

# Lessons Learned in the Transportation System Following the Covid-19 Pandemic

*Lecciones aprendidas en el sistema de transporte tras la pandemia de Covid-19*

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## Abstract

Interview with the Transportation Safety Board (TSB) research team that conducted the agency's first-ever study of an exceptional event. The work, which began in 2020 and ended in 2022, addresses crisis management practices in each mode of transportation.

The declaration of the pandemic by the World Health Organization (WHO) led the Argentine State to make exceptional and emergency decisions. When the National Executive Power ordered by decree the adoption of measures to contain the spread of the new coronavirus in the country, among other things, transportation drastically reduced its frequency and even interrupted its continuity. In this context, the JST initiated a study in October 2020 and set out to learn about and systematize the crisis management strategies and practices implemented by the constituent organizations of multimodal transport to maintain operational continuity and the operational and health safety of workers in Argentine public transport.

## Resumen

Entrevista al equipo de investigación de la Junta de Seguridad en el Transporte (JST) que llevó adelante el primer estudio de un evento excepcional en el organismo. El trabajo, que se inició en 2020 y finalizó en 2022, aborda las prácticas de gestión de crisis en cada modo de transporte.

La declaración de la pandemia por parte de la Organización Mundial de la Salud (OMS) llevó a que el Estado argentino tomara decisiones excepcionales y de emergencia. Cuando el Poder Ejecutivo Nacional dispuso por decreto la adopción de medidas para contener la propagación del nuevo coronavirus en el país, entre otras cosas, el transporte disminuyó drásticamente su frecuencia y hasta interrumpió su continuidad. En ese contexto, la JST inició un estudio en octubre del 2020 y se dispuso a conocer y sistematizar las estrategias y prácticas de gestión de crisis que pusieron en marcha las organizaciones constitutivas del transporte multimodal para mantener la continuidad operativa y la seguridad operacional y sanitaria de los trabajadores en el transporte público argentino.

### **How and when did the Agency identify the need for such an investigation?**

The declaration of a pandemic by the World Health Organization (WHO) led the Argentine State to take exceptional and emergency decisions. When the National Executive Branch ordered by decree the adoption of measures to contain the spread of the new coronavirus in the country, among other things, transport drastically decreased its frequency and even interrupted its continuity.

In this context, the Transportation Safety Board (Junta de Seguridad en el Transporte, JST) initiated a study in October 2020, and set out to know and systematize the crisis management strategies and practices implemented by the constituent organizations of multimodal transport to maintain the operational continuity, and the safety and health of workers in Argentine public transport.

### **What does it imply that this was the first JST's study linked to an exceptional event?**

It was not only the first exceptional event investigated by the JST, but also the first wide-ranging study. Particularly, in the context of the health crisis faced by the international community, our agency identified the need to carry out a study that extends its field of application to exceptional events, in line with the activity carried out by accident investigation agencies, and studies carried out by other countries, such as Finland and the Netherlands.

When we talk about an exceptional event, we refer to an event of unusual gravity (which may or may not be an accident), with consequences that impact on the basic functions of society, such as operational continuity and the provision of essential services: ensuring safety, health protection and environmental care, among others. In the face of these events, governments can define states of emergency, which involve restrictions that limit, among other things, people's freedoms of movement, assembly, and transport.

### **How were the team and the primary working tools created?**

The team responsible for the project was formed with members of the Studies Area of the National Department of Accidentological Evaluation and Monitoring of the JST. The primary lines of work, the methodology, the conceptual framework, and the study's goals were then outlined. Even though the COVID study (as we refer to it informally) began as a fledgling, constrained initiative, we quickly understood that its scale would exceed the abilities of the coordinating team. As a result, representatives from all of the Agency's modal departments were included.

We can name the "Collaborative Network" and the "Lessons Learned System" as the study's two key constituent tools. The first speaks of a network of players who are included in the investigation in order to cooperate and contribute their skills and information. The key players in the Argentine transport system were identified for this purpose using the actor mapping technique. Normative, regulatory, and supervisory organizations, public and private service providers, transportation chambers, and labor unions were all included as network actors. Over 25 public and private organizations currently make up the network.

Closely related to the network, the Lessons Learned System was the study's other innovative methodological tool. The lessons learned that were identified throughout the days of articulation between the JST and the network's actors represent the expertise and knowledge that these actors have gained with regard to managing pandemic crises. It is an open information system that records and makes organizational experience accessible to support efficient management in events with comparable characteristics in the future.



### **What was the theoretical framework used for the study?**

The investigation found several ideas that were crucial to completing the various stages of the work, in addition to the idea of "exceptional event" (mainly the survey, systematization and analysis). The assumption used at the outset was that the epidemic was a "regular accident". Normative or systemic accidents, in the opinion of sociologist Charles Perrow, are characterized by being unanticipated and unavoidable.

In addition to the concept of "exceptional event", the research recovered various notions that were central to carrying out the different stages of the work (mainly the survey, systematization and analysis).

The starting point was to consider the pandemic as a “normal accident”. According to sociologist Charles Perrow in his book *Normal Accidents: Living with High-Risk Technologies*, normal or systemic accident is characterized by being unpredictable and inevitable. Unexpected couplings and interactions are common in complex systems, which suggests that sociotechnical systems are naturally prone to them.

Analysis models for systemic accidents must be sensitive to their characteristics. Systemic accident analysis departs from linear cause-effect models and accident explanations based on single failures or a fault tree, as proposed by Charles Perrow and Erik Hollnagel.

The system is described in analyses based on the systemic model, followed by the circumstances that may lead to accidents. With the help of this model,

we may comprehend the idea of “accident” as an occurrence brought on by the unforeseen combination of several failures in a complicated system. Instead of focusing on identifying the reasons behind accidents or pursuing people at fault, the type of analysis under consideration looks for structural circumstances that explain the triggers.

**Which were the study’s key conclusions?**

We can highlight the following important conclusions:

- The importance of having a scientific and technological system, as well as a health system, which can serve as pillars in the creation of plans and responses to this kind of events.
- The significance of state service providers, whose presence allowed to respond to the logistical needs of the populace based on government strategies.
- The lack of crisis plans to cope with events with the characteristics of the pandemic pushed actors in the transportation system to establish emergency plans, which at first lacked –at least in part– standardized training and procedures to manage this type of crisis.
- The crucial role of press and communication departments of organizations and providers in educating the public about the official health policy; providing them with resources and trained professionals is key for the development of clear and efficient strategies.

Figure 1. Process of documenting lessons learned



Source: JST, 2022.

Figure 2. Main actors of the collaborative network developed for investigation.



Source: JST, 2022.



- The positive effect of decentralizing Operations Control Centers—which are typically found in urban regions with dense populations—helped to ensure service continuity. These centers are places where service-related information is monitored in order to respond quickly to crises, damages, etc.
- There were numerous instances where service providers, the government, and other agencies (including the Argentine Ministry of Security) did not coordinate to establish the criteria of stay, access to services, accommodation, and circulation of essential workers. Because of this, it was difficult for key personnel to move about, stay, and access basic services.
- The positive effect of the existence of spaces of articulation between the public and the private, which contributed to the fulfillment and operationalization of government measures by the providers.
- The importance of control bodies and providers having risk management strategies that accompany the regulations issued during the pandemic.
- The structural hazard posed by fatigue in all modes of transport. Given this, the implementation of strategies based on a fatigue risk management system would be essential.
- The negative effects of the crisis on the mental health of workers, who had to face situations of fear, anxiety and stress. In this context, psychological cabinets within organizations became of central importance. In addition, the trade union organizations articulated various lines of action aimed at the psychological accompaniment of the staff.
- Serious difficulties, particularly in road and rail modes, in meeting the maximum limit of peo-

ple transported, social distancing and the exclusive transport of essential workers. This showed that any restriction of access to public transport should be based on the presence and control of security force personnel, which did not happen in all cases.

#### **Finally, what elements of the study can serve as a basis for contributing to similar events in the future?**

We believe that all the findings and results of the study can contribute to addressing, in a better way, the occurrence of events with characteristics similar to the crisis we experienced. We highlight those elements or conclusions involved in the preparation of crisis plans, establishment of public-private articulation instances, residual risk management systems that accompany the formulation of regulations, development of ad hoc fatigue management systems, the virtualization of training, and the development of psychological support devices for workers by public bodies and providers, among others.

Likewise, we understand that this work and the different lines of investigation that make it up should not be read as a final study of the coronavirus crisis in Argentine transport. On the contrary, two of the constituent tools of this study —the collaborative network and the system of documentation of lessons learned— are operational, as continuous strategies for collecting, analyzing and sharing information and experiences.

In turn, the study intends to be sent to the Ministry of Transport including recommendations, in order to contribute to the design of transport policies aimed at optimizing crisis management in the face of future exceptional events, as well as promoting opportunities for improvement in the design of future crisis plans and risk management of the Argentine transport.