

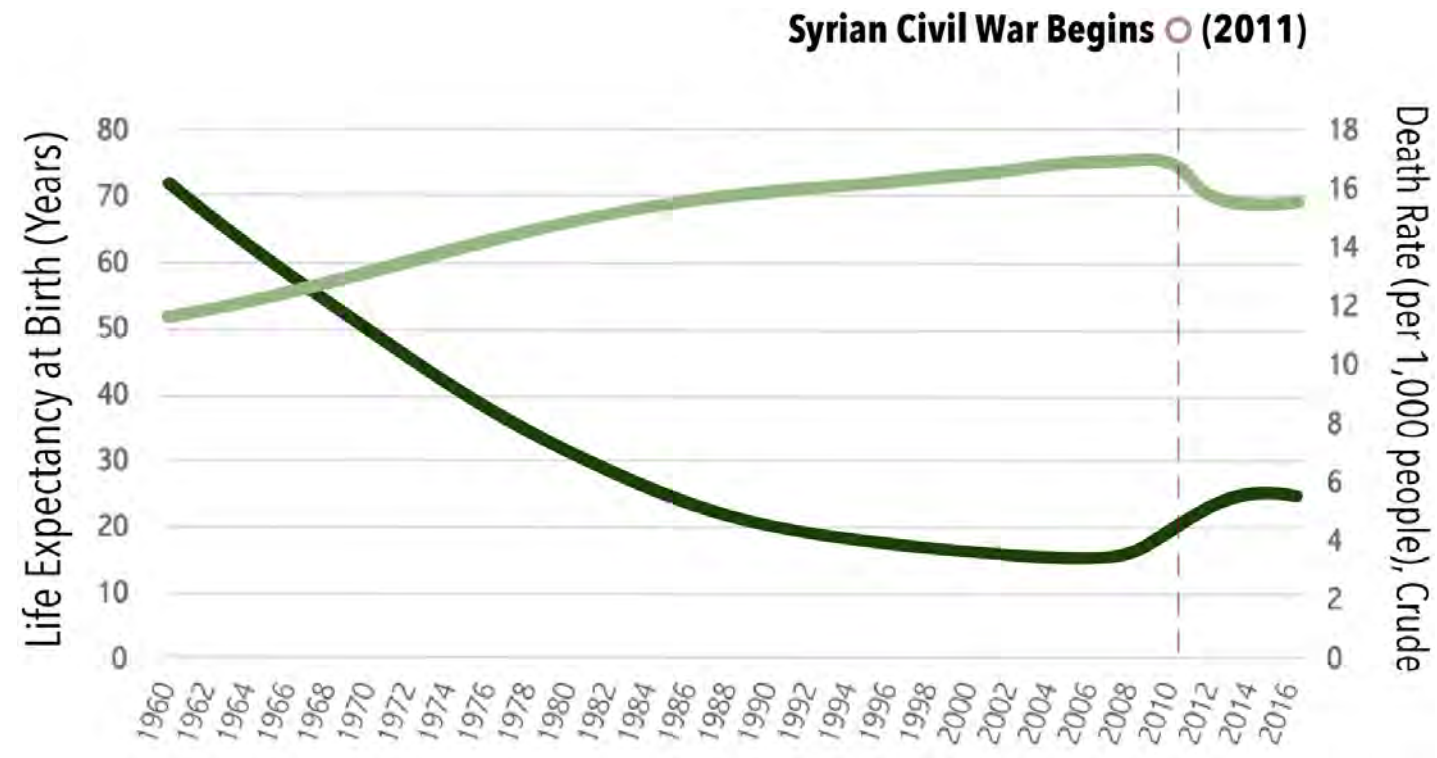
Armed Conflict and Climate Change: The Impact on Health Care Provision and Health Systems in Syria

Visualizing the Complex Relationship between Violent Strife, Environmental Degradation, and Poor Health

Abstract

What began in Syria in 2011 as a non-violent pro-democracy protest has intensified to a devastating civil war that has lasted almost eight years and has killed over 360,000 people.¹ The complexity of the conflict and the involvement of many opposing and collaborating actors has made peace talks and potential resolution nearly impossible. 55% of Syria's population have been uprooted from their homes, with 5.7 million people fleeing the country and 6.2 million internally displaced.¹ When the conflict broke out in 2011, large numbers of people migrated to the northern regions of Syria, which were once primarily rural, to avoid the violence which was at that time more concentrated in Damascus and western Syria. Movement towards the northern cities has been influenced by severe drought as well, which is due in large part to warming global temperatures. This trend of the northern migration of internally displaced people has continued over the duration of the civil war, despite rising rates of violence occurring in this region, and has put tremendous strain on the already limited resources. Migration trends are due also in large part to the decreasing availability of water in the country

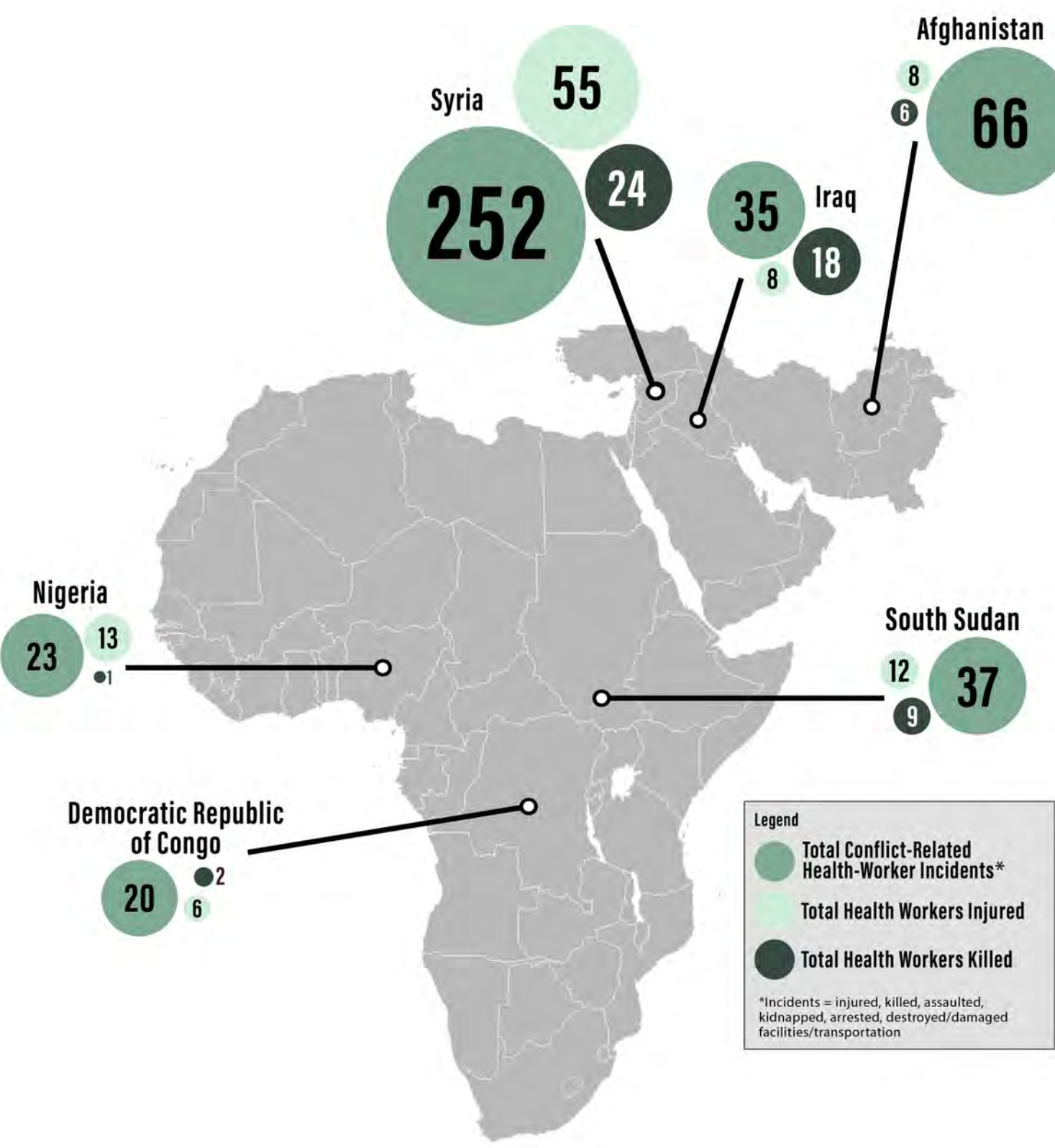
The 1986 Ottawa Charter for Health Promotion outlines the fundamental prerequisites for health as: "peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice and equity." Within Syria, these conditions have been debilitated and destroyed, leaving civilians vulnerable to serious health complications. The aim of this project is to explore the extent to which Syria's health systems have been impacted by climate change and conflict, and the resulting health outcomes of its remaining citizens. In addition, the project attempts to capture the demonstrated health needs of the population, especially in the most devastated and neglected regions of the country. A keen look is taken at northern Syria, which contains some of the last remaining opposition-held territories. Chronic disease indicators are included to elucidate the impact of war beyond direct injuries sustained from the violence itself.



Methods

The majority of the data used in this project was downloaded from the Humanitarian Data Exchange, and the location of each data set is indicated below the corresponding map or graphic. The data was outlined in Excel before being compiled using ArcMap GIS mapping software. Maps were made by joining shape files with the metric of interest, and data points were added using latitude and longitude coordinates. All infographics are original and were created using Adobe Illustrator.

Attacks on Healthcare in the Middle East and Africa (2017)



Despite violation of international humanitarian law, attacks on medical personnel, humanitarian aid workers, and health care facilities and transportation have continued to plague many countries in conflict – most notably, Syria. Of all worldwide attacks on healthcare, the World Health Organization notes that 70% of them have occurred in Syria.² The violence has intentionally attempted to worsen the livelihoods and well-being of Syrian peoples by destroying their access to health care and thus their right to health. These attacks have instilled great fear not only in the healthcare and humanitarian aid workers themselves, leaving an incredible need for skilled medical assistance, but in the population at large, putting up yet another barrier to health for Syrian citizens.

Health systems and infrastructure, especially as they relate to public health, need to be strengthened if they are to adequately deal with potential climate crises and the resultant health effects. Currently, the trend in attacks on health care suggest that climate change can have an even more devastating effect on human health by destroying the current systems in place aimed at illness prevention and treatment.

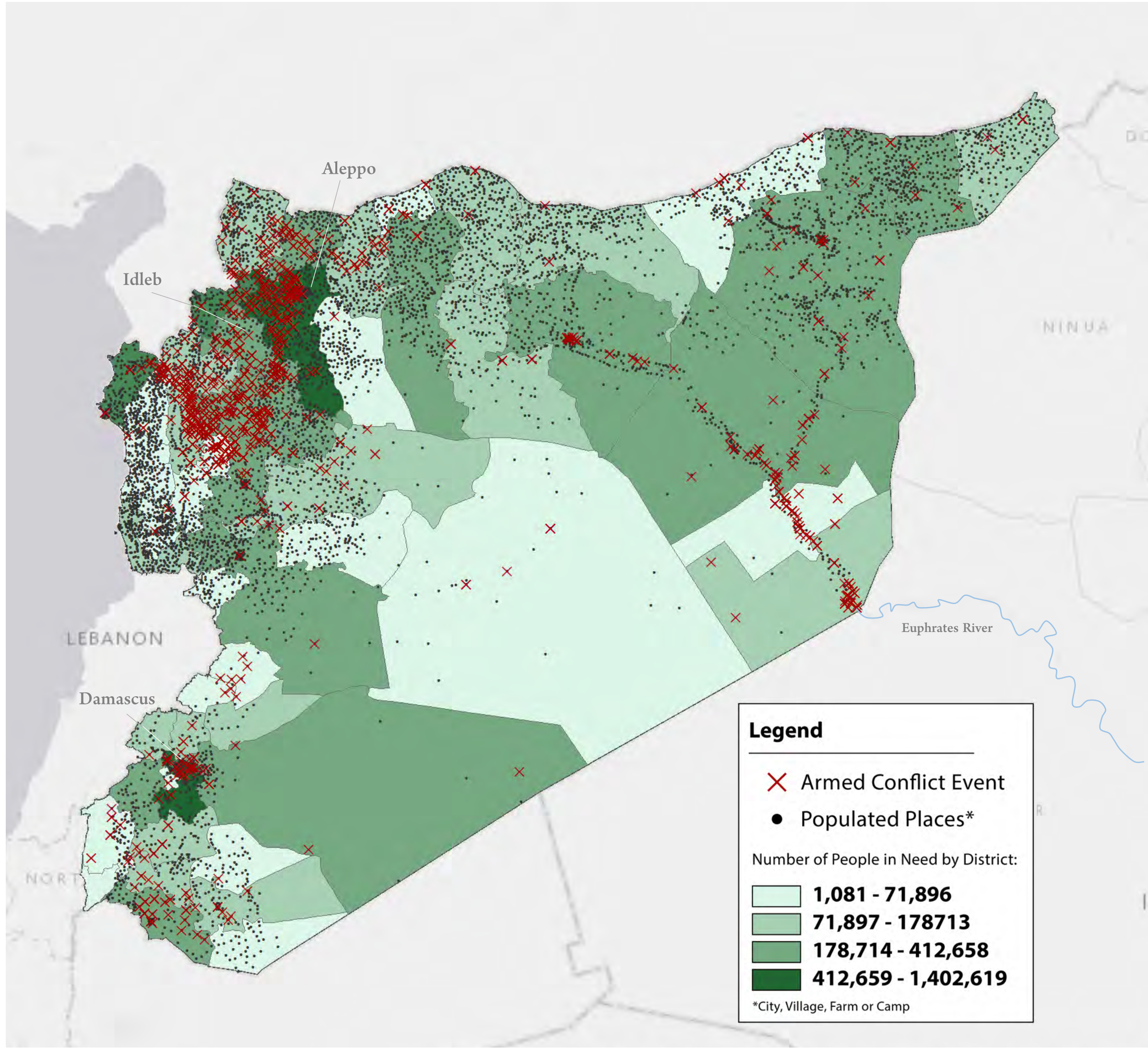
Data Source: Safeguarding Health in Conflict Coalition (SHCC)

Results

The majority of the Syrian population is currently living in northern and western Syria where the violence is heaviest (Figure 1). In addition, the number of people "in need" corresponds strongly with the heaviest hit locations in regard to armed conflict events (Figure 1). This may indicate that civilians are being intentionally targeted. The cities and regions around Damascus and Aleppo have experienced a very high concentration of armed conflict attacks so far in 2019 and have the greatest number of people "in need" (Figure 1). Northern Syria, specifically the district of Idlib (also commonly referred to as Idlib) and western Aleppo, has seen the highest rates of violence thus far in 2019, and is therefore a focus of this project. Many Syrians are living along the banks of the Euphrates River where water is more plentiful. Despite the presence of many informal emergency clinics and primary health care facilities isolated mainly in western Syria, a great number of these communities are still without any healthcare facility (Figure 5). As a result, Syrians suffering from both acute and chronic diseases have many of their health needs unmet. There is an especially high incidence of communities lacking heart, blood pressure, and diabetes medicine in the regions experiencing the most armed conflict events (Figures 6-8).

Despite less frequent armed conflict events, northeast Syria has an alarmingly low health care presence (Figure 5) despite voicing a top three priority need for health (Figure 5) and a need for medication (Figure 2). East/northeast Syria, despite a less dense population, has experienced a large number of armed conflict events, many of which are concentrated along the more populous Euphrates River (Figure 1). Many of the sub-districts located around the Euphrates have no access to many chronic disease medicines, including heart, blood pressure, and diabetes medications (Figures 6-8).

Figure 1: Armed Conflict Events and Number of People in Need by District (2019)



Health Status Indicators by Sub-District in Northern Syria (2019)

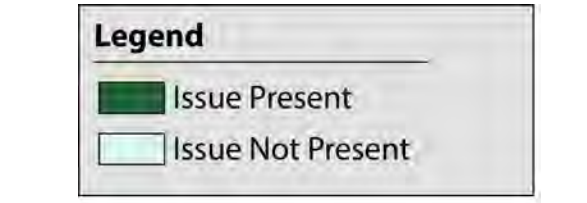


Figure 2: In Need of Medication

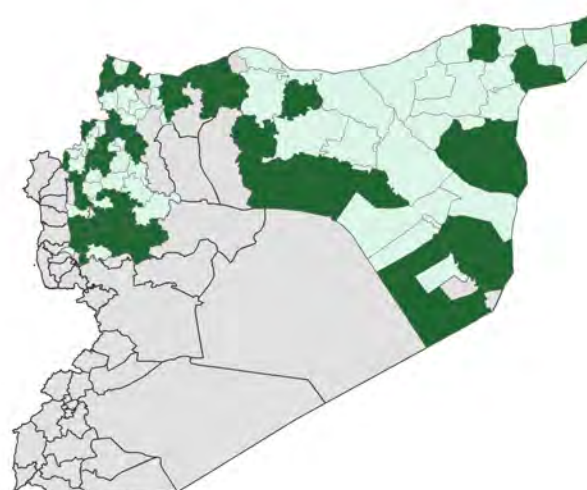


Figure 3: Chronic Disease with No Medication

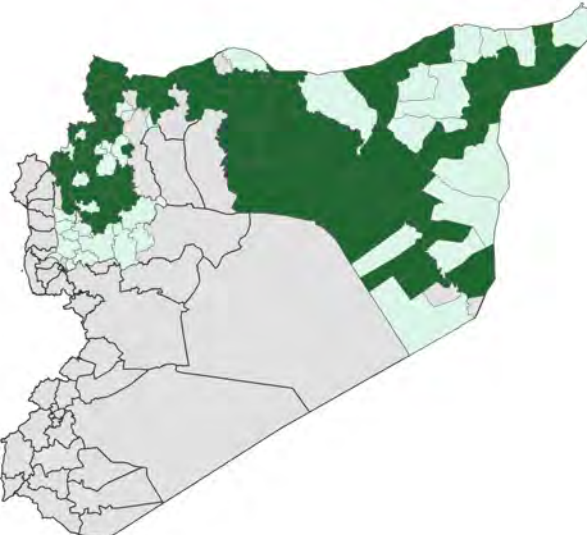


Figure 4: Severe Disease in Children <5 Years Old

Data Source: REACH Initiative

Access to Chronic Disease Medications by Sub-District in Northern Syria (2019)

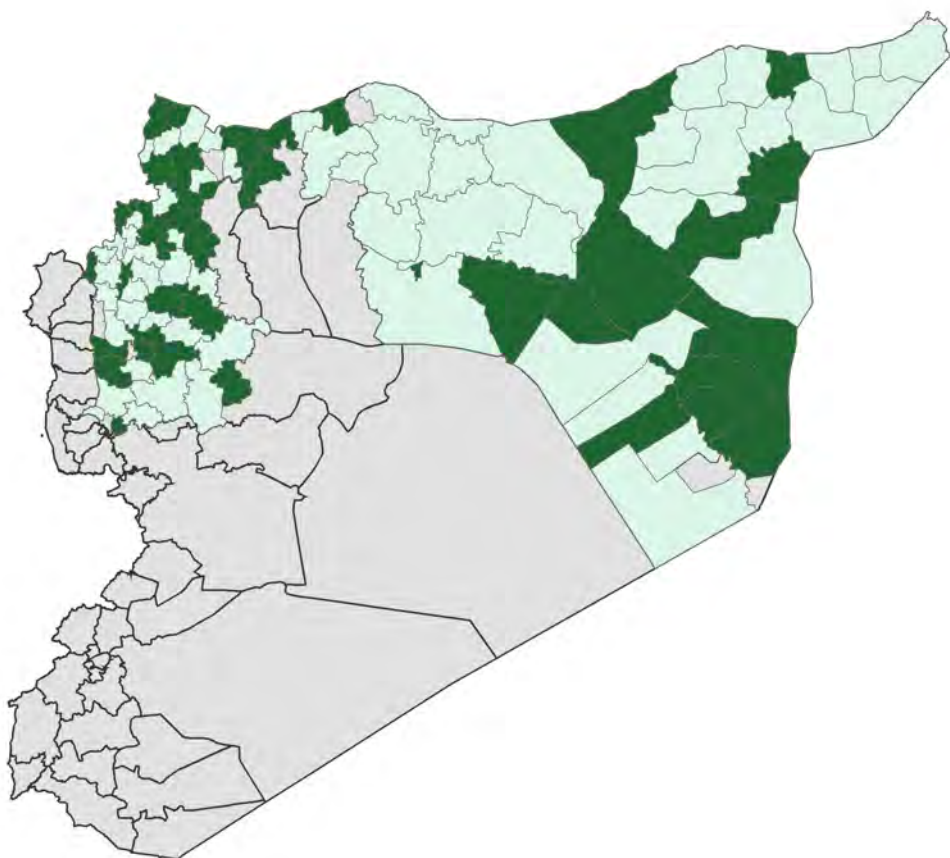


Figure 6: Heart Medication

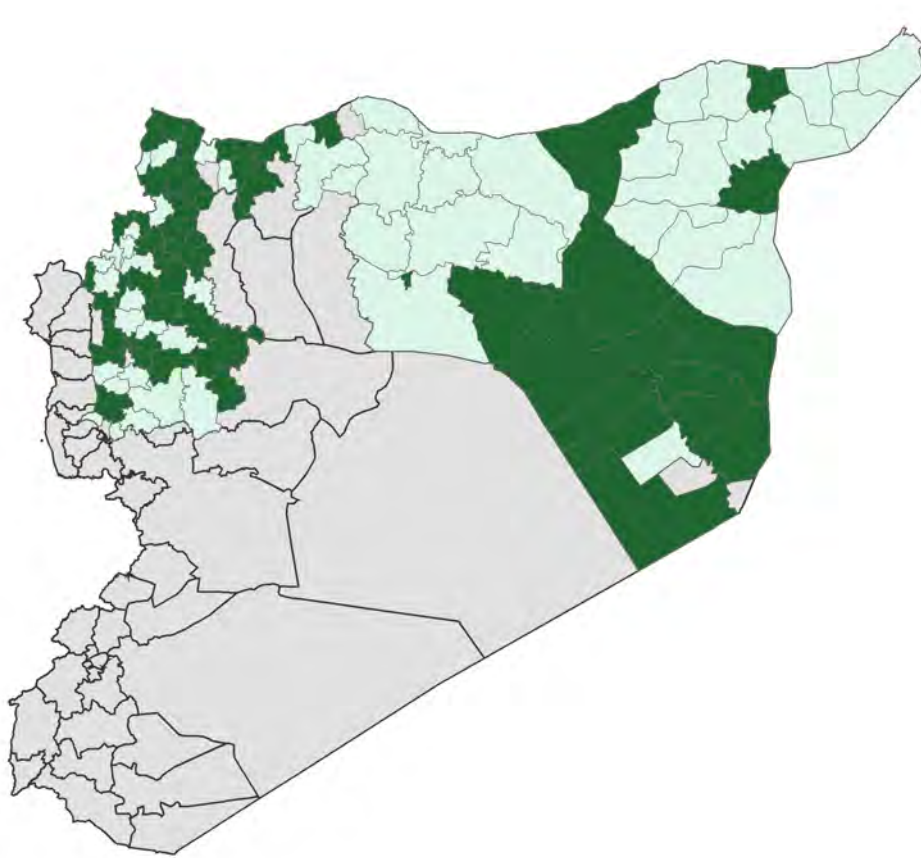


Figure 7: Blood Pressure Medication

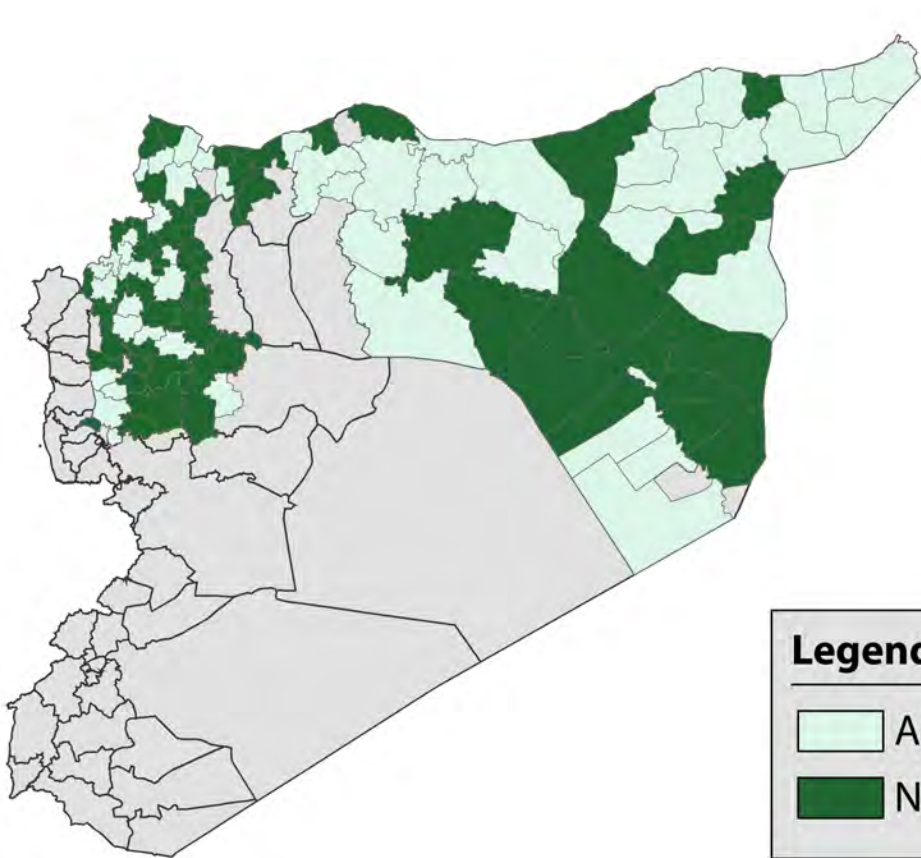
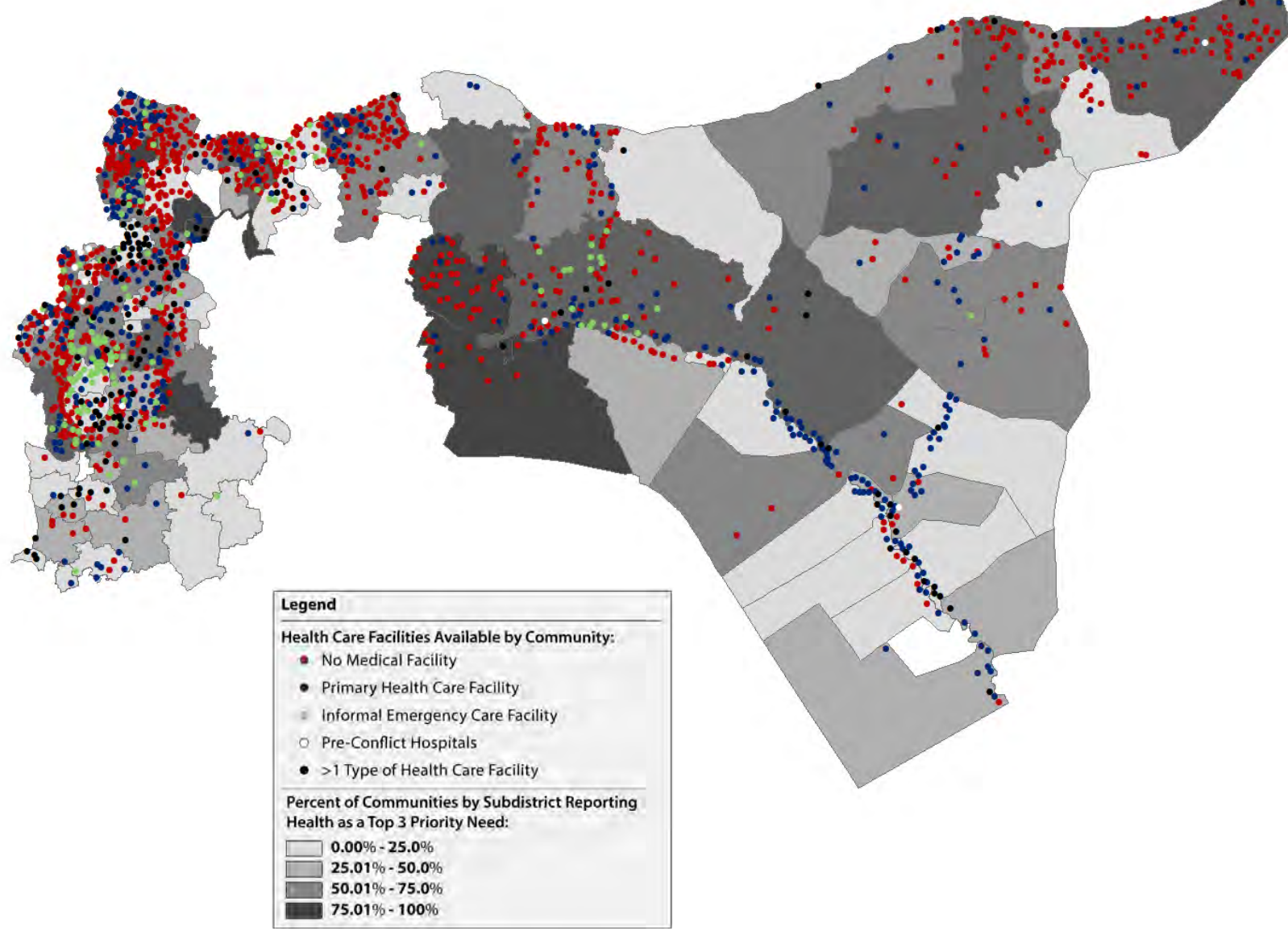


Figure 8: Diabetes Medication

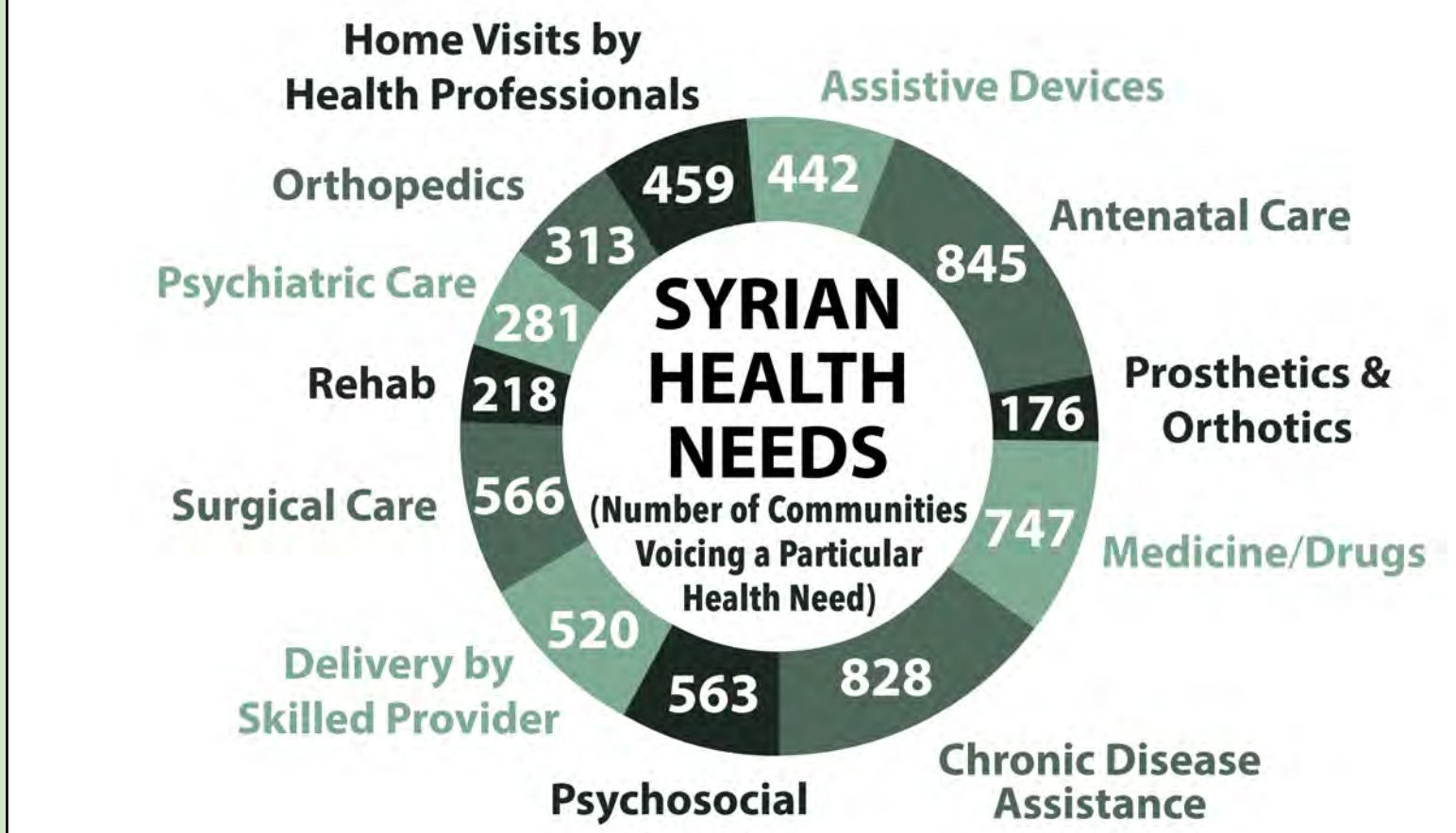
Data Source: REACH Initiative

Figure 5: Percent of Communities Reporting Health as a Top 3 Priority Need and Access to Health Care Facilities (2019)



The majority of Syrian health care facilities are concentrated along the Euphrates River and in northwestern Syria (primarily in the district of Idlib), indicating potentially two things: that attempts are being made to address the health needs of Syria's most vulnerable populations, and that health care itself is being targeted.

Data Source: REACH Initiative



In the survey that this infographic is based on, 1630 communities in northern Syria were asked, "What type of healthcare services are most needed by all people in your village?" and could name more than one (which is why the numbers above sum to >1630). This project indicates that chronic disease and mental health assistance are some of the most pressing health needs of the Syrian population. While the need for health care aimed at treating battle-sustained injuries and acute effects is still present, persistent physical and psychological harm caused by armed conflict remains a serious and often-neglected problem.

Data Source: REACH Initiative

Conclusions

Armed conflict and climate change have severe implications for health systems, health care provision, and human health both during the periods of violence and long after they have ceased. Syria is an unfortunate model for this devastating relationship. Much research has looked into the acute effects of war, but less has been able to capture the longer-lasting, more chronic and lingering outcomes. Climate change has a complex and often causal relationship with conflict, as demonstrated by the devastation in Syria which is deeply intertwined with issues of water scarcity and agricultural decline. While the "threat multiplier" relationship between climate change and the beginning of the country's civil war has been contested,³ it is clear that the changing environment has exacerbated this already horrific situation. The water shortages have had many deleterious effects in Syria which have complicated an already violent and intricate crisis, including the death of livestock, ill children, increased food costs, and forced migration of millions.⁴ This project indicates that the toll inflicted by armed conflict and climate change must include far more than the immediate morbidity and mortality, and that care and attention must be given to the more enduring impact. The echo of poor health will continue to reverberate in Syria long after the guns have stopped firing and the air strikes have ceased.

References & Acknowledgements

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