

Vitória SUS Field Hospital in Curitiba: a technological and innovative approach to fighting the pandemic

Hospital de Campanha Vitória SUS em Curitiba: un enfoque tecnológico e inovador para combatir la pandemia

Hospital de Campanha Vitória SUS em Curitiba: uma abordagem tecnológica e inovadora no enfrentamento da pandemia

Tatiane Correa da Silva Filipak¹

ORCID: 0000-0002-4633-6250

Beatriz Battistella Nadas²

ORCID: 0009-0006-0891-9507

Sezifredo Paulo Alves Paz¹

ORCID: 0009-0006-9014-6397

Angelita Izabel da Silva¹

ORCID: 0009-0005-2059-4728

Milton José de Andrade^{1*}

ORCID: 0009-0000-7512-4364

Marina Abreu de Oliveira

Marcondes¹

ORCID: 0009-0002-1159-4951

Sulamita de Paula Santos¹

ORCID: 0000-0003-1168-6987

Francielle Zucoloto da Silveira¹

ORCID: 0009-0000-7659-275X

¹Fundação Estatal de Atenção à Saúde de Curitiba. Paraná, Brazil.

²Secretaria Municipal da Saúde de Curitiba. Paraná, Brazil.

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*Corresponding author:

milandrade@feas.curitiba.pr.gov.br

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Abstract

The Vitória SUS Field Hospital in Curitiba (HCV) in Curitiba emerged as a technological and innovative approach to face the COVID-19 pandemic, managed by the State Health Care Foundation. During its 16 months of operation, it served 4,119 patients, with a rate of 76% recovery. During operation, some technological resources were implemented to guarantee effective care. These included bedside audits, video calls, and information systems integration. Bedside and prescription audits carried out through an app, improved the safety and quality of treatment, reducing non-conformities to less than 15%. Video calls, totaling 3,000 calls, humanized the service. Connectivity between information systems guarantees efficiency in data management. The results of these implementations demonstrate the importance of preparing the health system for emergencies and the effectiveness of technological innovations. HCV not only filled gaps in the COVID-19 care pipeline, but also served as a reference, sharing knowledge and strengthening the health system. The HCV experience highlights adaptability and innovation in healthcare, offering important perspectives for future crises, impacting Brazilian society by improving the response to emergencies, increasing the recovery rate, and optimizing resources.

Descriptors: Technology Applied to Health Care; Assessment of Health Technologies; Information Technologies; COVID-19 Pandemics; Hospital Management.

Resumén

El Hospital de Campanha Vitória (HCV), de Curitiba, surgió como un enfoque tecnológico e innovador para enfrentar la pandemia de la COVID-19, gestionado por la Fundación Estadual de Salud. Durante sus 16 meses de funcionamiento, atendió a 4.119 pacientes, con una tasa de 76. % recuperación. Durante la operación se implementaron algunos recursos tecnológicos para garantizar una atención efectiva. Estas incluyeron auditorías de cabecera, videollamadas e integración de sistemas de información. Las auditorías de cabecera y de prescripción, realizadas a través de una aplicación, mejoraron la seguridad y la calidad del tratamiento, reduciendo las no conformidades a menos del 15%. Las videollamadas, que sumaron 3.000 llamadas, humanizaron el servicio. La conectividad entre sistemas de información garantizó la eficiencia en la gestión de datos. Los resultados de estas implementaciones demuestran la importancia de preparar el sistema de salud para emergencias y la efectividad de las innovaciones tecnológicas. El VHC no solo llenó vacíos en el proceso de atención de la COVID-19, sino que también sirvió como referencia, compartiendo conocimientos y fortaleciendo el sistema de salud. La experiencia HCV destaca la adaptabilidad y la innovación en la atención médica, ofreciendo perspectivas importantes para futuras crisis, impactando a la sociedad brasileña al mejorar la respuesta a las emergencias, aumentando la tasa de recuperación y optimizando los recursos.

Descritores: Tecnología Aplicada al Cuidado de la Salud; Evaluación de Tecnologías Sanitarias; Tecnologías de la Información; Pandemias de COVID-19; Gestión Hospitalaria.

Resumo

O Hospital de Campanha Vitória (HCV) em Curitiba emergiu como uma abordagem tecnológica e inovadora para enfrentar a pandemia de COVID-19, administrado pela Fundação Estatal de Atenção à Saúde. Durante seus 16 meses de operação, atendeu 4.119 pacientes, com uma taxa de recuperação de 76%. Durante o funcionamento, alguns recursos tecnológicos foram implementados para garantir uma efetividade assistencial. Dentre eles, incluíram auditorias beira-leito, videochamadas e integração de sistemas de informação. Auditorias de beira-leito e prescrição, realizadas por meio de aplicativo, melhoraram a segurança e a qualidade do tratamento, reduzindo inconformidades para menos de 15%. As videochamadas, totalizando 3.000 ligações, humanizaram o atendimento. A conectividade entre os sistemas de informação garantiu eficiência na gestão de dados. Os resultados dessas implementações demonstram a importância da preparação do sistema de saúde para emergências e a eficácia das inovações tecnológicas. O HCV não só preencheu lacunas na linha de cuidado da COVID-19, mas também serviu como referência, compartilhando conhecimentos e fortalecendo o sistema de saúde. A experiência do HCV destaca a adaptabilidade e inovação na saúde, oferecendo perspectivas importantes para futuras crises, tendo como impacto na sociedade brasileira uma melhoria na resposta a emergências, aumento da taxa de recuperação e otimização dos recursos.

Descritores: Tecnologia Aplicada à Assistência à Saúde; Avaliação das Tecnologias de Saúde; Tecnologias da Informação; Pandemias de COVID-19; Gestão Hospitalar.



Introduction

The Vitória Field Hospital (HCV) in Curitiba, managed by the State Foundation for Health Care and with support from United Health Group Brazil, treated a total of 4,119 patients, of which 3,138 were recovered, representing a recovery rate of 76%. The unit closed its activities due to the improvement in pandemic indicators in the region. HCV adopted innovative measures to improve the quality of care for patients with COVID-19, including the implementation of two audits: bedside and prescription audits, carried out through an application with real-time data transmission. These audits ensured the verification and safety of the procedures carried out, diagnosing weak points in care and allowing quick interventions in cases of failure. In addition, technology was used to review processes and identify opportunities for improvement¹⁻³.

Another highlight of the hospital was the use of video calls to bring patients closer to their families since the presence of companions during hospitalization was not permitted due to the high transmissibility of the disease. Over the course of seven months, more than 3,000 video calls were made, providing emotional comfort to both patients and their families^{2,3}.

This article aims to analyze the experience of Vitória Field Hospital in Curitiba during its 16 months of operation in facing the SARS-CoV-2 pandemic. The objective is to describe the care provided to 4,119 patients, evaluate the effectiveness of technological innovations, such as bedside and prescription audits, and the use of video calls to bring patients and families closer together. The study aims to highlight the relevance of the hospital, provide perspectives and subsidies to improve the response to health crises, and contribute to scientific knowledge in public health.

Methodology

The methodology was based on a detailed description of the hospital's experience, with an emphasis on patient care, recovery rate, technological innovations and the use of video calls. Data was collected retrospectively and analyzed to identify trends and significant results. The aim is to describe the care provided to 4,119 patients, evaluate the effectiveness of technological innovations, such as bedside and prescription audits, and the use of video calls to bring patients and families closer together.

This is an experience report, with a qualitative and descriptive approach, carried out in the first field hospital for the treatment of people with COVID-19 in the city of Curitiba. The experience described here carried out from the first of June 2020 until the 3rd of September 2021, addresses the multidisciplinary experience of the healthcare team and managers when working in the hospital. As this is an experience report, considering the protocols² established and followed by the team working at the field hospital, this study did not require approval by the Research Ethics Committee, since there was no collection of primary data with human beings and also uses a Letter of Consent signed by a representative of the Municipality of Curitiba/Municipal Health Secretariat, authorizing this study and use of the name of the institution.

Experience Report

The results demonstrate the significant impact of Vitória Field Hospital during the fight against the COVID-19 pandemic⁴. Over the almost 16 months of operation, the hospital treated a total of 4,119 patients with COVID-19, 76% of whom had a successful recovery. Among HCV's main innovative contributions was the implementation of the audit service and telehealth for communication between family members and patients, as well as with the medical team.

The audit technology implemented at HCV was one of the main innovations that significantly contributed to the hospital's success in facing the COVID-19 pandemic⁴. This technological approach consisted of implementing two audits: the bedside audit and the prescription audit, both carried out through an application with real-time data transmission.

The bedside audit was conducted daily by hospitalist nurses, aiming to verify the safety of the procedures performed and the adequacy of the equipment used to care for patients. Through the application, nurses recorded relevant information in real-time, allowing the hospital management team to have immediate access to the data. This approach made it possible to quickly identify failures in care or equipment, which allowed immediate interventions to avoid potential complications in patients.

The prescription audit took place weekly in randomly selected patients. In this resource, medication prescription data was cross-referenced with notes in the patient's electronic medical record, ensuring that medications were administered correctly and recorded appropriately. This process helped to reduce prescription non-conformities to values below 15% in the months following its implementation, ensuring greater safety in the use of medicines and minimizing potential errors.

Both audits were instrumental in improving the safety and quality of care provided to patients at HCV. The application technology allowed for a more agile and efficient approach to data collection and analysis, enabling the identification of weak points in care and immediate interventions to ensure patient safety.

Another technological resource implemented aimed to ensure better patient interaction with the outside world. The video calling technology implemented was an innovative and humanized measure that played a crucial role in tackling the COVID-19 pandemic⁵. With the high transmissibility of the virus, the presence of companions during hospitalization was not permitted, which led to the need to find solutions to bring patients closer to their families and provide emotional support during the hospitalization period.

Using electronic devices, such as smartphones or tablets, the HCV team facilitated video calls between hospitalized patients and their loved ones. This technology allowed them to see and hear their family members, establishing significant visual and emotional contact during the period of hospital isolation.

Over the months of the hospital's operation, more than 3,000 video calls were made, which demonstrates the



importance and effectiveness of this technological approach in promoting the emotional well-being of patients and their families. Video calling provided a sense of closeness and support during a challenging and often lonely time, allowing patients to share their experiences and receive words of encouragement and care from their loved ones.

In addition to improving patients' emotional well-being, video calling technology has also had positive impacts on communication between healthcare staff and families. Family members were able to monitor patients' progress and obtain updated information about their health status directly from the medical team, which contributed to greater transparency and trust in the treatment process.

The use of video calling technology was proof of how technological innovation can play a fundamental role in humanizing care in times of crisis. This approach allowed patients to feel more welcomed and supported during their hospitalization period, while their families also found comfort in knowing their loved ones were being well cared for.

In addition to the audit and video call service, HCV stood out as a source of innovation not only in the care of patients with COVID-19, but also in the scope of teaching and research. During its operation, HCV became an important training center for health professionals, both from the unit itself and from other municipalities and institutions.

One of the main innovations in this sector was the implementation of training and qualification programs for the health team carried out by the Human Training and Development Center (CECADEH), the sector responsible for teaching FEAS. With the aim of ensuring quality and safe care for patients, courses, workshops, and clinical simulations were offered to update and improve the knowledge and skills of professionals. This approach contributed to the standardization of practices and protocols², as well as to the development of technical and behavioral skills necessary to face the pandemic.

The opening of HCV to teaching and research also provided a learning environment for students and residents from various areas of healthcare. Interns and residents had the opportunity to experience and learn in a crisis scenario, gaining practical experience and adapting their skills to emergency demands. Furthermore, HCV became a reference for other municipalities and health institutions that faced similar challenges in managing the pandemic. The innovative practices adopted by the hospital were shared with other health units, contributing to the dissemination of good practices and strengthening the response to COVID-19 at a regional and national level.

Discussion

Faced with the unprecedented challenge posed by the COVID-19 pandemic, Hospital Vitória (HCV) stood out as a notable reference in the implementation of field hospitals, offering an experience that goes beyond the conventional. Analyzing HCV's response in comparison with two other field hospitals - one in the Metropolitan Region of Porto Alegre¹ and the other in Luziânia⁵ - it is possible to identify nuances that highlight HCV's exceptional approach, not only meeting

common expectations, but also introducing innovative practices.

The three hospitals shared a solid foundation of operational protocols. Dynamic management of beds and resources to adapt to fluctuating demand was a common feature. The emphasis on infection prevention, with strict hygiene and isolation measures, reflected a collective commitment to the safety of patients and healthcare professionals.

Interdisciplinary collaboration, vital for a comprehensive approach to care, was a constant in the three cases. However, HCV stood out for incorporating advanced technologies, such as telemedicine systems, providing a faster and more efficient response to clinical needs. Furthermore, HCV adopted personalized strategies for the patient, including initiatives aimed at emotional and psychosocial support, recognizing the importance of a holistic approach.

HCV also excelled in the effective use of resources and robust leadership. Operational efficiency, driven by effective leadership and a collaborative approach between teams, contributed to consistent resolution. This agility in decision-making and resource allocation was a notable difference when compared to other field hospitals.

In summary, HCV not only met the guidelines established for field hospitals, but exceeded these expectations, introducing significant innovations. The integration of technology, the individualized approach, and operational efficiency make HCV an exemplary model for future projects in the healthcare sector. Lessons learned during this experience not only strengthen pandemic response capacity but also shape the continued evolution of the health system, preparing it to face emergency challenges with resilience and excellence.

Conclusion

The experience of Vitória Field Hospital highlights the essential capacity for adaptation and innovation in the health sector during times of crisis. Over the almost 16 months of its operation, HCV has become a notable example of an effective response to the COVID-19 pandemic, offering significant perspectives to improve future coping strategies.

The positive results achieved by HCV contribute significantly to scientific knowledge in public health, reinforcing the importance of field hospitals as valuable tools in combating health crises. The recovery rate of patients reflects the commitment and quality of care provided, while the deactivation of the hospital due to the improvement in pandemic indicators in the region highlights its crucial role in stabilizing the epidemiological situation in Curitiba.

One of the most innovative aspects of HCV was the technologies implemented to improve the quality of care. Bedside and prescription audits proved to be essential tools to ensure safety and improve the quality of procedures performed, reducing potential risks to patients. Furthermore, the use of video calls humanized care, providing emotional comfort to both patients and their families, despite restrictions on companions imposed by the high transmissibility of the disease.



Considering the relevance and effectiveness of the technologies implemented, HCV has become an inspiring example for other health institutions in Brazil. The innovative approach adopted by HCV demonstrated how field hospitals can play a fundamental role in facing pandemics, showing that it is possible to combine technical knowledge and adaptability to guarantee quality assistance in times of crisis. The legacy of HCV, under the management

of the State Health Care Foundation (FEAS), remains an example of excellence and drives the search for a more resilient and safe Unified Health System (SUS) in the face of possible health challenges. The success of HCV and its innovations represent a valuable contribution to improving the health system's response to emergency situations, aiming for a more prepared and confident future in protecting the health of the Brazilian population.

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