Registered Nurses	63.9	95.3
Licensed Practical Nurses/Licensed Vocational Nurses	21.8	18.4
Physician Assistants	3.3	5.1
Physicians (MDs)	10.9	31.7
Physicians (DOs)	1.8	2.4
Primary Care Physicians	5.2	8.0
Total Physicians	12.7	33.6
Nurse Practitioners	8.4	10.4
Total Advanced Practice Registered Nurses	10.0	12.7
Nurse Anesthetists	1.3	1.8

Physician data, 2020. Data for all other professions, 2021. (Source: HRSA Area Health Resources Files, 2021-2022.)

EideBailly®

LEVERAGING TECHNOLOGY IN RURAL HEALTHCARE

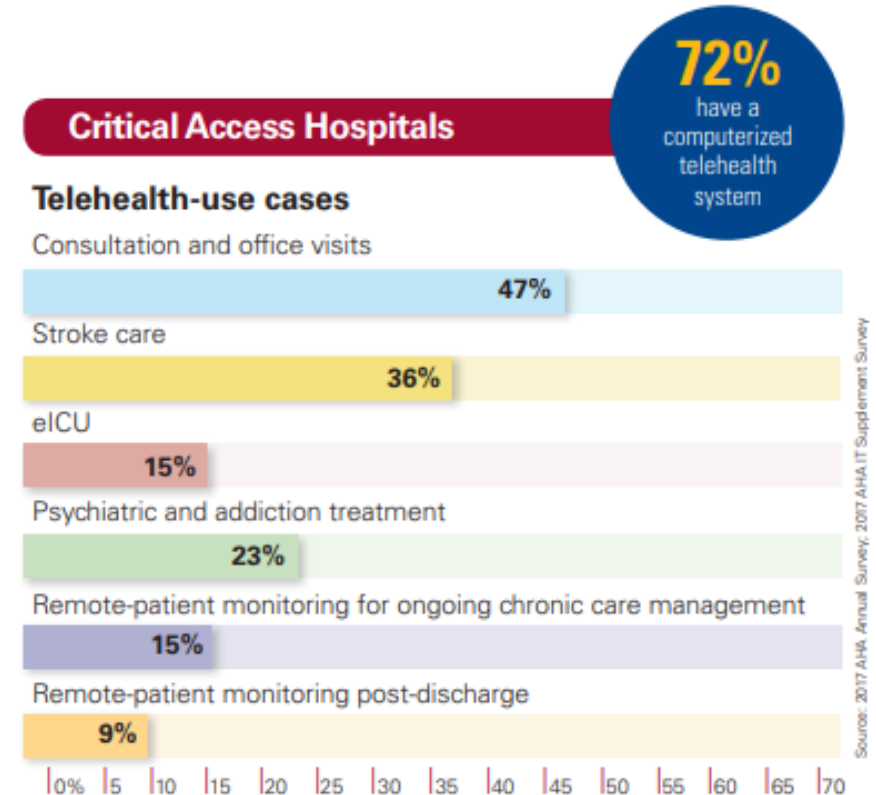# HOW PATIENTS EXPERIENCE HEALTH CARE IS SHIFTING

Care that used to take place only in brick-and-mortar settings can now occur digitally. Accordingly, hospitals and health systems are exploring a variety of virtual care models, many of which are underpinned by telehealth technology.

Recent years have seen significant growth in the use of telehealth, to the point where more than half of U.S. hospitals connect with patients and consulting practitioners through the use of video and other technology.
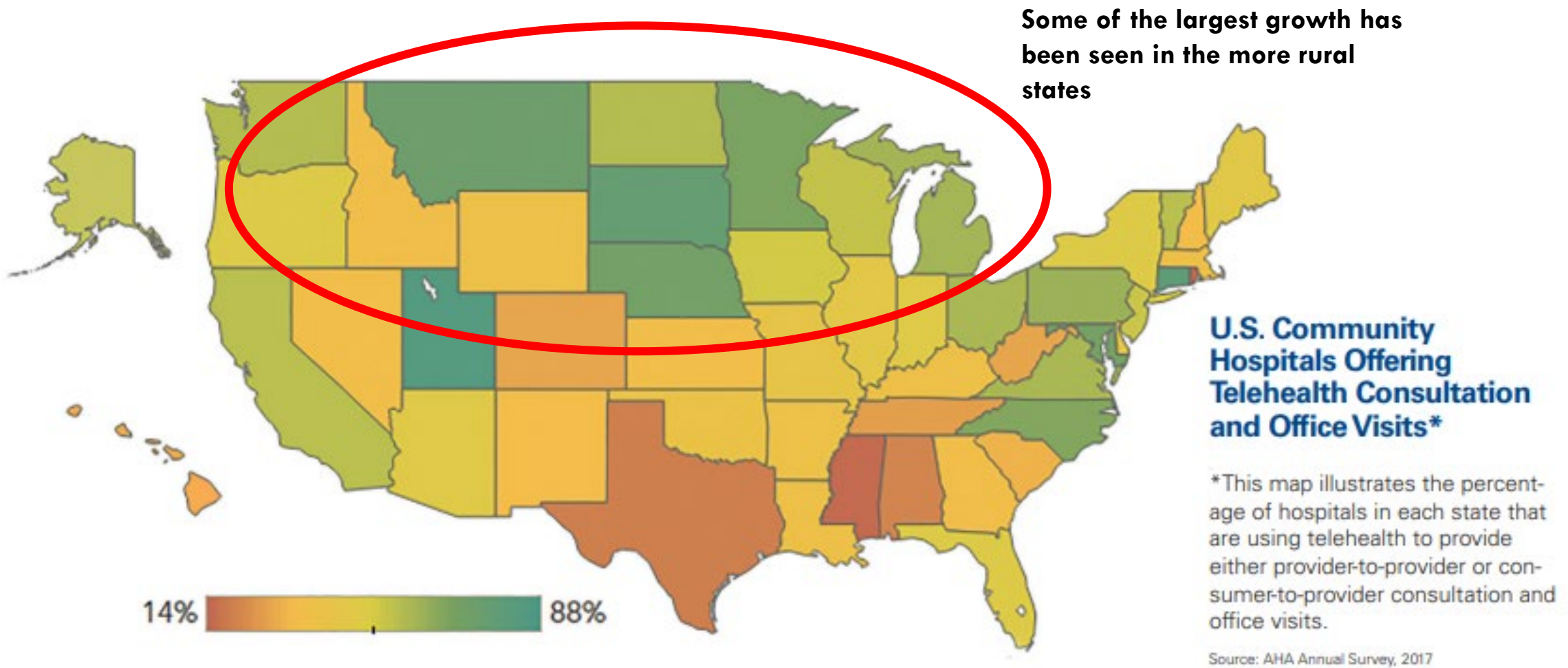
Telehealth is a smart way to leverage finite health care resources as demands for health care services increase.

Hospitals and health systems that are working now to increase the maturity of their telehealth capabilities will be well-positioned to meet patient demands for digital tools that allow them to conveniently engage in care.
Hospitals that don't address these expectations increasingly will be challenged by new market entrants and other disruptors that seek to attract new health care consumers and encroach on existing patient-provider relationships.

Critical Access Hospitals

72% have a computerized telehealth system

Telehealth-use cases

Consultation and office visits — 47%
Stroke care — 36%
eICU — 15%
Psychiatric and addiction treatment — 23%
Remote-patient monitoring for ongoing chronic care management — 15%
Remote-patient monitoring post-discharge — 9%

0% 5 10 15 20 25 30 35 40 45 50 55 60 65 70

Source: 2017 AHA, Annual Survey; 2017 AHA IT Supplement Survey

EideBailly®

THE GROWTH OF TELEHEALTH IN U.S. HOSPITALS AND HEALTH SYSTEMS

Some of the largest growth has been seen in the more rural states

U.S. Community Hospitals Offering Telehealth Consultation and Office Visits*

*This map illustrates the percentage of hospitals in each state that are using telehealth to provide either provider-to-provider or consumer-to-provider consultation and office visits.

14% 88%

Source: AHA Annual Survey, 2017

EideBailly®

IOT REMOTE MONITORING ENABLES REAL-TIME MONITORING OF PATIENTS' VITAL SIGNS AND HEALTH DATA

The Internet of Things (IoT) has brought about a revolution in the field of technology and has significantly impacted various industries and revolutionized healthcare. According to the National Library of Medicine (NIH), IoT have improved health service delivery.

IoT in healthcare refers to the **use of connected devices and sensors** to collect and exchange data that can be used to improve patient care. The data collected by these devices is transmitted to healthcare providers for analysis and decision-making.

IoT remote monitoring is also an application of IoT technology that has transformed the way remote patient monitoring is carried out.

Examples include:
- Glucose monitoring
- Heart rate monitors
- Depression and mood monitoring
- Parkinson's disease monitoring
- Connected inhalers
- Ingestible sensors
- Robotic surgery

EideBailly®

BENEFITS OF IOT IN REMOTE PATIENT MONITORING

Benefits of IoT in Healthcare:

Alerting primary providers about the treatments & medications prescribed to patients

Accessing 'patient data' and providing accurate real-time diagnosis & treatment

Using vitals monitoring health devices, personal fitness devices, as well as platforms to reduce the frequency of doctor visits through personal monitoring

2025

Grand View Research – "Monitoring the growth of internet of things in healthcare market", Nov 30, 2020

EideBailly®

REMOTE PATIENT MONITORING HELPS RURAL PATIENTS RECOVER AT HOME – CASE STUDY

A new program through Essentia Health, a health system across Minnesota, North Dakota, and Wisconsin, allows patients to be monitored at home when they need medical attention but don't need to be hospitalized.

Patients enrolled in the Remote Patient Monitoring (RPM) program receive a tablet — to video-call with providers and complete questionnaires about their symptoms — and equipment like blood pressure cuffs and pulse oximeters that immediately transmit patients' vitals back to Essentia. The program began with COVID-19 patients but is branching out to monitor patients with diabetes and congestive heart failure, among other chronic conditions.

REMOTE PATIENT MONITORING HELPS RURAL PATIENTS RECOVER AT HOME – CASE STUDY

The tablets that patients use in the program don't need internet access, but the tablets do need a cell signal to function. Christie Erickson, DNP, Director of APRN/PA Services, added that patients don't need to be "tech-savvy" to use the tablets, which include stickers to indicate the on/off button and charging port.

Patients who qualified for RPM were monitored in a central location. If a patient's questionnaire answers or vital signs fall outside the normal range, the Nurse Care Line — Essentia Health's 24/7 nurse triage service — calls the patient. Patients can also call the Nurse Care Line with any concerns or issues.

Joseph Bianco, MD, a family practice physician in rural Ely, Minnesota, offers an additional perspective.

He said that hospitals are not always safe places for patients, especially older adults who are frail. But these same patients also might not be safe if they're sent home, especially if no one's there to look after them. A program like Remote Patient Monitoring allows patients to sleep in their own beds and eat their own food, he added.

EideBailly®

REMOTE PATIENT MONITORING HELPS RURAL PATIENTS RECOVER AT HOME – CASE STUDY

By February 2021, Essentia Health had 39 sites offering this monitoring technology.

At the peak of these services, **Essentia had conducted 600 tele-visits through the Remote Patient Monitoring program and was monitoring up to 40 patients at any given time.**

87% of enrolled patients had no emergency department (ED) visits, a finding which suggests "the success of the inclusion criteria," especially for a pilot program like this.

Analysis also revealed that about **50% of the monitoring units were ordered in an ED,** a finding that translates into avoided hospital admissions. In addition to ED providers, primary care providers can order these RPM monitoring units as well.
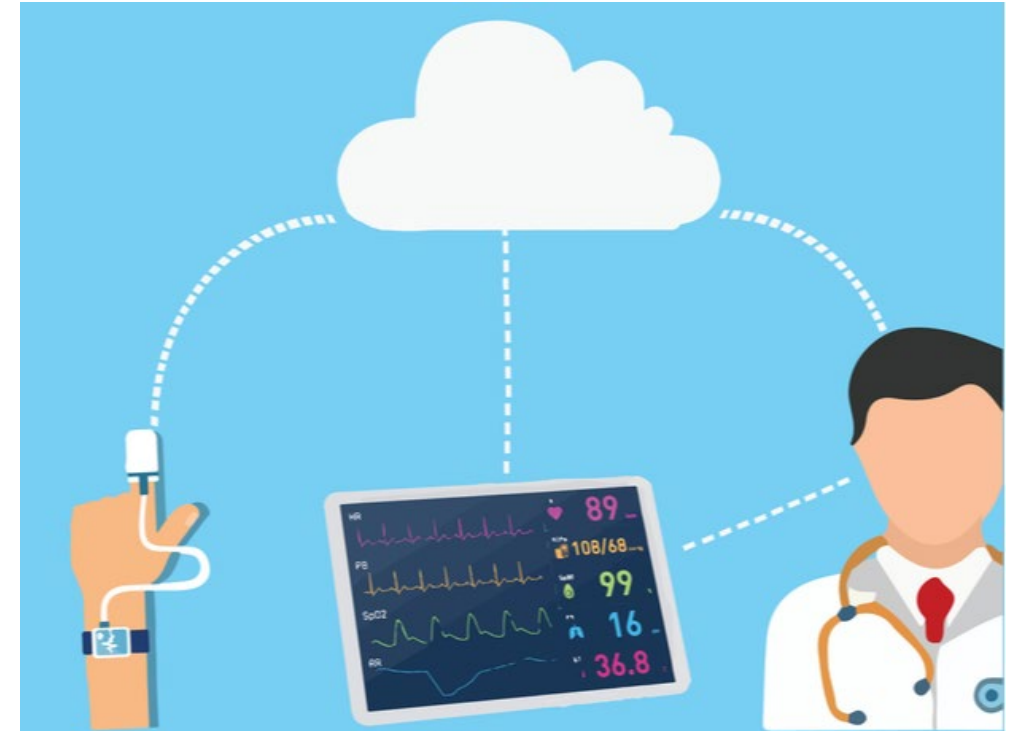
WORKING SMARTER NOT HARDER IS IMPERATIVE

Another way health systems are innovating is by making everyday tasks such as EHR documentation easier for their clinicians.

Honolulu-based Hawaii Pacific Health found that its **staff spent 1,700 nursing hours per month on documenting within the EHR.** This prompted the hospital to implement a new initiative dubbed "Get Rid of Stupid Stuff" that aimed to create simple fixes to tasks within the EHR that clinicians felt were poorly designed, unnecessary or nonsensical.

The initiative, implemented in 2017, started by getting staff to write down anything within the EHR that was taxing, and in the end, Hawaii Pacific received 200 suggestions.

The suggestions were worked on by two teams — the "Get Rid of Stupid Stuff" team and the EHR working groups. The EHR working groups handled more complex fixes to the EHR while the "stupid stuff" team handled simple fixes.

The initiative resulted in saving staff at Hawaii Pacific thousands of hours.
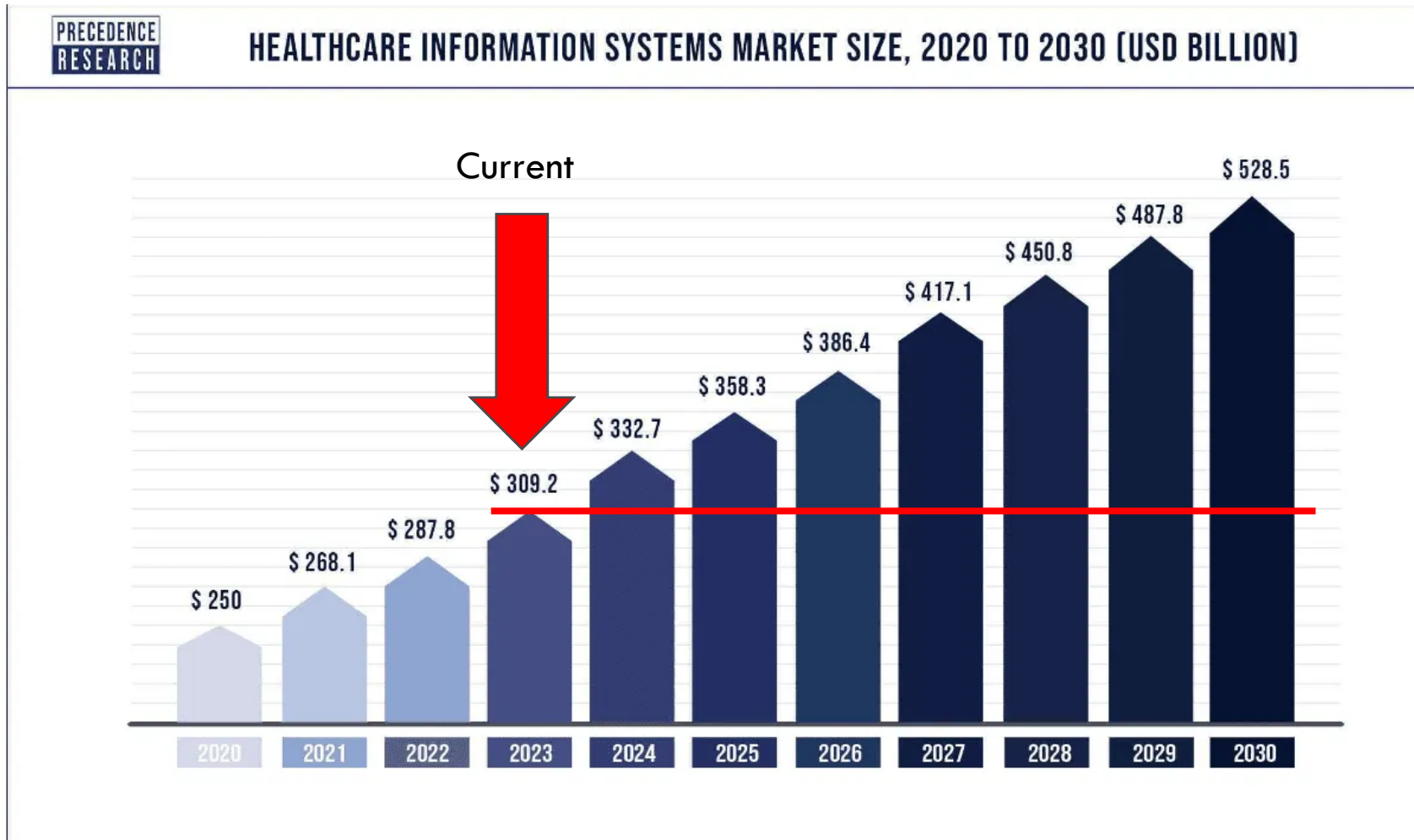
EideBailly®

FUTURE TRENDS AND EMERGING TECHNOLOGY

THE FUTURE OF HEALTHCARE IS NOW

Imagine a patient walking into a clinic, and within moments, the doctor retrieves their medical history from around the globe and is armed with tailored treatment options. Nearby, a robotic assistant performs a delicate surgery with unerring precision. Meanwhile, a hospital administrator browses an intelligent dashboard, using predictive analytics to optimize resources for the next wave of patients……..

…… This is not a sci-fi movie – this is the healthcare of the nearest future, where technology and medicine are merging in unprecedented ways. What's exciting is that 2023 is already shaping up to be a treasure trove of innovation in healthcare. With the market booming, set to hit **$58.23 billion by year-end**, the competition is fierce as healthcare organizations are keen on getting a piece of the technology pie.

GLOBAL MARKET FOR HEALTHCARE IT IS SKYROCKETING

PRECEDENCE RESEARCH

HEALTHCARE INFORMATION SYSTEMS MARKET SIZE, 2020 TO 2030 (USD BILLION)

Current

- $ 250 — 2020
- $ 268.1 — 2021
- $ 287.8 — 2022
- $ 309.2 — 2023
- $ 332.7 — 2024
- $ 358.3 — 2025
- $ 386.4 — 2026
- $ 417.1 — 2027
- $ 450.8 — 2028
- $ 487.8 — 2029
- $ 528.5 — 2030

According to Precedence Research, the global market for healthcare information systems, which was already a colossal $287.8 billion in 2022, is expected to rocket to an astonishing $528.5 billion by 2030.

EideBailly

EHR AND INTEROPERABILITY TO ADDRESS ISSUES IN SEAMLESS DATA SHARING

Healthcare stakeholders have largely achieved the goal of converting clinical and administrative information into digital formats through the wide-scale implementation of electronic health records (EHRs). However, the ability to share semantically interoperable electronic health information (EHI) among organizations, patients, payers, and other stakeholders has remained limited.

The interoperability landscape is moving quickly. It will be essential to maintain awareness of legislation, standards, and best practices in managing and governing the swelling tsunami of information.

Physicians recognize the importance of having the right information at the right time.

86% think better data interoperability would significantly cut time to diagnosis.
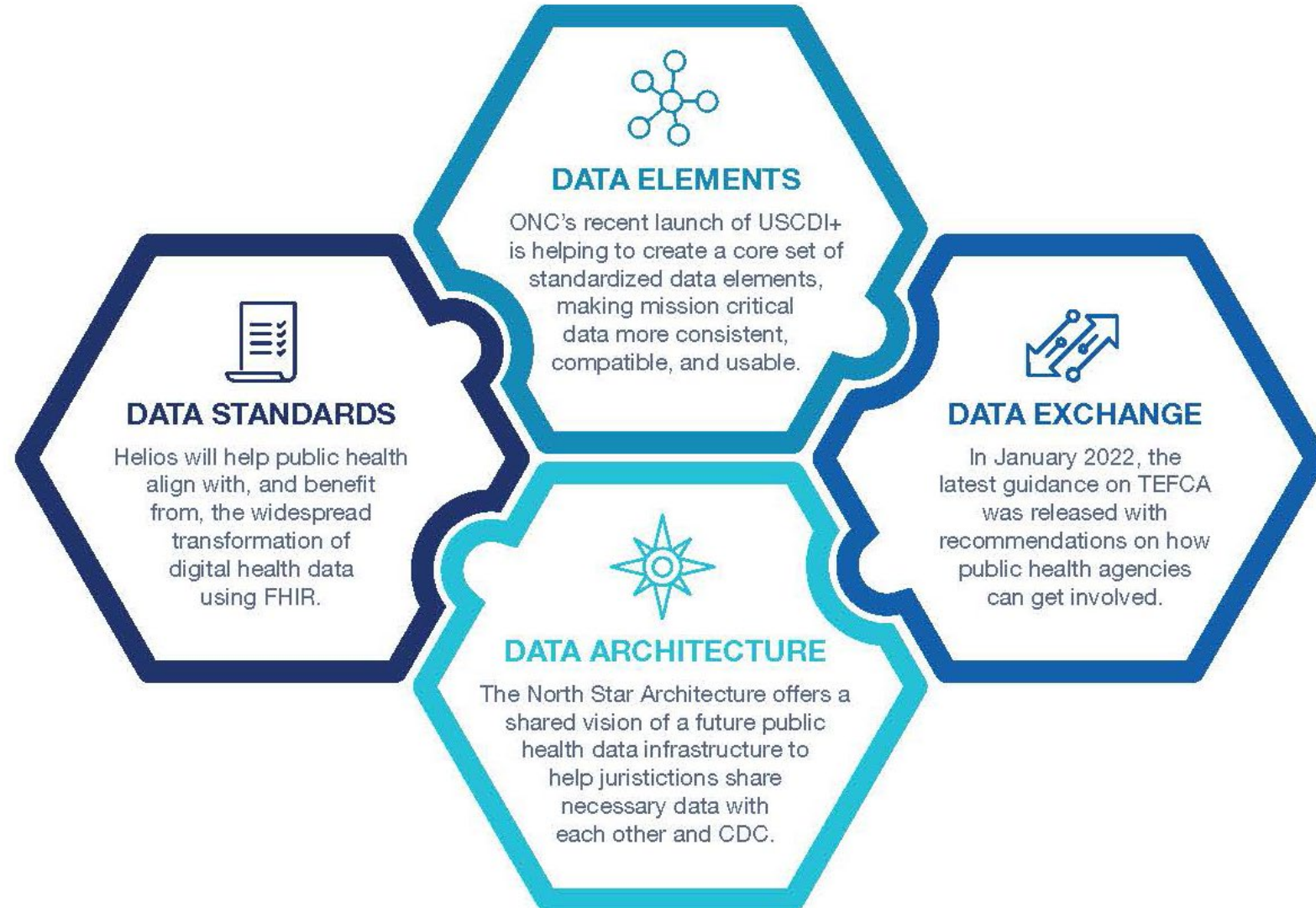
95% say increased data interoperability will improve patient outcomes.

96% agree that easier access to critical data can save lives.

INTEROPERABILITY: SOLVING THE PUZZLE OF DATA ACCESS AND EXCHANGE

DATA ELEMENTS

ONC's recent launch of USCDI+ is helping to create a core set of standardized data elements, making mission critical data more consistent, compatible, and usable.

DATA STANDARDS

Helios will help public health align with, and benefit from, the widespread transformation of digital health data using FHIR.

DATA EXCHANGE

In January 2022, the latest guidance on TEFCA was released with recommendations on how public health agencies can get involved.

DATA ARCHITECTURE

The North Star Architecture offers a shared vision of a future public health data infrastructure to help juristictions share necessary data with each other and CDC.

Centers for Disease Control and Prevention, Office of Public Health Data, Surveillance, and Technology

EideBailly®

ADDRESSING WORKFORCE SHORTAGES WITH WORKFLOW AUTOMATION AND AI

Staffing is healthcare leaders' top concern, according to the Philips Future Health Index 2022 report. If we don't act urgently, burnout and staffing shortages will continue to weaken healthcare systems.

For example, in radiology, studies have shown **at least half** of practicing radiologists in the US experience chronic work-related exhaustion and reduced efficacy.

In nursing, we can expect an estimated **global shortfall of 13 million** nurses by 2030.

Compounding the stress and strain, healthcare professionals now face a backlog of routine treatments set aside during the pandemic. Given these workforce challenges, we will see healthcare providers leverage automation, enabled by AI, to increase efficiencies and augment the capabilities of staff.

EideBailly®

ROBOTIC PROCESS AUTOMATION IN HEALTHCARE

One of the answers to the workforce shortage issue is Robotic Process Automation (RPA) in healthcare. It's intelligent software which mimics repetitive human actions. RPA virtually performs programmed, structured tasks instead of employees.

According to statistics published by Gartner, 50% of healthcare organizations are ready to invest in Robotic Process Automation (RPA) in the next three years.

Robotic process automation(RPA) tools

Administration

EHR/EMR

Call center

HR

RPA tools

Insurance claims

Customer support

Finance

Sales Department

# DIGITAL UPSKILLING THROUGH CONTINUOUS TRAINING AND EDUCATION

The years ahead will therefore see a growing demand for 'education as a service', supporting ongoing education and continuous learning as the pace of digital transformation in healthcare further accelerates.

Healthcare professionals increasingly expect learning experiences to be on-demand and tailored to their needs. In 2023 we will continue to see a rise of blended learning methods, combining the best of in-person training with self-directed online learning – from self-paced tutorials such as e-learning, webinars, and gamification to more advanced delivery methods, such as augmented reality and virtual reality.

In addition, hospitals can drive proficient use of new and existing technologies by appointing 'super users' who act as early adopters and ambassadors that other staff members can turn to when they have questions or need help.

ENABLING REMOTE OPERATIONS THROUGH VIRTUAL COLLABORATION

Another way of empowering staff through technology is by **enabling remote guidance from more experienced colleagues using virtual collaboration.** It's one of many healthcare technology trends that was accelerated by the pandemic, and it's now becoming a mainstay as qualified and experienced staff are in increasingly short supply – especially in smaller satellite locations.
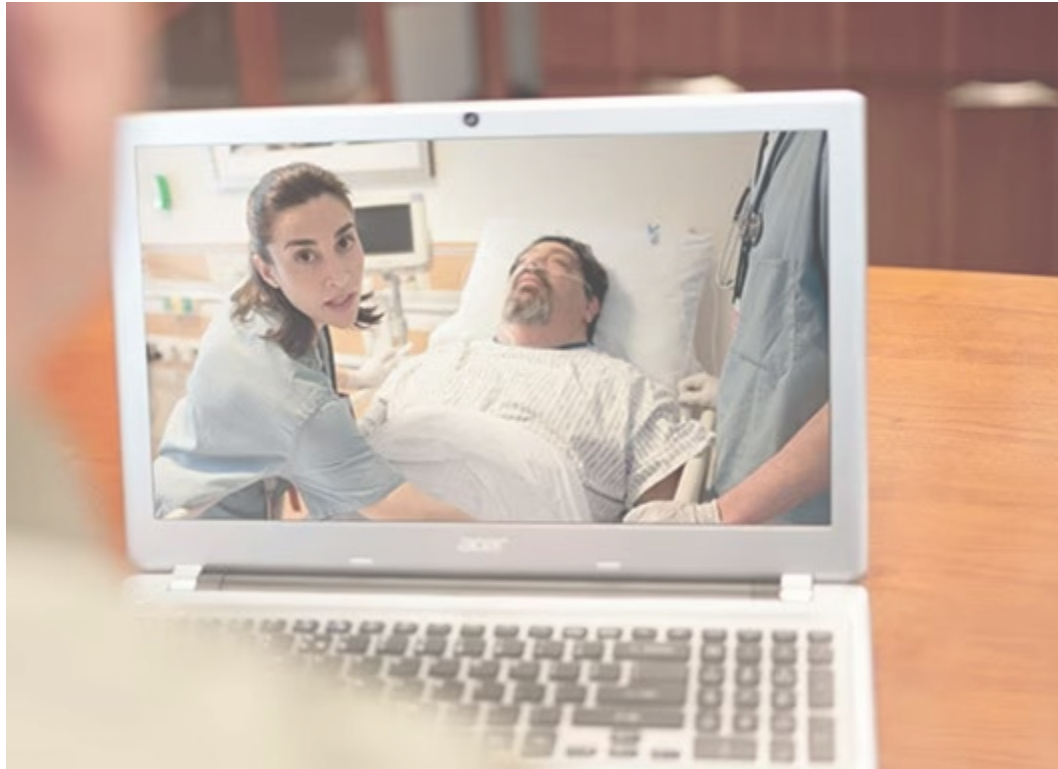
Remote collaboration is also showing its value in other medical settings, such as acute care. **Tele-ICU programs extend critical care resources to the bedside via technology,** independent of the health facility's location. An intensivist-led team in a central facility can monitor up to 500 remote ICU beds to support care teams on-site, combining audio-visual technology, predictive analytics and data visualization to help ensure that patients get specific attention when they need it. Similarly, in stroke care, where every second counts, emergency care clinicians can provide virtual guidance to their peers at rural or underequipped facilities to aid clinical decision-making for improved patient outcomes.

EideBailly®

HEALTHCARE CONTINUES TO MOVE TO THE CLOUD

The cloud is another critical technological enabler for creating truly connected and integrated IT infrastructures in healthcare. Such infrastructures need to be highly secure and highly scalable, allowing healthcare providers to rapidly adapt to fluctuating demand without having to worry about data security. Cloud adoption in healthcare has traditionally lagged behind. However, in recent **years we have seen fast-growing acceptance and adoption in many parts of the world – a trend we expect to continue in 2023.** In tandem, we will see a further proliferation of software-as-a-service (SaaS) solutions delivered through the cloud.

In addition, healthcare-compliant cloud platforms offer a flexible foundation for rapid development and testing of new digital applications. Cross-functional teams working in short and agile cycles can put new digital applications into the hands of physicians or patients more quickly, and then add new or improved features as they collect further user feedback. That means healthcare organizations get to innovate faster and in smaller, more digestible increments

EideBailly®

CHALLENGES AND ROADBLOCKS

INNOVATING IN RURAL HEALTHCARE CAN BE PARTICULARLY CHALLENGING DUE TO VARIOUS UNIQUE FACTORS AND CONSTRAINTS

- **Limited Resources:** Rural healthcare facilities often have smaller budgets, fewer staff, and less access to cutting-edge technology and infrastructure. This can hinder their ability to invest in and adopt innovative solutions.

- **Workforce Shortages:** Attracting and retaining healthcare professionals in rural areas is a significant challenge. The shortage of physicians, nurses, and other healthcare workers can limit the implementation of advanced healthcare practices.

- **Connectivity and Infrastructure:** Many rural areas lack reliable internet connectivity and infrastructure. This is a significant barrier to implementing telehealth and other digital healthcare solutions.

EideBailly®

INNOVATING IN RURAL HEALTHCARE CAN BE PARTICULARLY CHALLENGING DUE TO VARIOUS UNIQUE FACTORS AND CONSTRAINTS

- **Patient Demographics:** Rural populations can be older and less tech-savvy, which may affect the adoption of digital health solutions. Additionally, limited health literacy in some rural areas can be a barrier to patient engagement.

- **Geographic Isolation:** The remote location of many rural healthcare facilities can lead to difficulties in accessing care, especially in emergencies. Air or ground transportation may be required for critical cases, causing delays.

- **Economic Challenges:** Rural communities often face economic challenges, including a lack of job opportunities and low income levels. These economic factors can affect the ability of residents to afford healthcare services.

INNOVATING IN RURAL HEALTHCARE CAN BE PARTICULARLY CHALLENGING DUE TO VARIOUS UNIQUE FACTORS AND CONSTRAINTS

- **Cultural and Societal Factors**: Rural communities may have unique cultural and social norms that impact healthcare delivery. Understanding and respecting these factors are important for successful innovation.

- **Resistance to Change**: Healthcare providers and communities may be resistant to change and new technologies, particularly if they have a strong attachment to traditional healthcare practices.

- **Data Security and Privacy:** Rural healthcare providers must adhere to strict data security and privacy regulations, which can be challenging with limited resources for cybersecurity measures.

EideBailly®

CALL TO ACTION

STEPS TOWARD INFUSING INNOVATION INTO RURAL HEALTHCARE

- **Advocate for Policy Changes:** Encourage healthcare professionals and organizations to actively engage with local, state, and federal policymakers to advocate for policies that support rural healthcare innovation, including funding for telehealth, workforce development, and infrastructure improvement.

- **Invest in Telehealth Infrastructure:** Call on healthcare organizations to invest in telehealth infrastructure, ensuring reliable internet connectivity and providing training for healthcare providers to effectively utilize telehealth technologies.

- **Promote Telehealth Awareness:** Advocate for public awareness campaigns to educate rural communities about the benefits of telehealth and encourage its use for routine and preventative healthcare.

- **Leverage Telemedicine for Specialty Care:** Promote the use of telemedicine to connect rural patients with specialist consultations, ensuring they receive the necessary care without traveling long distances.

STEPS TOWARD INFUSING INNOVATION INTO RURAL HEALTHCARE

- **Build Community Partnerships:** Encourage rural healthcare facilities to build partnerships with local community organizations, schools, and businesses to improve health literacy, provide outreach programs, and address social determinants of health.

- **Implement Data Analytics and Population Health Management**: Encourage rural healthcare providers to implement data analytics and population health management tools to identify health trends and develop targeted interventions for the community.

- **Promote Education and Training for Patients**: Encourage healthcare providers to offer education and training programs to improve health literacy and self-management skills among rural patients.

- **Collaborate with Urban Healthcare Centers:** Promote collaboration between rural healthcare facilities and urban healthcare centers to share resources, expertise, and best practices.

- **Stay Informed and Engaged:** Encourage all stakeholders, including healthcare providers, administrators, policymakers, and community members, to stay informed about the latest trends and innovations in rural healthcare and actively engage in the process of change.

EideBailly®

QUESTIONS?

THANK YOU!

Rochelle Dahmen, CSBI

Director – Healthcare Consulting

rdahmen@eidebailly.com

612.253.6638

EideBailly®

CPAs & BUSINESS ADVISORS