EXECUTIVE SUMMARY

In today’s rapid-paced healthcare environment, technology offers both a mechanism to enhance human connection and the possibility to create new barriers. It can extend the capacity of the care team or, conversely, create cognitive burden. When paired with deep thinking about people and process, technology solutions can enable a Connected, Healing Ecosystem that *fosters respectful empathetic interactions, builds trust, eases suffering, and restores the human connection to healthcare.*

To protect human-to-human connection and minimize unintended consequences from technology selection and implementation approaches, IT and clinical executives need to partner in new ways. Their mandate should go beyond traditional quality and efficiency outcomes to protect the well-being of clinicians and patients, and ensure that technology is applied in a human-centered way.

The Experience Innovation Network’s Humanity and Technology Council has married concepts from IT, clinical, operations, and patient experience leaders to create a framework that allows leaders to consider the human impact of technology alongside key considerations such as quality, cost, and technical integration. We have defined “human impact” as the extent to which a technology enhances human connection and compassion, expands human capacity, improves communication, relieves cognitive burden, and allows team members to connect to purpose.

To enhance the positive human impact in healthcare, we recommend that technology solutions will optimally:

- Give time back to clinician-patient relationships through improved efficiency of clinical and administrative tasks
- Minimize the cognitive burden of navigating disparate systems and data sets
- Intentionally address biases that disempower vulnerable groups to avoid perpetuating them with technologies
- Enable better two-way communication and exchange of relevant information
- Prioritize human-to-human connection over screen time and data input
- Eliminate the need to input redundant data
- Focus the presence and attention of care team on patients, families, and care team connection
- Integrate holistic support for care team members
- Foster improved decision making
- Neutralize or reduce psychological and physiological stress

The following framework for selecting and checklist for implementing technology in healthcare are designed with these principles in mind. These tools are intended for cross-functional collaboration between IT, clinicians, patients and families, and executives to ensure that human-to-human connection is prioritized in healthcare.
CHALLENGE: TECHNOLOGY VERSUS HUMANITY?

Technology is often positioned as the antithesis of humanity. Technology can’t feel, can’t think, and can’t acknowledge the nuances or emotions of the humans who interact with it. Technology is sometimes introduced to replace humans – as ATMs and self-service banking websites have obviated the need for many bank tellers and call center agents.

Technology Can Help Restore Humanity to Healthcare

As long as it applied thoughtfully, technology has as much potential to unleash humanity as to replace or hinder it. Solutions at the intersection of technology and humanity can help health systems to:

- **Reduce cognitive load.** Human beings can only process so much through their working memory. The more clinical details or task-related steps they have to process, the less care team members can attend to the clinical and personal facts and factors that support exceptional, empathetic care. Technology solutions that help team members focus on the relevant facts and protocols without having to search them out or hold them in memory enable meaningful dialogue and decision making at the frontlines of care. Mayo Clinic, for example, uses ambient intelligence tools to cut through the clutter of data in critical care units and help clinicians access the most relevant information based on their goals, work environments, strengths, and performance constraints.

- **Unleash capacity.** Intelligence-driven technology systems can offload routine tasks and decisions using rule-based algorithms. Solutions such as artificial intelligence platforms can identify likely workflow constraints including discharge delays, and provide informed, proactive prompts to help leaders align resources to emerging institutional needs. This not only creates capacity for patient throughput, it also frees human capacity to focus on critical but time-consuming elements of patient care such as communication and compassion. Natividad Medical Center, for example, uses machine learning and real-time analytics to streamline workflows in its ED, reducing left-without-being-seen rates by 42% and opening capacity for an additional 850 patients per year.

- **Enable communication.** Communication is at the heart of healthcare. Solutions such as online scheduling, emails for routine questions, and remote monitoring help patients connect and communicate with their care teams between visits. And solutions that marry voice and secure texting with workflow rules help care team members share the information required to optimize patient care in real time. Vancouver Island Health Authority, for example, found that physicians responded 1.5 minutes faster to messages in a Vocera smartphone app than to pages, with fewer interruptions to patient care.

- **Support compassion.** When care team members aren’t tied to clunky computer interfaces or mired in inefficient workflows, they are more able to connect with patients and express the compassion and empathy that take patient care from excellent to exceptional. Technology can play a role in helping care team members replenish energy and compassion resources. Many solutions are available that allow care team members to regain presence and focus when things get hectic. Solutions that integrate support for care team members without requiring them to log into additional platforms generate more usage and a more holistic user experience.

The concepts outlined above will allow technology to support team member well-being instead of contributing to burnout. Our research shows that one of the key system-level factors influencing team member well-being is the extent to which leaders work to minimize the unnecessary trauma caused by poorly designed systems, including technology.
PURPOSE: WHY USE THE H2T FRAMEWORK

In healthcare, we hear too many stories of doctors and nurses being pulled away from their healing purpose as they struggle to meet documentation requirements. Many clinicians now fear that technologies distract them from the human-to-human interactions that drive purpose, connection, and communication.

Technology decisions are complex. Healthcare executives responsible for technology selection and implementation have to weigh critical factors such as the effectiveness of the solution at solving the problem at hand, technical integration requirements, and costs. To-date, decision-makers have focused on technical, cost, and quality impacts, while overlooking human impact (see Appendix). As a result, technology has had a compounding effect on complexity in healthcare with many of solutions outpacing team members’ innate ability to adapt to change. This, in turn, is contributing to an increase in clinicians’ risk for cognitive overload and burnout.

At the Experience Innovation Network, part of Vocera, we believe strongly in the potential for technology to unleash human potential. Technology has the power to alleviate cognitive and emotional burdens in healthcare, strengthen culture, and improve outcomes.

The purpose of the H2T Framework is to help decision makers prioritize human impact during the selection and implementation processes.

Leaders who invest upfront to actively select for solutions with a positive human impact – or, at worst, understand, mitigate, or avoid potential negative human impacts of technology – will avoid being blindsided by unintended technology hurdles. As with any change management strategy, the upfront time and energy is an investment with the potential to reduce both the direct costs (FTEs, turnover, etc.) and indirect costs (loss of trust, decreased patient loyalty, etc.) of choosing the wrong technology or implementing the right technology in a way that sets up inevitable and avoidable failures.

Beyond cost reduction, the conversations suggested in the framework are human-centered leadership practices that build relationships and establish trust.
ABOUT THE EXPERIENCE INNOVATION NETWORK

The Experience Innovation Network, part of Vocera, works to restore the human connection to healthcare. We lead and accelerate the discovery, adoption, and execution of innovations that meet the quadruple aim of improving population health, elevating patient-centered care, and reducing costs while restoring joy to practice. Co-founded by Bridget Duffy, M.D., the first chief experience officer in healthcare, this global community of industry pioneers works to transform the healthcare experience. For more information, visit www.vocera.com/EIN and follow us on Twitter at @EINHealth.

ENDNOTES