

Meeting the Challenges of International Crises: The Experience of the Iranian Blood Transfusion Organization

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ABSTRACT

Crises require a timely and well-prepared response by health services, especially those that are directly engaged with the lives of the patients such as blood services. The Iranian Blood Transfusion Organization as a single national authority of blood transfusion has left many crises behind. In this study, we examined the main international crises that the blood transfusion organization has faced during its 44-year history and objectively evaluated the methods for crisis risk reduction, both administrative and operational, all of which have led to fundamental advances in the organization. By proper planning and effective strategy setting, the Iranian Blood Transfusion Organization has managed to cope with international threats and in some cases has turned threats into opportunities to implement new, permanent administrative and operational strategies. It is not prudent for blood transfusion centers to develop their disaster risk-reduction strategies on an individual-country basis in a world where global risk and crisis factors are rapidly increasing. Reduction of risk for blood transfusion centers must become a strategic priority nationally and globally. (*Disaster Med Public Health Preparedness*. 2019;13:410-413)

Key Words: blood transfusion, blood donation, crisis management, disaster medicine, Iran-Iraq War, HIV, hepatitis, recruitment campaign

A crisis is an event or series of events representing a critical threat to the health, safety, security, or well-being of a community, usually over a wide area.¹ Crises can affect one or more areas in a country or an entire country, or they can spill over the borders and immediately involve unexpected international challenges.² Crises usually lead to unstable situations, and they can threaten an organization's goals and performance and have profound implications for its relationship with stakeholders.³ The Iranian Blood Transfusion Organization (IBTO) was established in 1974 as a central authority of blood transfusion requirements in Iran. Like many other organizations, IBTO has witnessed many organizational- and operational-level challenges, including those of an international nature. However, by proper planning and effective strategy setting, IBTO has managed to cope with the international threats, and in some cases has turned them into new opportunities.

IRAN-IRAQ WAR: 1980-1988

The first international crisis that challenged IBTO occurred only 6 years after its establishment, when the Iran-Iraq War began in 1980. The war, which lasted 8 years, was a planning and sustainability nightmare on a daily basis; it was a struggle to obtain sufficient

sources of blood and blood products to meet the massive blood demands of both military and civilian casualties. However, the outbreak of war proved to act as a stimulus for the IBTO to provide a sustainable planning process to ensure the required number of voluntary blood donations, both during the war and in subsequent crisis events.

Iran is a religious country, and the war began only 1 year after the Iranian Islamic Revolution in 1980, when the motivation of the people to help their country was at its peak. In order to save the lives of the wounded, civilians donated blood voluntarily. These actions and motivations of the civilian population promoted a culture of voluntary blood donation within the Iranian society that has lasted through the years with every crisis event. In 1974, the year the IBTO was established, 12 354 blood units were collected countrywide; by the conclusion of the Iran-Iraq War and at the end of 1987, this donation rate had increased by more than 60 times, reaching 746 868 units per year.⁴ New mobile and fixed blood collection centers were also established along the Iraq borders in order to meet blood demands during the war.⁵ Finally, in 2007, the IBTO succeeded in reaching the goal of being the first country in the region to attain 100% voluntary nonremunerated blood donations.⁶

HIV AND HEPATITIS C TRAGEDY

In the 1980s, following worldwide reports indicating the risk of spread of new emerging disease such as HIV (human immunodeficiency virus) and hepatitis C infection through contaminated blood products,⁷ the IBTO faced its second crisis when more than 200 hemophiliacs were infected with HIV and hepatitis C due to imported contaminated plasma-derived medicines from a French pharmaceutical company. The tragedy had grave social and economic consequences for the Iranian health system.⁸

As a response, the IBTO decided to fortify its national capability and capacity in order to become self-sufficient in producing plasma-derived products, to prevent the reoccurrence of such a crisis. In 2005, Iran became the first country in the region to enter into a plasma fractionation contract with European countries.⁴ In 2016, more than 213 033 liters of plasma was sent to Europe for fractionation (Iranian Blood Transfusion Organization Statistical Center, written communication, May 6, 2017). Subsequently, in 8 private centers, currently under the supervision of the IBTO and the Iranian Food and Drug Administration, an additional 200 000 liters of plasmapheresis products are now being provided.

According to a World Health Organization report, Iran managed to save more than US \$11 million by meeting part of its national needs through contract fractionation in 2011.⁹ The rate of direct monetary savings is estimated to have reached US \$17 million in 2016.

In addition, in order to verify the quality of Iranian plasma and the increased safety of blood products in Iran, regular audits are performed by European institutions such as the Paul Ehrlich Institute and other fractionator companies. These professional associations also provide a unique training opportunity for local regulators and serve as an educational tool to build up the required knowledge base before possible establishment of a domestic fractionation plant.¹⁰

UNITED NATIONS ECONOMIC SANCTIONS

The IBTO faced its third international crisis from 2006 to 2015, when the United Nations Security Council passed Resolution 1696 and imposed severe economic sanctions against Iran. Although the imposed sanctions were not supposed to have any impact on humanitarian goods such as pharmaceuticals, their indirect effect on people's access to health care and drugs was notable.¹¹

The IBTO is dependent on imports of essential equipment and devices such as blood bags, screening kits, ELISA (enzyme-linked immunosorbent assay) automation devices, and a myriad of other supplies. In order to mitigate the negative impacts of the sanctions, the IBTO began negotiations with

local producers in order to meet portions of its requirements. In line with Iran's sixth development plan (2016-2021) to encourage the production and use of domestic products, the IBTO decided to gradually replace its foreign-made equipment and devices with similar domestically made products.

In 2016 and 2017, the IBTO has purchased almost US \$33 million in services and equipment from domestic knowledge-based companies. In addition, by the joint investment of foreign companies, some domestic producers are now able to produce high-quality products such as blood bags under the names of the original foreign brands. In 2017, after 46 years of imports, local producers succeeded in meeting 100% of the IBTO's demand for blood bags.¹²

DISCUSSION AND RECOMMENDATIONS

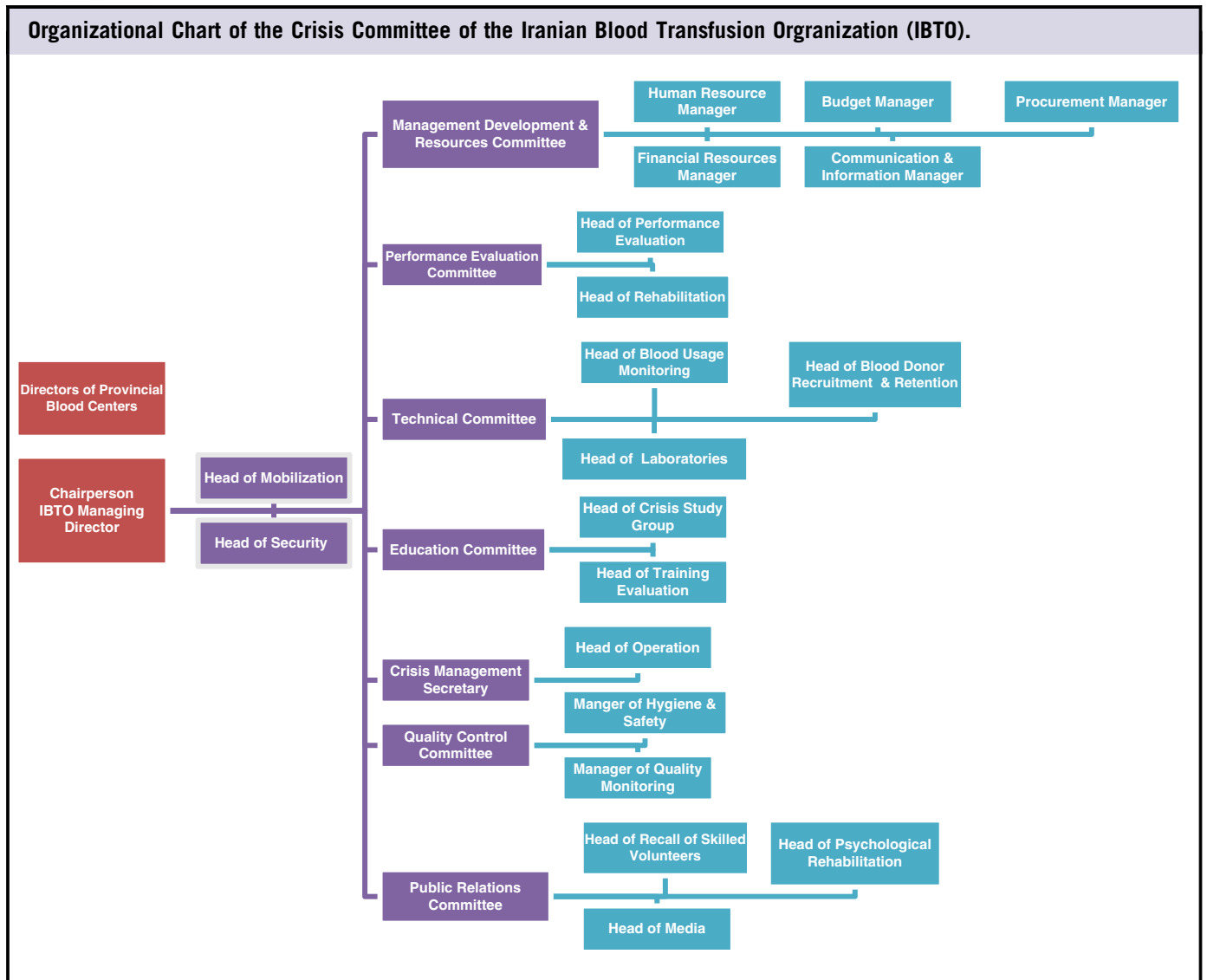
In the changing global environment, preparing for and preventing crises is vital, especially in health issues. The ability to analyze organizational strengths and weaknesses, and if possible turn the threats into opportunities, is even more important. This is especially crucial for organizations that both the parent country and the regional population are dependent on for daily needs as well crisis preparedness, prevention, response, and recovery/rehabilitation. The IBTO learned painful but crucial and valuable lessons with each and every crisis event.

In order to maximize its performance during crises, the IBTO has recently formed a Crisis Committee (Figure 1), whose delegates include a variety of experts and authorities with multidisciplinary backgrounds.

The committee is in constant communication and close collaboration with the Iranian Ministry of Health, the Iranian Red Crescent, the Joint Staff of the Army of the Guardians of the Islamic Revolution, and the National Emergency Center. One of the initiatives of this committee is to establish a database of volunteers. The members of the volunteer network are constantly trained and updated so that they will be valuable resources in emergencies.

Because health-related crises usually are complex and require the cooperation of many different stakeholders, a timely and appropriate response can only occur if the various agents involved are coordinated and properly prepared. Among these agents are foreign policy-makers. Usually, health has the weakest voice in influencing foreign policy-makers, and they may not support long-term prevention and protection strategies.¹³ Dr Margaret Chan, Ex-Director General of the World Health Organization, stated, "The health sector had no say when the policies responsible for these crises were made. But health bears the brunt." This is especially important in developing countries such as Iran, where knowledge and practice on the

FIGURE 1



convergence of foreign policy and health issues is generally lacking.

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REFERENCES

1. World Health Organization. Risk reduction and emergency preparedness. WHO Six-Year Strategy for the Health Sector and Community Capacity Development. http://www.who.int/hac/techguidance/preparedness/emergency_preparedness_eng.pdf (1 .07.2011). Published 2007. Accessed August 28, 2017.
2. World Health Organization. International Crises. <http://www.who.int/hac/crises/international/en/>. Accessed August 28, 2017.
3. Bundy J, Pfarrer MD, Short CE, et al. Crises and crisis management: integration, interpretation, and research development. *J Manag.* 2016;43(6):1661-1692.
4. Pourfathollah AA, Hosseini Divkolaye NS, Seighali F. Four decades of National Blood Service in Iran: outreach, prospect and challenges. *Transfus Med.* 2015 Jun25(3):138-143.
5. Abolghasemi H, Maghsudlu M, Amini Kafi-Abad S, et al. Introduction to Iranian Blood Transfusion Organization and Blood Safety in Iran. *Iran J Public Health.* 2009;38(suppl 1):82-87.
6. Maghsudlu M, Nasizadeh S, Abolghasemi H, et al. Blood donation and donor recruitment in Iran from 1998 through 2007: ten years' experience. *Transfusion.* 2009 Nov49(11):2346-2351.

7. Angelotta C, McKoy JM, Fisher MJ, et al. Legal, financial, and public health consequences of transfusion-transmitted hepatitis C virus in persons with haemophilia. *Vox Sang*. 2007 Aug;93(2):159-165.
8. Cheraghali AM, Eshghi P, Abolghasemi H. Social consequences of infected haemophilia cases in the Islamic Republic of Iran. *East Mediterr Health J*. 2011 Jun;17(6):552-556.
9. World Health Organization. Improving Access to Safe Blood Products Through Local Production and Technology Transfer in Blood Establishments. http://www.who.int/phi/publications/blood-prods_technology_transfer.pdf. Published 2015. Accessed August 28, 2017.
10. Cheraghali AM. Cost effectiveness of Iran national plasma contract fractionation program. *Daru*. 2012;20(1):63. doi: 10.1186/2008-2231-20-63.
11. The Impact of Sanctions on the Iranian People's Healthcare System. International Institute for Peace, Justice and Human Rights. <http://www.globalresearch.ca/the-impact-of-sanctions-on-the-iranian-peoples-healthcare-system/5354773>. Published 2013. Accessed August 28, 2017.
12. The Islamic Republic News Agency. IBTO Managing Director: 100% Blood Bag From Domestic Products. <http://www.irna.ir/fa/News/82443493>. Published February 25, 2017. Accessed August 28, 2017.
13. Fidler D, Drager N. Global Health and foreign policy: strategic opportunities and challenges. World Health Organization. http://www.who.int/trade/events/UNGA_Background_Rep3_2.pdf. Published May 11, 2009. Accessed August 28, 2017.