St Luke's UNIVERSITY HEALTH NETWORK

801 Ostrum Street
Bethlehem, PA 18015

Testimony to the Senate Communications and Technology Committee
Powering AI's Future in Our Economy

Introduction

Chairwoman Pennycuick, Chairman Miller and members of the Senate Communications and Technology Committee, thank you for the opportunity to testify on the critical topic of "Powering AI's Future in our Economy." My name is Dr. Charlie Sonday, and I represent St. Luke's University Health Network (SLUHN), an organization dedicated to advancing healthcare through technology and innovation. Today, I will talk about how our organization uses and supports AI, the successes we've had, the challenges we've faced, and other useful insights that help both healthcare and the larger commonwealth.

Utilization of AI at SLUHN

At SLUHN, we adopt a comprehensive approach to artificial intelligence, seamlessly integrating it into our workflows to improve patient care and operational efficiency. AI is regarded as an integral component of a broader ecosystem encompassing individuals and processes. Our organization has effectively implemented various AI models.

Early Detection of Sepsis Model and the Deterioration Index Model

One of the notable successes is our utilization of Epic's Early Detection of Sepsis model. This AI-driven model has significantly improved our compliance with the Early Management Bundle, Severe Sepsis/Septic Shock (SEP-1) measure by 12.5% over the course of a year. By incorporating the deterioration index model into our clinical workflows, we have reduced cardiac arrests and ICU bounce-back by more than 6%.

Importance of Workflow Integration

AI's effectiveness is heavily reliant on its integration into clinical workflows. It is not enough to run AI models in the background; we need to ensure that the information is presented to clinicians in a palatable way that drives compliance and identification. A clinical context that informs clinicians about risk and prompts timely interventions is essential to prevent adverse events and improve patient outcomes.

St Luke's
UNIVERSITY HEALTH NETWORK

801 Ostrum Street
Bethlehem, PA 18015

Challenges Encountered

Despite our successes, we have faced challenges in AI implementation. One significant challenge is the need to consider the human and process elements that organizations often overlook. AI models must be used correctly and integrated into appropriate workflows to maximize their effectiveness. Additionally, we have encountered issues with model sensitivity and alerting thresholds, which require careful adjustments to avoid unnecessary inflations of risk scores and ensure timely interventions.

Metrics and Analysis

At SLUHN, we prioritize holistic, patient-centered metrics to judge the improvements we have made rather than focusing solely on the direct effects of the models. Instead of using the number of rapid responses as an indicator of success, we evaluate clinical outcomes such as survival to discharge and ICU bounce-back. Monitoring these outcomes helps us identify areas to improve our workflows and ensure that the AI models contribute positively to patient care.

Designing Productive Alerts

Our approach to AI-powered alerts involves careful consideration of when interruptive alerts are necessary. For example, in our sepsis identification and treatment workflows, notifications are strategically placed to nudge clinicians toward the correct workflow without causing disruptions if the patient is already receiving appropriate care. In other situations, new information and signs of clinical deterioration warrant interruptive alerts to prompt timely adjustments in care.

SLUHN's Security Assessment of Artificial Intelligence Solutions

All artificial intelligence solutions evaluated and approved by the SLUHN Artificial Intelligence Governance program undergo a rigorous security evaluation by a third-party vendor to ensure they meet industry standards. This comprehensive evaluation is conducted by external security specialists who assess each AI solution's robustness against potential vulnerabilities and threats.

After passing the security assessment conducted by third-party security experts, an internal architectural review is completed. This review ensures that the AI solutions align

St Luke's UNIVERSITY HEALTH NETWORK

801 Ostrum Street
Bethlehem, PA 18015

with SLUHN's digital infrastructure requirements and comply with internal policies and standards.

Moreover, all artificial intelligence solutions remain within the SLUHN digital infrastructure, safeguarding clinical and business data from exposure to the internet or the outside world. By strictly controlling access and maintaining a secure environment, SLUHN upholds the highest standards of data protection and privacy, ensuring that patient information remains confidential and secure.

Insights for Future AI Integration

As we look to the future, it is crucial to remember that technology is just one piece of the puzzle. People and processes are equally important in the successful integration of AI. Organizations must design workflows that utilize AI data effectively and ensure that clinicians are educated and informed about the technology's capabilities. By fostering collaboration among informatics, analytics, infrastructure, technology, and clinical communications, we can continue to innovate and improve patient care.

Conclusion

In conclusion, AI has the potential to revolutionize healthcare and contribute significantly to the broader economy of the commonwealth. At SLUHN, we have demonstrated the positive impact of AI through our successes with predictive models and workflow integration. However, it is essential to address the challenges and ensure holistic approaches to AI implementation. I urge the committee to consider the importance of workflow and human elements in AI's future in our economy. Thank you for your attention and the opportunity to share our experiences and insights.