

# Use of digital technologies for training air health teams: knowledge management

**RESUMO** | Objetivo: Descrever a experiência do processo de criação e compartilhamento dos treinamentos em formato de vídeos para capacitar as equipes de transporte inter-hospitalar aeromédico, no início da pandemia. Método: Trata-se de um relato de experiência, sendo realizado em abril de 2021, sobre a criação de vídeos educativos com intuito de capacitar as equipes no atendimento de casos suspeitos ou confirmados de COVID-19. Resultados: Os vídeos foram elaborados pela equipe multiprofissional, no início da pandemia. A capacitação por 'Ensino a Distância Emergencial' tornou-se a melhor escolha. Foram elaborados 10 vídeos, com tempo médio de elaboração de 639 minutos, utilizada a plataforma digital do YouTube®, disponibilizados para equipes, que aderiram 100%. Conclusão: Fica evidente a importância da qualificação, com a finalidade de reconhecer efetivamente as particularidades do atendimento no ambiente aeroespacial, alinhados a gestão do conhecimento. **Descritores:** COVID-19; Gestão do Conhecimento; Transporte Aeromédico; Vídeos educativos; Relato de caso.

**ABSTRACT** | Objective: To describe the experience of the process of creating and sharing training in video format to train air medical inter-hospital transport teams at the beginning of the pandemic. Method: This is an experience report, carried out in April 2021, on the creation of educational videos to train teams in the care of suspected or confirmed cases of COVID-19. Results: The videos were prepared by the multidisciplinary team at the beginning of the pandemic. 'Emergency Distance Learning' training became the best choice. Ten videos were produced, with an average time of 639 minutes, using the YouTube® digital platform, made available to teams, which adhered 100%. Conclusion: The importance of qualification is evident, in order to effectively recognize the particularities of service in the aerospace environment, in line with knowledge management. **Descriptors:** COVID-19; Knowledge management; Aeromedical Transport; Educational videos; Case report.

**RESUMEN** | Objetivo: Describir la experiencia del proceso de creación y puesta en común de capacitaciones en formato de video para capacitar a equipos de transporte aéreo médico interhospitalario al inicio de la pandemia. Método: Se trata de un informe de experiencia, realizado en abril de 2021, sobre la creación de videos educativos con el fin de capacitar a los equipos en la atención de casos sospechosos o confirmados de COVID-19. Resultados: Los videos fueron elaborados por el equipo multidisciplinario al inicio de la pandemia. La formación "Aprendizaje a distancia de emergencia" se convirtió en la mejor opción. Se produjeron diez videos, con un tiempo promedio de 639 minutos, utilizando la plataforma digital YouTube®, puestos a disposición de los equipos, que se adherieron al 100%. Conclusión: La importancia de la calificación es evidente, para reconocer efectivamente las particularidades del servicio en el entorno aeroespacial, en línea con la gestión del conocimiento. **Descritores:** COVID-19; Conocimiento administrativo; Transporte Aeromédico; Videos educativos; Reporte de un caso.

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**Received:** 22/09/2021

**Approved:** 08/10/2021

## INTRODUCTION

At the end of 2019, on the Asian continent, a virus called Coronavirus (COVID -19) was identified, which causes respiratory infections and has a high rate of transmission, modifying daily life in the world. 1 For health professionals, in particular, the aerosol-generating procedures were the main drivers of contagion and were an integral part of the care routine. 2

In this perspective, for reasons of safety for the care teams, distancing protocols were applied according to the reality of the service and training through " (ERT) 3 it became an indispensable tool for training, they were not part of the scope and were adapted to this new reality.

The culture, the organizational

environment influences and involves people, systems, processes and, consequently, shapes knowledge management. According to research, knowledge sharing can be productive and based on mutual respect and trust. 4,5

The present experience began with a discussion between a group of nurses and physicians specializing in air transport of critically ill patients. And the guiding question arose: How to train the team to care for patients with suspected or confirmed cases of COVID-19, without violating the isolation rules?

Thus, this experience report aims to describe the experience of the process of creating and sharing training in video format to enable teams of inter-hospital aeromedical transport at the beginning of the pandemic.

## METHOD

### Type of study

This is an experience report, with a descriptive approach, on the creation of educational videos with the aim of training teams in the care of suspected or confirmed cases of COVID-19, through videos shared on digital platforms.

Descriptive research expresses the characteristics of the specific population or phenomenon that will be studied, conceptualizes its nature and makes an analogy between the variables. "It is not committed to explaining the phenomena it describes, although it serves as a basis for such an explanation". 6 Image recordings were performed during the recordings, by the authors.

### Scenario

This experience report comes from a private company that provides specialized aeromedical inter-hospital transport services to healthcare users, headquartered in Belo Horizonte, in the State of Minas Gerais, Brazil.

The culture, the organizational environment influences and involves people, systems, processes and, consequently, shapes knowledge management. According to research, knowledge sharing can be productive and based on mutual respect and trust.

### Selection criteria

The successful experience of a group of employees of the aeromedical transport company was selected, who carried out the training of the teams through the YouTube® digital platform and respected safety protocols at the beginning of the pandemic.

### Data collection

A series of precautions were necessary to protect all health professionals and it would be up to each team member to understand the dangers involved and, more than ever, the correct execution and mutual care with everyone involved in the conduct of the procedures, in the onset of the pandemic.

Tasks were divided according to personal ability, namely: directing, acting, producing, filming, scripting, editing and proofreading. The videos were made in March and made available to the team at the beginning of April of the year 2020.

Thus, a group of five expert collaborators, created educational videos, demonstrated the procedures recommended by international and national guidelines, for individual protection and better care for patients with suspected or confirmed cases of coronavirus infection.

### Data analysis

The videos were edited by a professional nurse from the group of specialists who have expertise in media editing processes. The work began with the raw files, with the script, coloring, audio and insertion of subtitles being adjusted for a better understanding of the teams. After editing, it was revised by a professional nurse from the team, ensuring the quality of processes and procedures. The dissemination of the images was authorized by the participants by signing the authorization term for the use of images.

### Ethical Aspects

This is an experience report, carried out through realistic simulations, there was no research involving human beings and information in the public domain. Therefore, there was no need for consideration by the Research Ethics Committee.

## RESULTS

Of the five employees responsible for preparing the educational videos, three nurses and two doctors participated. There was the collaboration of two track assistants so that they could compose all the actors in the care process.

The multi-professional team got together and started the project to create digital content, as there was a restriction on face-to-face training in the initial period of the pandemic. Thus, training through 'Emergency Remote Teaching' (ERT) has become a valuable tool. 3

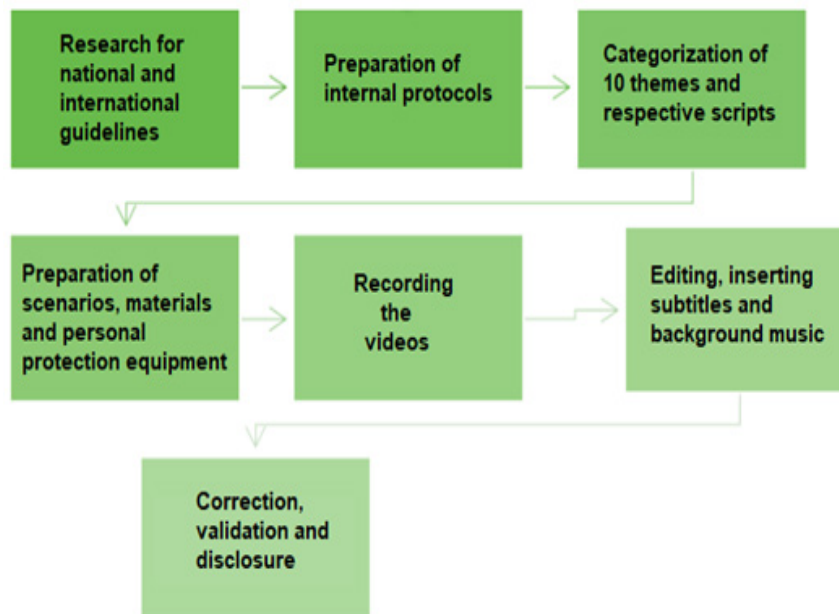
The technical videos developed are focused on the care of suspected or confirmed patients with COVID-19 and for their production there were the steps informed in flowchart 1.

Given the above, employees effectively participated in almost all processes, except editing. The videos were exclusively edited by a professional nurse, who, in possession of the raw material, made all the necessary adjustments to maintain the technical context, including subtitles for better understanding of the teams.

In this context, the most urgent topics to be addressed were previously discussed and, consequently, all videos were filmed with a focus on the care of patients with suspected or confirmed cases of COVID-19, choosing the YouTube® digital platform, as described in Table 1.

The intersection between the themes of health training, knowledge management and critical patient care are based on operational guidelines that guide professionals to optimize

**Flowchart 1. Description for the production of videos.**



Source: Prepared by the authors, 2021.

**Table 1- Average time in minutes for the preparation of videos for distance learning training for the air transport team, BH, MG-Brazil. 2020.**

	Videos made available for ERT training - COVID-19	Time/minutes
1	Hand hygiene with 70% alcohol	270
2	Dressing of the medical team and pilots, with the use of overalls with hood to protect operations with biological risk, boots and PPE*	720
3	Disassembly of the medical team and pilots, with the use of overalls with hood to protect operations with biological risk, boots and PPE*	2160
4	Clothing with waterproof coat and PPE* for track assistants	360
5	Removal of waterproof jacket and PPE* for track assistants	360
6	Maca disinfection in the post-flight phase	360
7	Aircraft disinfection in the post-flight phase	540
8	Cricothyroidotomy puncture technique	540
9	Use of drugs for orotracheal intubation (rapid sequence)	540

10	Care for the preparation and procedure of orotracheal intubation	540
	Average time/minutes	639
	Total for elaboration/minutes	6390

\*PPE's: Personal protective equipment  
Source: Prepared by the authors, 2021.

Figure 1- Dressing of the medical staff and pilots, wearing overalls with hood for protection from biological risk operations, boots and personal protective equipment

Figura 2- Care for the preparation of orotracheal intubation, using a waterproof coat and personal protective equipment.



Source: Prepared by the authors, 2021.

the quality of care, and, among other factors, ensure patient safety. Consequently, by using the guidelines as a guiding axis, with the necessary updates, professionals can maintain the individuality of care and the humanization of care. 7 This experience totaled an average workload of 6390 minutes.

Care for critically ill patients must be based on updates, on national and international guidelines and, consequently, they can collaborate to optimize safety and quality. And realistic simulations are important tools to improve these processes, as we can see in Figures 1 and 2.

Furthermore, the authors Salles and Matos (2017) reflectively corroborate,

as “complexity makes us recognize what (...) we still need to advance in the integration of knowledge, areas of knowledge and between the true role to be redimensioned in relation to science and technology in this unification with society”. For, knowledge management must take into account the multiplicity of factors related to human beings, their high complexity, cultural factors, the level of knowledge, the most different assumptions and their plurality. 8

In addition to all these processes, the contents of the 10 videos were made available on the YouTube® platform, by the nurse responsible for editing and the respective email addresses were sent to health (doctors and nurses)

and operational management (track assistants,) collaborators pilots and co-pilots). Since, there was 100% adhesion of employees in health and operational management.

Finally, knowledge management can provide useful, quality information, create evidence on the complexity of contexts and optimize the mastery of knowledge of advanced practices for multidisciplinary teams. 9-10 It is extremely important that new researches are carried out to innovate and fill the knowledge gap in the health context, considering the different perspectives.

## CONCLUSION

The importance of qualification is evident, in order to effectively recognize the particularities of service in the aerospace environment and, therefore, improve the quality of service in aeromedical transport, in line with knowledge management.

We can thus conclude that transformative leaders encourage employees to give importance to assimilate new processes and to be interested in improving their qualifications, optimizing their practices and achieving organizational goals.

Therefore, this experience report aimed to describe the experience of the process of creating and sharing training in video format to enable teams of inter-hospital aeromedical transport at the beginning of the pandemic.

Ten videos were produced, with an average time of 639 minutes, using the YouTube® digital platform, made available to teams, which adhered 100%.

We reiterate that there is a need to carry out further studies so that we can expand our knowledge about knowledge management focused on the field of health, especially in the field of aerospace medicine.

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