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ORIGINAL ARTICLE

A Technology Selection Tool Applying Multiple Criteria Decision Analysis for Virtual Care Implementation

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Abstract

Objective: To develop and pilot a technology selection tool (TST) designed to evaluate and recommend virtual care technologies tailored to specific community clinical needs.

Patients and Methods: Developed through collaborations among clinicians, software developers, technology experts, and health administrators, the TST uses a multiple criteria decision analysis framework to recommend technologies based on clinical relevance and technical quality. Its functionality was tested in a pilot project that assessed 5 technologies for their application in virtual wound care to support a remote community in Saskatchewan, Canada. The pilot study was completed March 7, 2025, through July 28, 2025.

Results: The TST identified the TeleVU Glass View as the optimal technology for virtual wound care. The TST generated product scores for the TeleVU Glass View (71.67), Teladoc Xpress (70.10), 19 Labs GALE (50.67), and TytoCare TytoKit (47.00), whereas disqualifying the Teladoc Lite Cart for not meeting the pass—fail portability criterion. TeleVU's high product score resulted primarily from its technological attribute quality scores for Telestration (10), Audio (9), Video (9), and Share Content (9), which were all determined as clinically relevant for virtual wound care. The pilot enabled real-time wound care support by connecting local clinicians with virtual teams.

Conclusion: The TST offers a practical and adaptable tool to support evidence-based decision making for selecting technologies for specific clinical applications.

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Virtual care has been accelerating in adoption and prominence, driven by advancements in technology and a growing recognition of its potential to address health care access disparities.[1] The evolution of technologies supporting virtual care, from autonomous robotic systems to artificial intelligence—driven diagnostics, has enabled health care providers to deliver care in innovative ways that are increasingly overcoming geographical and logistical barriers.[2] To promote equitable access to and effective utilization of these technologies, it is crucial to identify and select appropriate technology applications that serve to support specific needs and priorities.[3]

Health technology assessment (HTA) frameworks, with a historical emphasis on evaluating the impact of pharmaceutical technologies on health care, have been increasingly adapted to assess the evolving field of eHealth solutions.[4] These frameworks can provide a well-rounded lens for evaluating technologies across various domains, including clinical effectiveness, economic impact, patient perspectives, and organizational considerations.[4-6] Despite these developments, operationalizing these tools remains challenging due to substantial variability in assessment methods and outcomes, as well as limited demonstrations of their practical applicability across diverse contexts.[7] Furthermore, owing to the rapid expansion of virtual care technologies in response to the COVID-19 pandemic, there is a need to modernize traditional quality assessment frameworks to accommodate contemporary dimensions of hybrid and virtual care.[8] To promote clear and consistent decision making, tailored and practical tools that account for the unique functional characteristics of virtual care services and the specific attributes of the technology in question could provide substantial value.[4,6]

In this context, multiple criteria decision analysis (MCDA) frameworks offer promising advantages by introducing a structured, transparent, and systematic approach to evaluating health technologies.[9-12] Multiple criteria decision analysis frameworks allow for the consideration of diverse criteria, assigning weights to reflect their relative importance, and enabling stakeholders to compare alternatives on a more objective basis.

To support and further leverage HTA frameworks,[11] we propose a novel technology selection tool (TST) that operationalizes a multiorder additive MCDA framework to transparently quantify scores of virtual care technologies based on their clinical effectiveness and ability to meet health care professionals' requirements for their specific virtual patient consultations. This tool represents a cross-functional and multidisciplinary approach that incorporates feedback and experience from clinical and technical teams to align technology with clinical needs. By decomposing and scoring technological attributes, the tool provides an objective and versatile scoring system for HTA. The developmental process behind this tool is designed to be replicable, customizing parameters of the MCDA algorithm to fit the specific context of any health care organization. The TST is unique in that it mathematically calculates the value of technology in relation to specific clinical needs or use cases and—unlike traditional evaluation methods—integrates expert input from both clinical and technical domains to systematically align technology capabilities with clinician preferences and relevance. This reconciliation enables a rigorous, context-specific assessment of technologies.

The objective of this article is to describe the methodology behind the tool's development, its underlying principles, and the testing of its application through a case study in a remote community in northern Saskatchewan. By systematically assessing and selecting virtual care technologies for specified use cases, the TST aims to support safe and appropriate implementation of virtual care systems into clinical practice.

PATIENTS AND METHODS

Process for Development

The development of the TST involved a multistakeholder collaborative process among diverse health care professionals, software engineers, virtual care technology experts, and program administrators. The overarching aim of the tool was to help guide virtual care program implementation efforts by developing a standard approach to selecting technologies best equipped to facilitate the provision of virtual clinical services. The TST was designed to work in tandem with a previously developed tool—a comprehensive evaluation tool to assess community capacity and readiness for virtual care implementation—which performs a community clinical needs assessment as part of its application.[13] The results from this assessment informed the development of the TST, highlighting the need for a systematic selection of technologies best suited to address specific clinical needs.

Through repeated consultations and consensus-building sessions among the stakeholders taking place between October 2023 and March 2024, it was decided that the TST's engine would operationalize an MCDA approach that included inputs from technicians with expertise in virtual care technology, technology vendors, and clinicians who have extensive experience with virtual care clinical applications. The primary stakeholders engaged throughout this process were administrative and implementation staff from the virtual health hub (VHH),[13] whose vested interest lay in standardizing and streamlining technology selection across their virtual care program because it prepared to scale to servicing 30 new remote communities. Their motivation was driven by the need to apply the results of existing clinical needs assessments in a structured, repeatable, and evidence-informed manner, ensuring that selected technologies would be aligned with priority clinical use cases from both clinical and technical perspectives. The engagement process was shaped through a series of informal but focused discussions, working meetings, and iterative feedback exchanges. To serve as an actionable resource for program implementation, it was determined that the TST's output would best function as a dynamic library containing a list of clinical services currently being offered by the VHH, matched with their selected technologies of choice, based on the tool's analysis. This approach would allow for rapid technology selections given specified clinical use cases flagged by clinical needs assessments. Additionally, the tool needed a practical mechanism to capture and analyze new technologies as they develop and advance, as well as a method to elicit feedback from health care professionals and technical experts on a continual basis to keep the tool updated and relevant (Figure 1).

Principles Considered for the Development

The development of the TST was guided by 3 key principles: transparency, practicality, and repeatability. Structured transparency aimed to establish a clear and explicit algorithmic framework where each step of the decision modeling process could be easily reviewed and validated, using software to improve stakeholders' understanding of the tool's analysis.[14] This principle was essential to fostering trust in the tool's recommendations and ensuring its credibility among clinicians, technical experts, and program administrators.

Practicality was another fundamental principle that informed the tool's design and implementation. The development team prioritized creating a user-friendly and intuitive system that could be easily deployed across a variety of health care settings. Recognizing the diverse technical expertise of potential users, the team sought to design the TST to deliver actionable and interpretable outputs without requiring extensive training or prior familiarity with virtual care technologies.

The principles of reproducibility and repeatability were also central to the

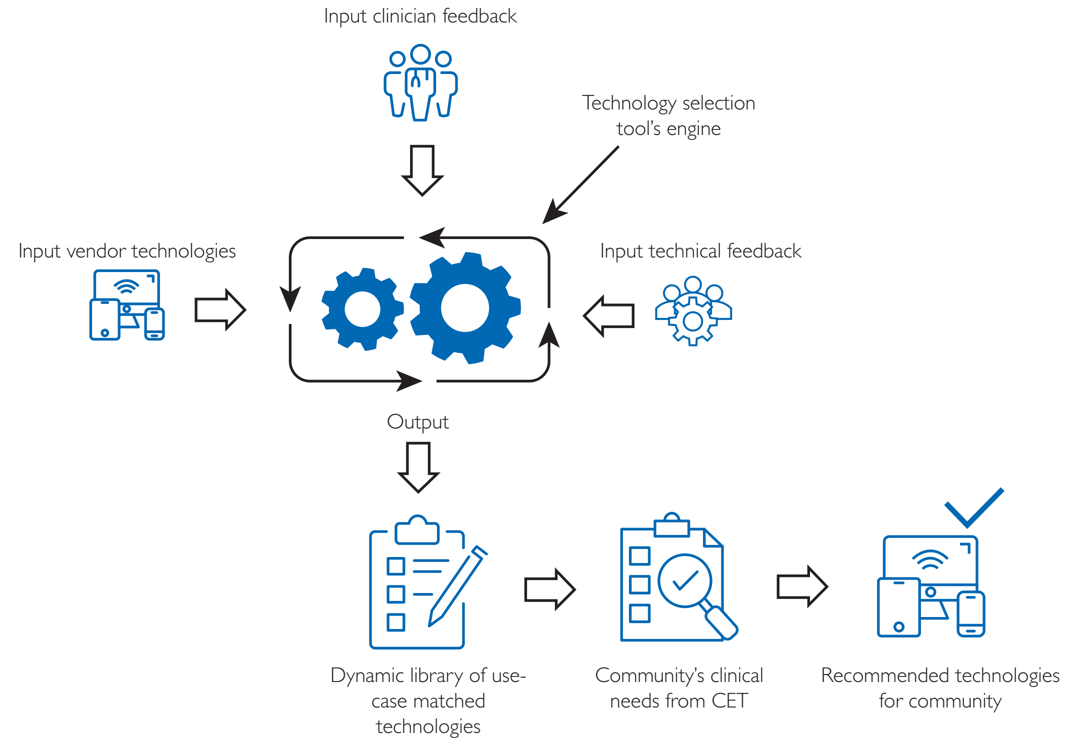

FIGURE 1. Conceptualization of the technology selection tool's inputs and outputs. CET, comprehensive evaluation tool to assess community capacity and readiness for virtual care implementation.

development process. The team emphasized the need for a standardized and reliable methodology that could carry out consistent decision-making rationale. This required the establishment of clear guidelines to ensure that the tool's evaluation process could be uniformly applied across different users, organizations, and contexts.

Technology Identification

The VHH identified 5 technologies to support virtual consultation to initially populate the tool's pool of candidates, choosing technologies that the VHH currently had available for hands-on evaluation and wanted to further analyze to determine optimal applications. Through this process, it was immediately apparent that there was a need for a scalable and adaptable input mechanism to on-board additional emerging technologies and ensure the tool's evaluation pool remained current. To address this, a publicly facing web-based portal was developed, providing vendors with a method to input their technologies into the system independently of the VHH. Through this portal, vendors supply critical information about their technologies, including intended clinical applications, technical features and characteristics, and supporting documentation (https://vhhpartnerportal.web.app/). Companies are invited to submit their technologies through the portal after outreach conducted via email or discussions held during videoconferencing meetings. These engagements emerged organically, driven by industry interest in having the VHH evaluate and validate their technologies for specific clinical applications.

Technology Decomposition: Identifying Core Technological Attributes

Each technology was systematically deconstructed into its core technological attributes—defined as all identifiable features and functionalities that contribute to a technology's utility and value during clinical encounters. The deconstruction was performed by the technical team consisting of 2 engineers, 1 program administrator, and 2 virtual care nurse clinical coordinators, through in-person workshops that included evaluations and testing of each technology to arrive at a group consensus. This process included analysis of each technology's design, performance, and usability. The technical team identified attributes that included both unique and shared features across all technologies.

A total of 5 virtual care technologies were evaluated, with 17 distinct core technological attributes identified during the decomposition process (Figure 2). The technologies selected for evaluation were those already in use by the VHH reflecting systems the team had direct experience with and had worked with extensively over several years. In addition to identifying key technological attributes, each solution was also assessed for 2 critical logistical characteristics: portability and cellular connectivity. Portability was defined as the ability of the hardware to be easily carried

Technology		Logistics																		
Brand	Model	Portable	Cellular connectivity	Video	Audio	Telestration	Share content	Screen size	Laryngoscope	Stethoscope	Otoscope	Thermometer	Dermatoscope	Pulse oximeter	Blood pressure	Urinalysis	ECG	Blood sugar	Privacy handset	Spirometer
Teladoc	Lite cart			●	●	●	●	●		●			●						●	
Teladoc	Xpress	✓	✓	●	●	●	●	●		●			●							
TeleVU	GlassVU	✓	✓	●	●	●	●	●												
19Labs	GALE	✓	✓	●	●		●	●	●	●	●	●	●	●	●	●	●	●		●
Tyto	Tyto kit	✓	✓	●	●			●	●	●	●	●	●							

FIGURE 2. Decomposition of 5 technologies into 17 core technological attributes and 2 logistical considerations (portability and cellular connectivity). ECG, electrocardiogram.

by a single individual and operationalized in a new location or care setting off site, without requiring additional equipment or complex logistical arrangements to transport. An example would be taking a portable system into the home of a patient to facilitate a virtual home care appointment. Cellular connectivity was defined by the presence of a SIM card slot and the system's capability to connect to mobile networks, enabling functionality in environments without reliable Wi-Fi access. These logistical considerations were essential for evaluating the feasibility of real-world deployment and were embedded within the TST's algorithmic engine as binary, pass—fail, criteria. This ensured that only technologies meeting baseline operational requirements such as mobility for field use were considered for clinical applications demanding flexible or decentralized deployment models.

Core Technological Attribute Quality Ratings

For each of the 5 technologies, the technical team assigned a quality score to each of the 17 technological attributes, ranging on a scale from 0 to 10. These scores were determined based on the attribute's performance, reliability, and ease of functionality, with a score of 10 representing the highest quality among all competing technologies exhibiting the same attribute, and a score of 0 indicating the technology does not possess the attribute. The scoring process was conducted through a consensus-building in-person workshop by the technical team to ensure consistency and impartiality. This evaluation resulted in a detailed profile for each technology, highlighting its strengths and weaknesses relative to its peers.

Relevance of Core Technological Attributes to Virtual Clinical Applications

To incorporate clinical feedback into the evaluation process, 6 clinical service lines offered by the VHH—wound care, pediatrics, primary care, mental health, emergency medicine, and physiotherapy—were selected to undergo the technology core attribute relevance evaluation. Clinician leads from each clinical service line, including a vascular surgeon, pediatrician, psychiatrist, emergency physician, primary care physician, and physiotherapist, all with numerous years of experience with virtual care systems, composed the clinical evaluation team, and were surveyed on the importance or utility of each of the identified technological attributes as they related to their specific clinical use-case. The clinical team provided relevance ratings for each of the 17 attributes within the context of each of the 6 clinical applications. These ratings were scored on a scale from 0 to 10, with 10 indicating the highest perceived importance of all attributes, and 0 signifying no relevance of the attribute to the clinical application. Ultimately, the clinicians' ratings reflected the criticality of each attribute in enabling the success of their virtual clinical applications, ensuring that the evaluation process aligned with practical clinical priorities.

Development of the TST Software Program

The TST was developed into a web-based software program, offering a simplified platform for entering feedback scores from the technical and clinical teams and evaluating and selecting virtual care technologies based on specific clinical needs. At the core of the software is an algorithmic engine that automates the MCDA process. The engine was made to be highly configurable, allowing users to adjust the weighting of criteria as clinical priorities change or real-time feedback is received. The software was designed to support a user-friendly interface to make it easy for health care providers to input clinical needs and receive technology recommendations. Functionality to generate comprehensive reports with interactive visuals, including comparison graphs and scoring breakdowns, was integrated to provide stakeholders with a deeper understanding of the tool's recommendations and technology selection process (Figure 3).

Technology Section Tool Algorithmic Engine

The TST's algorithmic engine was designed to integrate the 2 primary scoring dimensions, technical quality and clinical relevance, through the application of additive MCDA, for each of the 5 technologies with respect to each of the 6 clinical service lines. Using the weighted scoring system, each technology's attribute quality score was multiplied

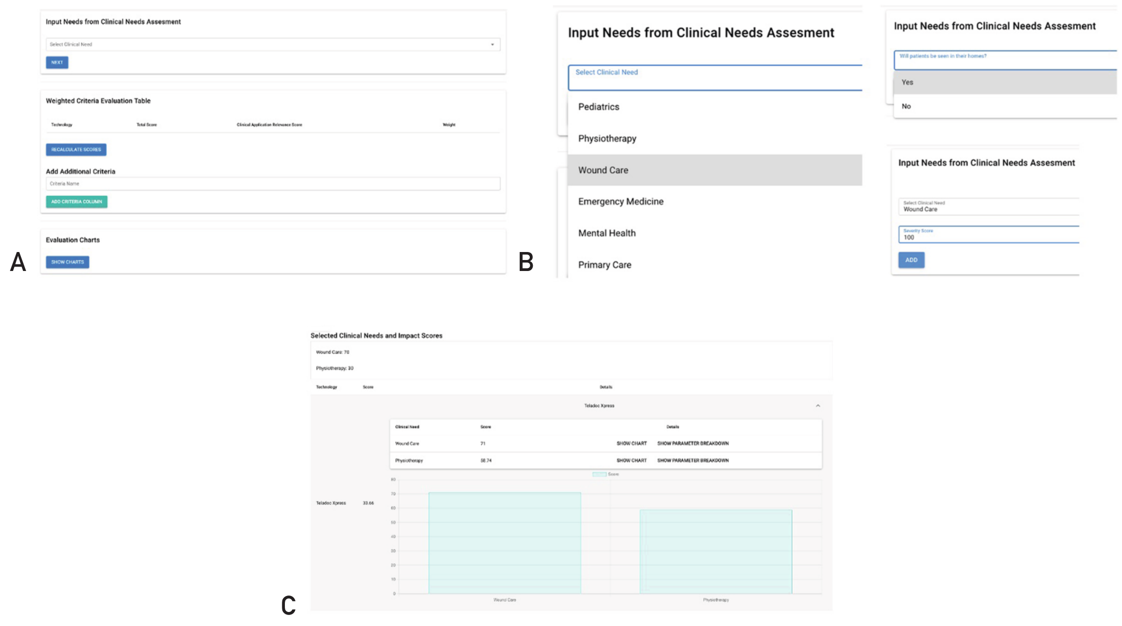

FIGURE 3. Technology selection tool (TST) software program's user interface. (A) Home page; (B) interface to input clinical needs and severity scores; (C) interactive visuals: chart view presenting total product scores for Teladoc Xpress across 2 clinical needs; (D) interactive visuals: parameter breakdown of 6 technological attributes for Teladoc Xpress for wound care and chart view presenting total product scores across multiple technologies for wound care. (E) Example of TST's scoring across multiple clinical needs and custom criteria. Five technologies scored for primary care (severity score, 80) and physiotherapy (severity score, 60) with 2 additional criteria and adjusted weights (50% clinical application relevance, 25% patient satisfaction, and 25% cost-effectiveness); (F) chart view illustrating the contribution of each weighted criterion to the total product score for each technology.

by its corresponding clinical relevance rating for a given clinical application to generate a subscore. These subscores quantified the contribution of each attribute to the overall utility of the technology in meeting clinical needs. The sum of the subscores produced a product score for each technology for a given clinical application. Additionally, the algorithm incorporated an added layer of pass—fail criteria checking for technology portability, ruling out stationary technologies from consideration for applications requiring mobile devices and ensuring that only portable devices capable of operating in varied environments were considered.

Second-Order Weighting Feature (With Customized Additional nth-Order Weights)

A second-order weighting feature was developed to allow for the incorporation of additional factors into the evaluation process, enabling greater flexibility and customization based on other dimensions commonly considered in HTA frameworks or other relevant contextual considerations.[15] This feature extends beyond the initial weighting of quality and clinical relevance by introducing secondary and nth-order weights to account for more complex decision-making criteria. One key application of this feature is the capacity to include multiple clinical needs if provided with comparative severity scores from previous clinical needs analysis. By integrating the relative importance of multiple needs, the TST was designed to evaluate technologies not only based on their alignment with individual clinical needs but also on their ability to address multiple needs simultaneously, prioritizing technologies that offer the most comprehensive utility. Additionally, this feature allows administrators to incorporate other criteria, such as patient preferences, cost considerations, or operational feasibility, into the evaluation process. By assigning customized weights to these

FIGURE 3. (*continued*).

additional factors, the tool can recommend in alignment with broader organizational or patient-centered priorities. The flexibility of the nth-order weighting system also enables the inclusion of emerging or context-specific criteria, supporting adaptability to diverse health care settings and decision-making requirements.

Piloting the Tool: Addressing Wound Care Management in Île-à-la-Crosse

Île-à-la-Crosse, a remote community in northern Saskatchewan, was selected as a pilot site to test the recommendations of the TST using the VHH's available technologies. Île-à-la-Crosse is a community rich with history, being one of the oldest settlements in Saskatchewan and home to Métis families primarily descended from French Canadian and Scottish ancestors. Access to wound care management has emerged as a common concern in northern Saskatchewan, and support for chronic diabetic ulcers was highlighted as a critical need by a clinical needs assessment conducted for the community. Complications with diabetic ulcers can lead to high rates of preventable lower limb amputations. Île-à-la-Crosse receives wound care support by a team located in North Battleford, a city that is located approximately 377 km south. This arrangement necessitates frequent travel for both clinicians and patients in order for care to be accessed. Île-à-la-Crosse's health facility services neighboring communities, with home care teams that routinely provide home visits for wound care management. Local health care providers from both Île-à-la-Crosse and North Battleford stressed the importance of finding effective wound care solutions due to the high number of chronic wounds and the challenges associated with managing them in remote settings. A hybrid virtual care and in-person clinical pathway was designed as a potential model to address

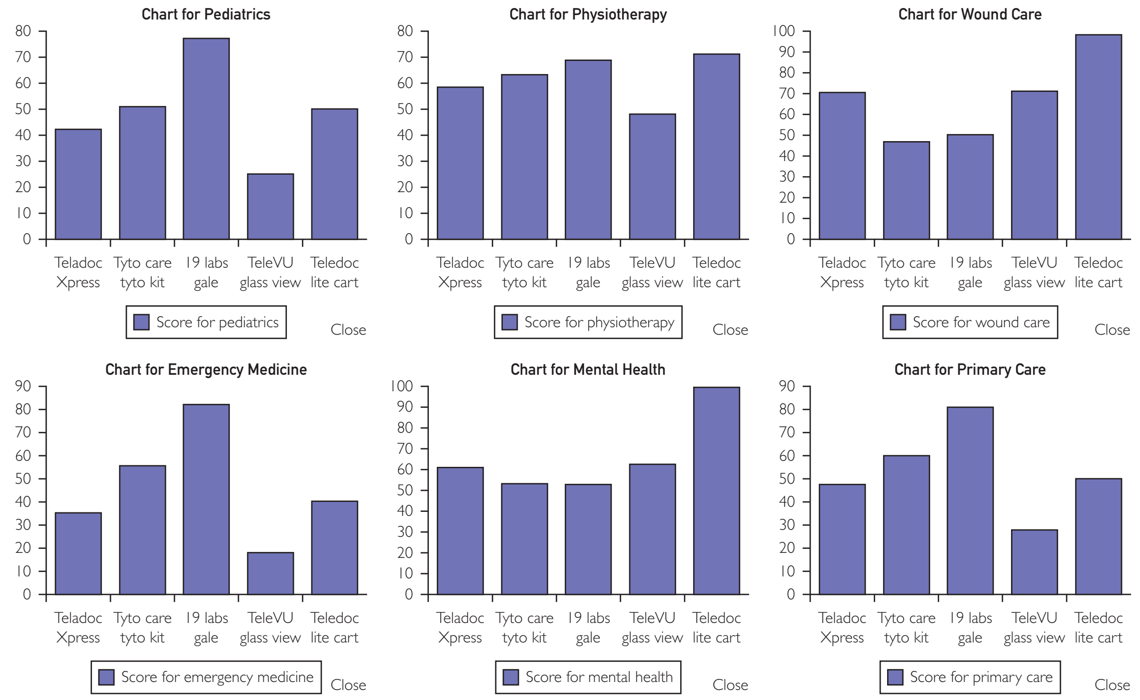

FIGURE 4. Total product scores for 5 technologies across 6 clinical applications. No second-order weights or pass/fail criteria were applied.

this clinical gap. The goal of the pilot was to assess the VHH's available technologies and clinical resources to populate the TST and evaluate its effectiveness in identifying appropriate virtual care technologies to address the need for wound care management in Île-à-la-Crosse. This pilot study was completed March 7, 2025, through July 28, 2025. Research ethics board approval was obtained from the University of Saskatchewan's Research Ethics Board (Bio 4746).

RESULTS

Dynamic Library

The dynamic library is the result of the TST's analysis, serving as a centralized repository that connects clinical services with the most appropriate virtual care technologies. Figure 4 plots the product score for each of the 5 technologies that were evaluated, scored across each of the 6 clinical applications, considering no second-order or pass—fail selection criteria. Organized by clinical application, the dynamic library offers tailored recommendations based on the TST's evaluations, complete with detailed profiles, quality scores, and clinical relevance. Continuously updated through a web-based portal for vendor submissions and user feedback, the library adapts to advancements in technology and evolving health care needs.

Case Study: Results From the Île-à-la-Crosse Pilot

The TST recommended the TeleVU Glass View as the best-suited technology for the application of virtual wound care support for the community of Île-à-la-Crosse. This decision was based on the wound care clinical relevance and technological attribute quality scores composing the product scores for all technologies being assessed, with additional consideration given to logistical requirements specific to the Île-à-la-Crosse use case. The TeleVU Glass View emerged as the top recommendation due to its alignment of technological attributes with those deemed relevant for

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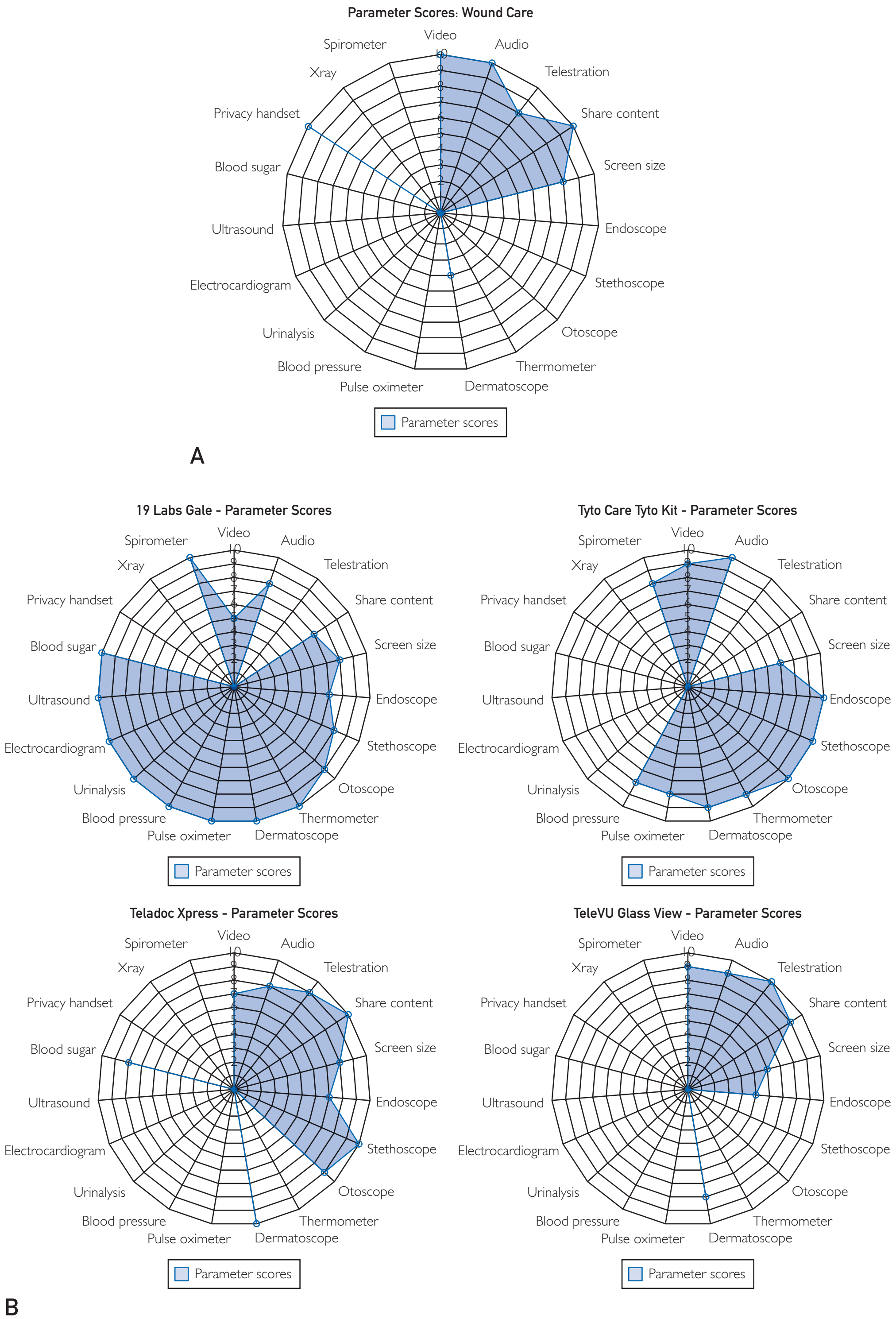

FIGURE 5. (A) Clinical relevance scores for each technological attribute for wound care. (B) Technological attribute quality scores for each technology passing logistical requirements for wound care in Île-à-la-Crosse. (C) Chart view presenting total product scores for virtual care technologies assessed for wound care, which satisfy the requirement for portability, and (D) parameter breakdown of technological attributes for each technology in scenario C.

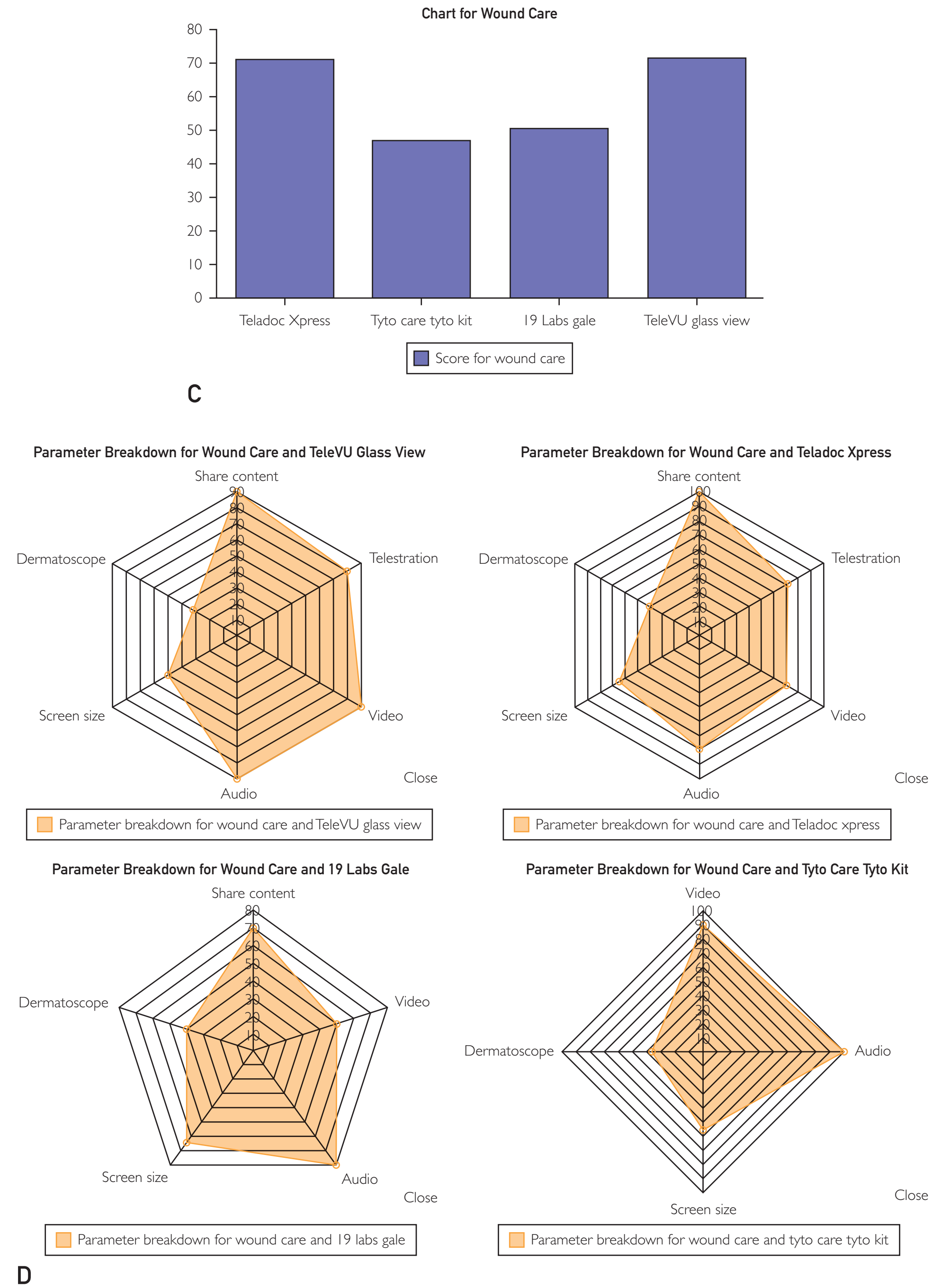

FIGURE 5. (*continued*).

wound care, generating a high product score by the TST (Figure 5). Owing to the TeleVU Glass View's high technological attribute quality scores for Telestration, Audio, Video, and Share Content, as determined crucial by the clinical relevance scores for wound care, the TeleVU system's product score was the highest of all technologies under consideration.

The TeleVU system is a wearable device that transmits a first-person perspective view from the local clinician's point of view, enabling remote experts to see exactly what the onsite clinician sees. The device is voice commanded, which allows hands-free operation, an essential feature for wound care scenarios that often require both hands for patient management. Additionally, its ability to connect to both Wi-Fi and cellular networks provides the flexibility needed to operate across multiple clinical settings, including the potential to be taken directly into patients' homes where connectivity infrastructure may vary. The TeleVU Glass View's portability and compatibility with existing infrastructure in Île-à-la-Crosse made it a practical choice for implementation. The TST's graphical visuals show a detailed technological attribute breakdown of the TeleVU Glass VU scoring across all criteria, as well as how it compares to its peers evaluated with respect to wound care (Figure 5).

Implementation Plan

Following the TST's recommendation, the community has initiated a pilot project to deploy the TeleVU Glass View. The technology was integrated into the local clinic as well as mobilized using cellular connectivity for home visits, facilitating real-time support from the wound care team based in North Battleford, a 4-hour drive south. For cases requiring higher-level intervention, escalated support will be provided by a vascular surgeon team in Saskatoon, located 465 km south. This multitiered support system was designed to ensure that patients receive timely and appropriate level of care, leveraging the strengths of virtual consultations to overcome geographic barriers. To date, 5 patients have received virtual wound care clinics from a vascular surgeon located in Saskatoon, Saskatchewan, via the TeleVU system. These consultations have allowed patients to access specialized wound care support in their home community of Île-à-la-Crosse without needing to travel to distant tertiary centers for specialist care.

DISCUSSION

The findings from this pilot study position the TST as an innovative addition to the HTA literature, particularly in the domain of eHealth solutions. Although traditional HTA frameworks have focused on identifying domains or constructs to support well-rounded decision making, there are limited quantitative and algorithmic approaches that evaluate technologies on a granular level.[6] The TST addresses this gap by organizing stakeholder involvement and adapting principles of MCDA to evaluate and recommend technologies based on specified criteria including technical robustness, clinical specificity, and logistical feasibility.

A strength of the TST lies in its potential ability to overcome some of the known challenges associated with MCDA approaches in HTA.[10,16-19] One common challenge is the establishment of criteria weights, which determine the relative importance of different criteria and quantify the benefit of the technology.[17,18] Specifically, criteria should be nonoverlapping to prevent double-counting of their value domains, as well as preferentially independent, meaning the performance of one variable should not affect the weight of another.[20] The approach taken with the TST mitigates this pitfall by engaging experts to deconstruct and isolate technological attributes that represent distinct categories of value toward clinical utility, minimizing the probability of any overlap. Another limitation MCDA can often face in HTA is accessing context-specific information to formulate decision criteria and weights.[20] Tailored and relevant information can be resource intensive and costly to obtain, restricting the applicability of the assessment's conclusions.[18] The VHH dedicated resources to surveying and engaging contextually relevant experts to build the TST's software infrastructure and populate the tool's initial data set. This approach has set the stage for future scalability and participation among outside organizations. Using the TST, barriers to setting up an appropriately designed MCDA for HTA can be reduced through the provision of an accessible software tool. This platform also has the potential to create a centralized ecosystem for the consolidation of future technologies from industry and feedback from contextualized sources.

Although the TST was developed within the context of the VHH's implementation framework, its core structure is highly adaptable and can be customized for use by other organizations seeking to evaluate virtual care technologies. The foundational methodology—quantifying clinical need, breaking it down into weighted technological components, and aligning those components with technology capabilities—can be applied in various settings. For successful uptake elsewhere, organizations are encouraged to convene a multidisciplinary panel that includes clinical experts, technical specialists, and implementation leads to define local priorities and customize the scoring framework accordingly. Additionally, contextual variables such as infrastructure readiness and workforce capacity should be integrated into the scoring process to enhance relevance and can be facilitated by applying community evaluation frameworks such as the comprehensive evaluation tool to assess community capacity and readiness for virtual care implementation.

One of the most versatile features of the TST is its nth-order weighting capability, which allows for the inclusion of additional layers of customized decision criteria and weights to adapt the tool to specific contexts and priorities. This feature can incorporate perspectives that extend beyond clinical and technical evaluations, such as patient feedback and preferences. For example, patient-reported outcomes and satisfaction scores could be weighted alongside technological attribute quality and clinical relevance to ensure that the selected technologies align with patient expectations and experiences. The integration of patient-centered and other specified metrics can play an important role in more inclusive and holistic decision making in HTA while supporting evidence-source selection through transparency and documentation.[21] Other main domains often considered in HTAHTA frameworks, such as economic impact, equity of access, and societal/organizational considerations,[6,22,23] can also be added to the weighting system, providing a more comprehensive evaluation that accounts for broader health care objectives.

Beyond customized weighting, the TST can also incorporate additional customizable pass–fail criteria to address logistical and operational considerations specific to implementation settings while including a deliberative component into the decision-making process.[10,22] For instance, criteria related to power supply requirements, internet connectivity standards, or compatibility with existing electronic medical record systems could be added to ensure that selected technologies are feasible to deploy in diverse health care environments. In remote or resource-limited settings, criteria such as the ability to function on low-bandwidth networks, portability for transport between locations, and durability in harsh environmental conditions may be critical to ensuring successful implementation. The integration of these pass–fail considerations into the evaluation process can allow the TST to select technologies that meet clinical and technical standards while ensuring that they are practical and sustainable for real-world deployment. This level of adaptability enhances the tool's relevance across varied health care contexts and supports its application in diverse clinical and community settings.

The pilot highlighted the practical utility of the TST in identifying technologies that align with both clinical priorities and community-specific logistical requirements. The successful deployment of the TeleVU Glass View in Île-à-la-Crosse provides a scalable model that can inform similar implementations in other remote communities. By demonstrating the capability of the TST to systematically evaluate and recommend technologies, this pilot indicates the potential for broader applications of the tool in virtual care program planning and execution.

Despite these strengths, the study has several limitations. The small number of technologies initially included in the TST's evaluation pool limited the breadth of comparison. Future iterations of the tool will benefit from a larger and more diverse repository of technologies, which can be achieved through broader engagement with technology vendors and the continuous updating of the tool's dynamic library. Another challenge was variability in clinical relevance ratings among individual clinicians. Standardizing this process through more robust training and consensus-building exercises could enhance the reliability of the ratings. Additionally, using the TST to select technologies for additional deployments in health care systems, as well as assessing long-term health outcomes and patient and provider feedback on the TST's selections, will be necessary to validate its conclusions. Finally, the study relied solely on the clinical relevance and technical quality dimensions of the TST, without incorporating higher-order weighting features such as cost-effectiveness, patient and provider preferences, or system-level feasibility. As a result, evidence supporting the tool's application is limited in scope and does not reflect the broader dimensions typically considered in HTA frameworks.

Looking ahead, the next steps include expanding the pilot to include additional technologies and clinical needs, whereas recommending selections for additional remote communities to validate the scalability and generalizability of the TST. The integration of feedback mechanisms into the TST's algorithm will also be needed to ensure continuous improvement and alignment with emerging clinical and technological advancements. Furthermore, expanded collaborations with health organizations, government departments, and policymakers will be essential to support the broader adoption of the TST and the technologies it recommends. By addressing these next steps, the TST has the potential to become a valuable tool in the strategic planning and implementation of virtual care programs.

CONCLUSION

The development and pilot testing of the TST demonstrate its potential as a practical, adaptable framework for guiding technology adoption in virtual care. By integrating clinical and technological attributes through multiple criteria decision analysis, the TST provides structured, evidence-based recommendations tailored to local needs. The pilot in Île-à-la-Crosse highlights its ability to identify solutions aligned with community clinical needs, offering a scalable model for other settings.

As virtual care continues to expand across the globe and the number of market-ready technologies increases, there is an urgent need to develop standardized assessment tools that can guide the effective and sustainable deployment of these innovations. This initial testing of the TST evaluating 5 technologies for a specific clinical application in an underserved remote community is promising.

POTENTIAL COMPETING INTERESTS

The authors report no competing interests.

ETHICS STATEMENT

Ethical approval was obtained from the University of Saskatchewan Research Ethics Board, and informed consent was obtained from participants.

DATA AVAILABILITY STATEMENT

Data sharing not applicable to this article as no datasets were generated or analyzed during the current study.

Abbreviations and Acronyms: **HTA,** health technology assessment; **MCDA,** multiple criteria decision analysis; **TST,** technology section tool; **VHH,** virtual health hub

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