Global Health Case Competition,
Prince Mahidol Award Conference 2024

The Syrian Conflict: A Challenge in the Intersection of Global Health and Geopolitics

Disclaimer: All characters described within the case are fictional, but the background Information provided in the case report reflects real-life data and events ongoing in Syria. Teams are responsible for justifying the accuracy and validity of all data and calculations that they use in their presentations.

Case Introduction:

In the heart of the Syrian conflict, a war-torn region plagued by years of relentless violence and devastation, a glimmer of hope persists amidst the ruins and despair. A dedicated group of healthcare workers, driven by unwavering compassion, strive to provide a lifeline of care to the suffering population. As they navigate the treacherous landscape of shattered infrastructure, resource scarcity, and deep-seated mistrust, their mission is to deliver essential medical services, combat the spread of preventable diseases, and rebuild the shattered bonds of trust within a traumatized community.

Welcome to the Global Health Case Competition 2023, Side meeting of Prince Mahidol Award Conferences 2024, This year, we present you with a compelling and intricate case centered around global health and geopolitics in conflict zones, using the **Syrian conflict** as a poignant example. Your task is to address the multifaceted challenges faced by the healthcare workers in this region and develop a comprehensive plan to improve healthcare delivery, promote disease prevention, and foster trust within the community.

Scene: A sun-bleached adobe clinic nestled amongst olive groves in war-torn Idlib.

Characters:

- Sahar: A young doctor, eyes holding both weariness and defiance, her nimble fingers tracing forgotten constellations on children's chests.
- Khaled: An elder apothecary, his beard a blizzard of secrets whispered by herbs and battle smoke, brewing concoctions in earthenware pots.
- Nura: A mother with the sun etched into her skin, clutching her feverish son, Adam, a fragile ember in her arms.

Dialogue:

… Sahar bursts into the clinic, dust swirling like djinn in her wake. Khaled stirs a viscous brew, the air thick with the pungent fragrance of cumin and thyme. …

Sahar: Any sign of the caravan? My vials are as empty as a broken promise.

Khaled: Patience, little sparrow. They navigate through complex checkpoints, weaving through mirages of bureaucracy. It's not a simple path.

Nura: Doctor, Adam burns like a desert wind. I fear the whispers of fever steal his breath.

Sahar: Don't fret, Nura. We'll fan the flames of his health, even with these whispers of hope. Khaled, the cardamom tincture?

Khaled: Simmering, child. But beware, war lingers in its sweetness. Let's coax the fever gently, not chase it with fire.

… A distant boom rattles the windows. Adam whimpers, clinging to Nura's weathered hand. …

Nura: This war, it swallows everything – even our children's dreams. Remember when these hills echoed with laughter, not shrapnel?

Khaled: We had a hospital then, steel bones draped in white, brimming with laughter and cures. But remember, Nura, even weeds push through cracked pavements. Life finds its way, even in the harshest conditions.

Sahar (Smiling a firefly spark in the gloom): We are the weeds, Khaled, defying the dust. We have these hands, these minds, this simple spark of defiance.

… A faint melody drifts in, threads of a forbidden lullaby carried on the wind. Nura hums in response, her voice a soothing balm on Adam's brow. …

Sahar: See, Nura? We weave our own spells, even here, even now. For Adam, for all of us.

… The lullaby swells, a chorus of defiant whispers from hidden windows, defying the war's grim symphony. Khaled hands Sahar the cardamom elixir, a silent pact forged in hope. …

Khaled: Drink deep, little sparrow. We sow seeds of healing in the desert of despair.

… Sahar administers the tincture, a silent hope blossoming in her eyes. Nura hums, the lullaby weaving a fragile tapestry of resilience against the backdrop of war's thunder. …

Assigned role

You are assigned the role of United Nations (UN) – an intergovernmental organization aiming at maintaining international peace and security, fostering cooperation among nations, promoting human rights, providing humanitarian aid, and supporting sustainable development. You will develop a plan to solve the problems mentioned in the objectives within a two-year timeframe. The budget provided for the first round is unlimited.

Country Profiles

Syria is a country in the Middle East, with a coastline at the eastern Mediterranean Sea. It is bordered by Iraq, Israel, Jordan, Lebanon, and Turkey and shares maritime borders with Cyprus.

The country occupies an area of 185,180 km², it is about twice the size of Portugal or slightly larger than the U.S. state of North Dakota. A summary of Syria's key statistics is provided in **Table 1**.

Capital: Damascus
Population: (as in 2023) 23,227,014

Official Languages: Arabic (official)

Others Spoken Languages: English and French (widely understood), Kurdish, Armenian, Aramaic

Religions: Predominantly Muslim population, 12% of Syrians are Alawite Shia and 74% Arab Sunni.

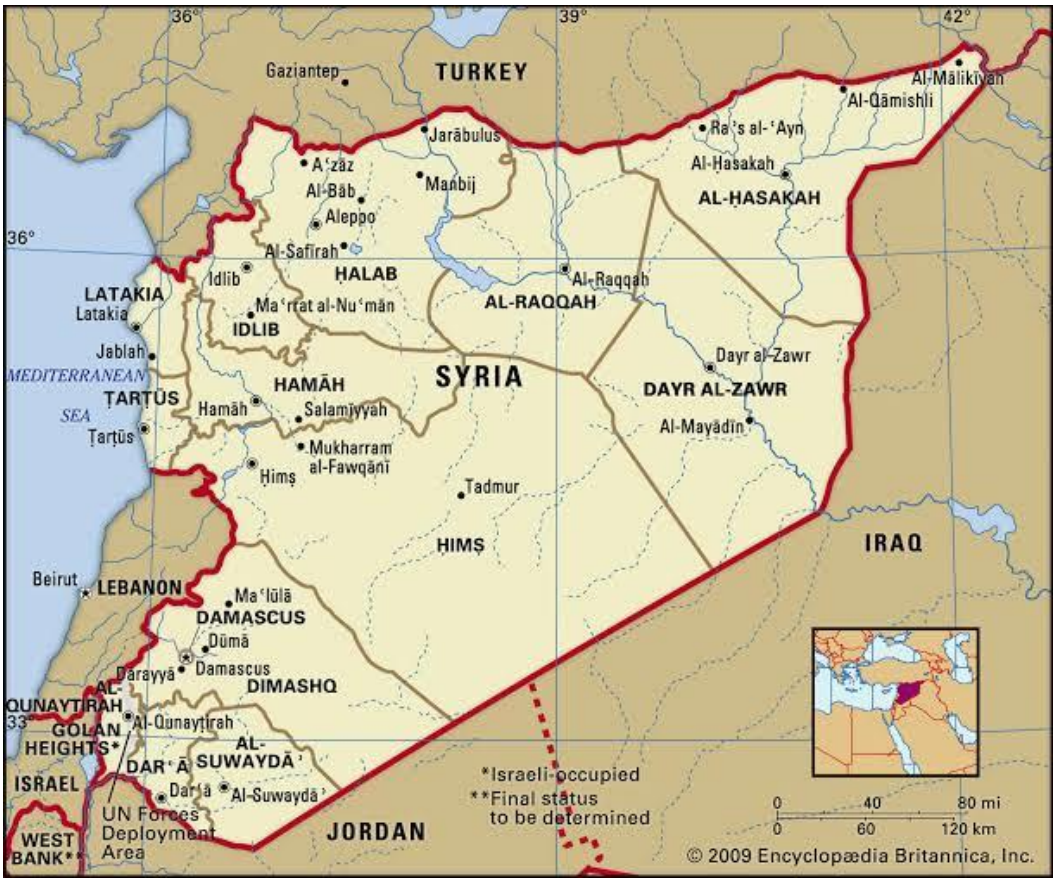

Figure 1. Syria is shown on the map with its neighboring countries (1).

Table 1 shows the demographic, economic, health, and education status in Syria (1-6).

Demographics	
Urban population	56.77 percent
Life expectancy	72.4 years (life expectancy at birth, both sexes combined)
Fertility rate (births per woman)	2.7
Economy	
GDP per capita	US $420.6
Unemployment rate	9.61 percent
Education expenditures	5.13 percent
Healthcare expenditures	3 percent
Health	
Adolescent birth rate (aged 10-19 years) per 1,000 women	39
Infant mortality rate (per 1,000 live births)	15.8
Under 5 years mortality rate (per 1,000 live births)	19.5
Neonatal mortality rate (per 1,000 live births)	10.8
Maternal mortality ratio (per 100,000 live	68

births)	
Physicians (per 1,000 people)	1.546
Education	
Primary completion rate	68.9 percent
Junior secondary completion rate	46.8 percent
Senior secondary completion rate	40 percent

Challenges:

Social Determinants of Health

The social determinants of health (SDH) are factors other than medical factors with influences on health outcomes of the population. These factors are, for example, income and social protection, education, unemployment and job insecurity, working life conditions, food insecurity, housing, basic amenities and the environment, early childhood development, social inclusion, non-discrimination, structural conflict, access to affordable health services with decent quality (7). They are often used to measure health inequities in the same country or between different countries. In the context of Syria, these are some of the social determinants of health.

1. Maternal and child's health

Limited data about maternal health can be found. However, there are some useful reports about maternal death. Maternal mortality is the death of a woman due to pregnancy-related complications which is often measured as maternal mortality ratio (MMR). Shortage of essential medical supplies and staff, COVID-19 pandemic, economic instability, food insecurity, and psychological stress all affect maternal health and, to an extent, result in increased MMR. Increased rates of maternal mortality are also associated

with an elevated risk of child mortality which may affect at the population level in the long run (8).

Neonatal death is the death of an infant within 28 days of age, regardless of the gestational age. The first month of life is often regarded as the most vulnerable period of a child, as supported by the fact that almost half of the child deaths in 2020 took place during the neonatal period (9). 3 out of 4 neonatal deaths occurred within the first week of life. Globally, the most common causes of neonatal deaths in 2019 are preterm birth, complications of labor, infections, and congenital defects (9). In Syria, the most common causes of neonatal deaths are prematurity, birth asphyxia or trauma, and congenital anomalies (10).

Due to the insufficiency of healthcare services and, consequently, antenatal care, one may have guessed that neonatal deaths in Syria should increase. Surprisingly, according to the data from the World Bank, there seemed to be a reduction in neonatal mortality rate during the conflict (11). This might partially stem from the inaccuracy of the data (12). Some areas of Syria may be intentionally neglected due to difficulties in obtaining said data, especially since births to Syrian nationals often go unregistered (12). Therefore, these children lack access to basic rights including healthcare services (13); thus, resulting in an increased mortality rate.

The main strategy proposed by the World Health Organization in order to tackle the problem is the provision of midwife-led continuity of care (MLCC) (9). MLCC is a model where a midwife or a group of midwives continuously provide healthcare services to the same woman and her child in the postnatal period. This strategy, however, requires well-functioning midwife programs which may be lacking in Syria.

In terms of children's health, the most common cause of under-5 mortality in Syria in 2015 is malnutrition (14). However, the statistics regarding malnutrition remains questionable due to the exclusion of hard-to-reach areas (12). There is reduced breastfeeding in the refugees which may be because of maternal stress (12). Vaccine coverage also decreased during the conflict (12). Furthermore, children are prone to both physical injuries and psychological trauma which can result in mortality or life-long consequences. Lack of proper schooling and socioeconomic support may also contribute to developmental insufficiency (9).

2. Refugees

Refugees are people who have been forced to leave their countries due to persecution, war, or violence. The 1951 Geneva Convention defines the definition of a refugee and the legal protection, other assistance, and social rights the refugee should receive (15). Since 2011, over 14 million Syrians have been compelled to leave their homes in pursuit of safety. Around 5.5 million Syrian refugees live in neighboring countries including Turkey, Lebanon, Jordan, Iraq, and Egypt (16). Over 70 percent of Syrian refugees are living in poverty and cannot fully access fundamental services such as education, possibly stemming from economic decline in host countries due to COVID-19, Ukraine war, global inflation, and 2023 Turkey–Syria earthquakes (16). Economic decline in the host countries might be the main reason for increasing hostility towards Syrian refugees. Syrian refugees are often blamed for depleting the countries' resources; thus, are deported back to Syria (17) However, these actions do not deter migration as long as the conflict remains ongoing.

The Syrian conflict has resulted in a large refugee population in neighboring countries. As of 2021, there are over 5.6 million Syrian refugees registered in Turkey, Lebanon, Jordan, Iraq, and Egypt. These refugees often lack access to essential healthcare services in their host countries. A 2018 study by the United Nations High Commissioner for Refugees found that only 52% of Syrian refugees in Lebanon had access to healthcare, and only 35% had access to mental health services (17). Your plan should include strategies for cross-border collaboration to ensure that refugees have access to essential healthcare services. This may involve establishing cross-border clinics, coordinating medical referrals, and providing support to healthcare workers in refugee camps.

3. Environmental health

Air pollution

Syria had already suffered from air pollution even before the conflict arose. High levels of particulate matter (PM2.5) were caused by industrial and vehicle emissions, waste burning, and seasonal pollution which contributed to the most common environmental cause of mortality both before and after the conflict (18). Aerial bombardments, forest fire, dust storms and chemical attacks further deteriorate the air pollution in Syria. High levels of PM also worsen agriculture and reduce crop yield (18).

Carbon dioxide (CO2) emissions have been reduced during the conflict due to damage to disrupted oil and gas production, poor agriculture and industrialization. However, CO2 levels are still higher than recommended levels. (19)

Deforestation

Forest fires are the major cause of deforestation in Syria and have been significantly increased during the conflict. These fires are caused by bombing campaigns by several parties, and dependence on trees as sources of fire and electricity. This leads to loss of seasonal and rare trees and natural reserves which eventually threatens the food security and economic stability of the country, especially the olive oil production (19).

Water depletion

The country had already had limited natural water reserves before the war even began. During the conflict, the water infrastructure has been severely damaged leading to insufficient water supply (19). 52% of Syrians lack adequate access to water and; therefore, need to seek for natural unsafe sources of water. This often leads to contamination and outbreaks of diseases (20). In 2022, there was a cholera outbreak in Syria which resulted in 189,374 suspected cases reported (21).

Vegetation degradation, soil erosion and food insecurity

Soil infertility and soil/vegetation degradation had long been a problem in Syria even before the conflict occurred. However, the use of chemical and explosive weapons

has a substantial impact on the soil and groundwater quality. The contaminated resources may outlast the conflict and remain a long run problem. This may exacerbate the poverty and food insecurity of the Syrians post-conflict even after the conflict. (19)

Conflict and Healthcare:

The Syrian conflict, a protracted civil war that began in 2011, has resulted in a humanitarian crisis of unprecedented proportions. The healthcare system, once a beacon of hope, has been decimated by years of relentless violence. Healthcare facilities in Syria have been damaged or destroyed. Hospitals and clinics have been bombed, looted, or repurposed for military use. Medical personnel have fled the country in droves, with an estimated 70% of doctors and 50% of nurses having left since the start of the conflict. Essential supplies, such as medicines and vaccines, are in critically short supply.

4. Infrastructure Damage

16% of all healthcare providing centers have been completely destroyed and 42% have sustained damages. In some areas, the destruction is even more severe, with entire districts lacking any functioning healthcare facilities (22). A World Bank 2017 Damage Assessment for Syria estimated the healthcare centers' repair and reconstruction to cost between $250 million to $312 million, not including medicine, supplies and equipment (23). Your team must devise innovative strategies to rehabilitate existing facilities, construct new ones, and ensure the provision of essential services in the face of ongoing violence.

5. Disease Prevention and Control

In the midst of conflict, disease outbreaks are common. The lack of access to clean water and sanitation, coupled with malnutrition and overcrowding, creates an ideal environment for the spread of infectious diseases. According to the WHO, vaccine-preventable diseases such as measles and polio have re-emerged in Syria (24, 25), and there is a high risk of outbreaks of other diseases such as cholera and typhoid fever. Your

plan should include measures to prevent and control communicable diseases through vaccination campaigns, hygiene promotion, and surveillance systems.

6. Political and Security Considerations

The Syrian conflict is a complex political and security environment. The country is divided between multiple armed groups, including the Syrian government forces, various rebel groups, and jihadist organizations. The conflict is further complicated by the involvement of regional and international powers. Your plan should consider the political dynamics of the conflict and propose strategies to mitigate risks and ensure the safety of healthcare workers and beneficiaries. This may involve engaging with local authorities, negotiating safe passage for medical personnel and supplies, and advocating for the protection of healthcare facilities. A 2016 study by the Syrian American Medical Society found that 757 healthcare workers had been killed since the start of the conflict, and over 100 healthcare facilities had been deliberately attacked. 65% of health care staff have fled the country after the war began. (26)

Objectives

The goal of this global health case is to develop a comprehensive plan that addresses the aforementioned challenges and aims to:

Develop a comprehensive and innovative strategic plan to revitalize and strengthen Syria's healthcare system in the midst of the ongoing conflict, addressing all the six aforementioned challenges, cross-border collaboration, and political/security considerations.

The plan should aim to achieve the following key objectives within a two-year timeframe:

- Increase access to essential healthcare services for the Syrian population, including both internally displaced persons and refugees.

- Reduce the gap in essential medical supplies and medications
- Implement a comprehensive disease prevention and control strategy
- Facilitate cross-border collaboration to ensure access to healthcare services for Syrian refugees in neighboring countries.
- Develop strategies to navigate the complex political and security environment and ensure the safety of healthcare workers and beneficiaries.

Be mindful that only the solution of health issues will be rewarded. No extra point will be added regarding the ceasefire or complete cessation of war. Regardless, geopolitical factors should still be considered in your plans.

Evaluation Criteria:

Rubric score				
Criteria	**Score**			
	5 points	**3 points**	**1 point**	**0 point**
Depth of Analysis				
Understanding of the case and its implications.	Demonstrates a profound understanding of the case and its implications.	Adequate understanding of the case and its implications.	Limited understanding of the case and its implications.	No understanding of the case or its implications.
Analysis of relevant factors, including social, economic, and political considerations.	Comprehensively analyzes relevant factors, including social, economic, and political considerations	Considers some relevant factors, but the analysis is not comprehensive or in-depth	Consider a few relevant factors, but the analysis is superficial.	Fails to consider relevant factors or provides superficial analysis.

Identification and exploration of key issues.	Insightfully identifies and explores key issues related to the case	Identifies some key issues, but the exploration is limited or superficial.	Identifies a few key issues, but the exploration is superficial or lacking.	Fails to identify or explore key issues.
Feasibility				
Realistic and practical solutions proposed.	Proposes realistic and practical solutions that are feasible within the given constraints.	Proposes some realistic and practical solutions, but they may not be fully feasible.	Proposes a few solutions, but they are not realistic or practical.	Fails to propose feasible solutions or provides unrealistic or impractical suggestions.
Consideration of potential challenges and obstacles.	Considers potential challenges and obstacles and develops strategies to address them.	Consider some potential challenges and obstacles, but the strategies to address them are limited or superficial.	Consider a few potential challenges and obstacles, but the strategies to address them are superficial or lacking.	Fails to consider potential challenges and obstacles or provides superficial strategies to address them.
Justification for the feasibility	Provides a well-reasoned justification for the feasibility of the	Provides some justification for the feasibility of the proposed	Provides limited or superficial justification for the feasibility of the	Fails to provide justification for the feasibility of the

of the proposed solutions.	proposed solutions.	solutions, but it is not fully convincing.	proposed solutions.	proposed solutions.
Creativity				
Innovative approaches and out- of-the-box thinking.	Demonstrates innovative approaches and out-of-the-box thinking in the proposed solutions.	Incorporates some innovative approaches or out-of-the-box thinking, but they are limited or superficial.	Includes a few innovative approaches or out-of-the-box thinking, but they are superficial or lacking.	Fails to demonstrate innovative approaches or out-of-the-box thinking.
Creative problem-solving demonstrated in the proposed solutions.	Demonstrates creative problem-solving skills in the proposed solutions.	Incorporates some creative problem-solving skills, but they are limited or superficial.	Includes a few creative problem-solving skills, but they are superficial or lacking.	Fails to demonstrate creative problem-solving skills.
Unique perspectives or unconventional ideas explored.	Explores unique perspectives or unconventional ideas that contribute to the analysis and solutions.	Explores some unique perspectives or unconventional ideas, but they are limited or superficial.	Includes a few unique perspectives or unconventional ideas, but they are superficial or lacking.	Fails to explore unique perspectives or unconventional ideas.

Effective Integration of Global Health and Geopolitics Perspectives				
Integration of global health considerations into proposed solutions.	Integrates global health considerations into the proposed solutions in a meaningful and effective way.	Considers some global health considerations, but they are not fully integrated into the proposed solutions.	Mentions global health considerations, but they are not integrated into the proposed solutions.	Fails to consider or mention global health considerations.
Consideration of geopolitical factors and their impact on the case.	Consider geopolitical factors and their impact on the case and proposed solutions.	Consider some geopolitical factors, but their impact is not fully explored or addressed.	Mentions geopolitical factors, but their impact is not explored or addressed.	Fails to consider or mention geopolitical factors.
Synthesis of global health and geopolitics perspectives to form a cohesive strategy.	Synthesizes global health and geopolitics perspectives to form a cohesive strategy for addressing the case.	Attempts to synthesize global health and geopolitics perspectives, but the synthesis is limited or superficial.	Mentions the need to synthesize global health and geopolitics perspectives, but does not do so effectively.	Fails to synthesize global health and geopolitics perspectives.

Presentation Skills				
Structure of the presentation.	Presents a clear and organized structure for the presentation.	Presents a somewhat organized structure for the presentation, but there may be some disorganization or gaps.	Presents a basic structure for the presentation, but there are significant organizational issues or gaps.	Fails to present a clear or organized structure for the presentation.
Communication of ideas.	Engages the audience and effectively communicates ideas in a clear and compelling manner.	Communicates ideas in a clear manner, but the presentation may lack engagement or impact.	Attempts to communicate ideas, but the presentation is unclear, disorganized, or lacks engagement.	Fails to effectively communicate ideas or engages the audience.
Professionalism in delivery and use of visuals or multimedia.	Delivers the presentation in a professional manner and effectively uses visuals or multimedia to	Delivers the presentation in a somewhat professional manner and uses visuals or multimedia, but they may not be	Delivers the presentation with limited professionalism and uses visuals or multimedia, but they are not	Fails to deliver the presentation in a professional manner or effectively use visuals or multimedia.

	enhance the message.	effective or appropriate.	effective or appropriate.	
Overall Impression				
Cohesiveness and integration of elements.	Presents a cohesive and integrated analysis and solution that effectively addresses the case.	Presents a somewhat cohesive and integrated analysis and solution, but there may be some gaps or inconsistencies.	Presents a basic analysis and solution, but there are significant gaps or inconsistencies.	Fails to present a cohesive or integrated analysis and solution.
Understanding country's historical context	Demonstrates a thorough understanding of the country's historical context and its influence on the case, drawing insightful connections between past and present.	Incorporates some historical knowledge but may not fully explain its relevance to the present situation or lack depth in analysis.	Lacks significant understanding or integration of the country's history, limiting the contextual richness of the analysis	No demonstration of understanding or acknowledgment of the country's historical context, leading to a lack of foundational knowledge for the analysis.

Adherence to time limits and guidelines.	Adheres to the time limits and guidelines specified for the presentation.	Somewhat adheres to the time limits and guidelines specified for the presentation.	Partially adheres to the time limits and guidelines specified for the presentation.	Fails to adhere to the time limits and guidelines specified for the presentation.
Overall impression of the team's performance and contribution.	Demonstrates a high level of teamwork, collaboration, and professionalism throughout the case study analysis and presentation.	Demonstrates some teamwork, collaboration, and professionalism throughout the case study analysis and presentation.	Demonstrates limited teamwork, collaboration, and professionalism throughout the case study analysis and presentation.	Fails to demonstrate teamwork, collaboration, and professionalism throughout the case study analysis and presentation.
Total points (Max 95 points)				

This case study aims to stimulate innovative thinking and collaboration among participants to develop a comprehensive plan that tackles the complex healthcare challenges. The winning proposal will demonstrate a deep understanding of the challenges, propose feasible and innovative strategies, and align with the principles of evidence-based practice, cultural sensitivity, sustainability, and community empowerment.

Appendices

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