FINAL ASSIGNMENT

COMMUNICATE/VISUAL DATA ANALYSIS (ALY6070)- SEC 03 SUMMER 2019

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Introduction

To start with, we have been given the data from United Nations International Children's Emergency Fund (UNICEF) which consists of the morality rates and the causes of death. From this project we need to choose three countries. After long consideration about the questions given to us, our group finally choose **Japan**, **Thailand** and **Burkina Faso** as our choices. In fact, it is really important to select 3 adaptable countries which can help us get some results. Below, we can read the reasons our reason for pick them.

First of all, it is better for us to choose the typical choices whose mortality rate is shown from 1950 to 2017, which can help us compare them easily and clear for the complete years. Therefore, we got our range within several countries like Australia, Bangladesh, Japan and so on.

Next, since the main target of UNICEF is mothers and children living in developing countries and we need to make a complete assessment to them, we'd better choose one developing country and one developed country to compare within the range above. Therefore, we finally chose Japan and Thailand which both from Asia.

Furthermore, we have chosen the Burkina Faso as our last choice. We need to find a state which can represent the most developed countries, and Africa is a good choice for us. Therefore, the country meeting these conditions simultaneously above is better for us to choose Burkina Faso. As summary, we chose Japan from Asia (East Asia) as a developed country, Thailand from Asia (south Asia) as developing country and Burkina Faso from Africa (Sub-Saharan Africa) as a developing country.

Analysis

Compare All of the Regions in the World

As the first step, we compare the regions size of death per 1,000 live births per by using bubble graph which size of each bubble shows the number of deaths.

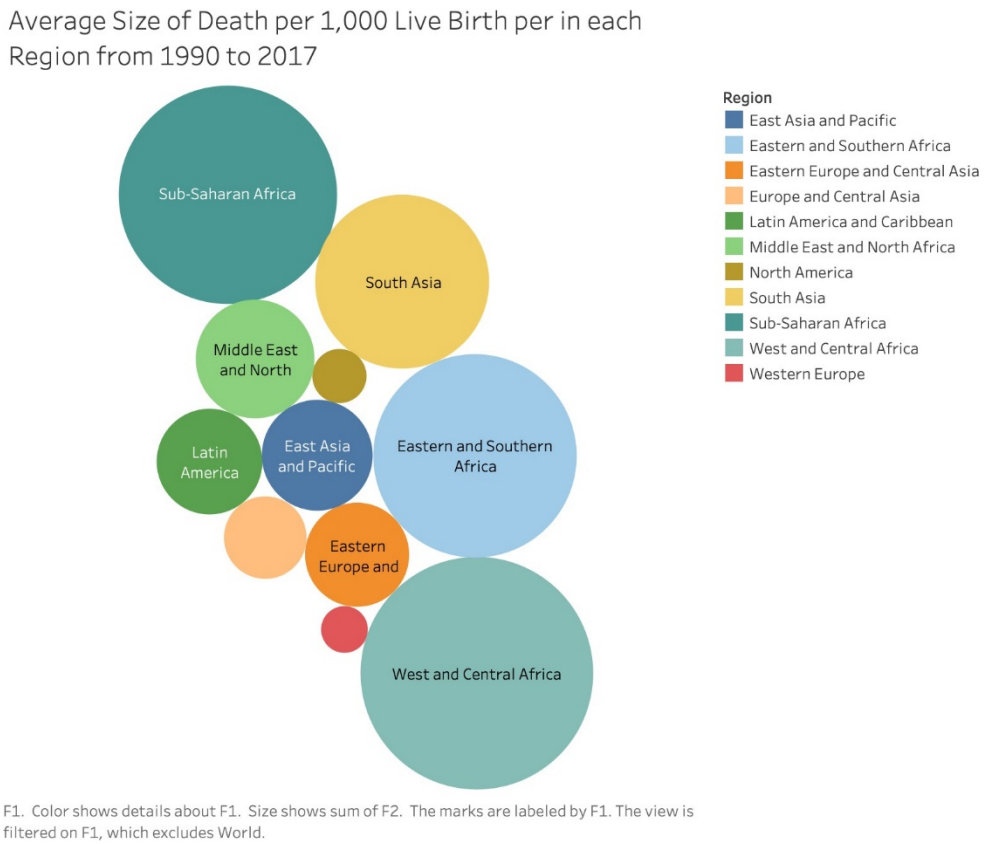

Figure 1: compering Death per 1,000 Live Birth per Regions and world

As we can see, all three regions in Africa have the highest number among all the bubbles. It makes sense because none of the countries in Africa are developed and the standard of health care in it is extremely low. And the smallest one is for Europe which has the highest standard of health care for each of their citizens. Besides, we can find that in these 3 regions, both Eastern Asia and Pacific and South Asia has a lower number of deaths than Africa.

Compare our three chosen countries with the world

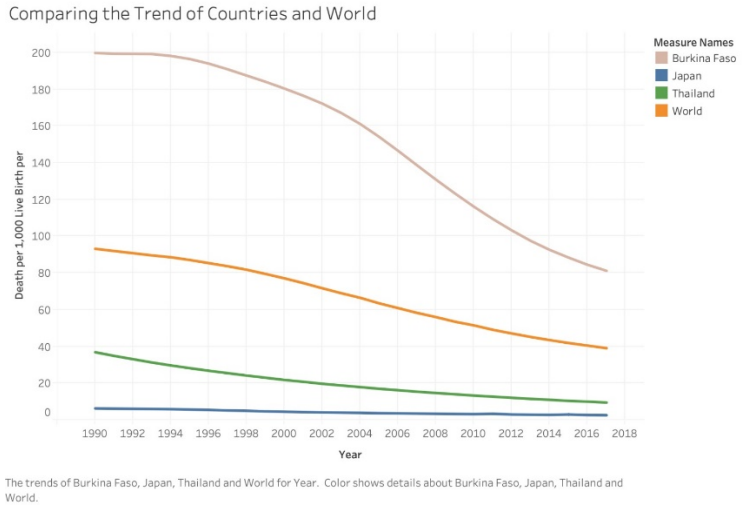

Figure 2: Comparing our three countries with world

From the upper graph, we can get some points in the following graph.

1) There is a huge gap in the mortality rate between Japan and Thailand at the beginning. We can speculate that the developed country has a lower mortality rate than the developing country in 1990.
2) There is a significant decreasing in the mortality rate of Burkina Faso comparing with Thailand. As we can see, as these countries get more developed, the rate of mortality would decrease. What is more, as these two countries get more developed, their mortality rate starts getting closer to Japan's rate which is a developed country. For example, the Thailand rate at the end of the line in 2017 had been a similar mortality rate as Japan. This shows the impact of developing on decreasing the rate of mortality of children under 5 years old.
3) The mortality rate of Thailand is lower than Burkina Faso. There are many differences among different developing countries, due to its states and how much they need to develop in order to count as a developed country. The mortality rate of the World is higher than in

Japan and Thailand because it shows the average mortality in all countries. From this observation, we can say there are a lot of countries that are less developed than Thailand need to work on it. As we can see, after time passed and countries are getting developed, this rate started to decrease as well but with a more moderate rate than countries like Burkina Faso. We can speculate that the world is developing fast and the work of U5MR is meaningful and effective from the graph. What we need to do in the future is to focus on those countries whose mortality rate is still high and the speed of decreasing mortality is still low.

Compare each country with their regions and the world.

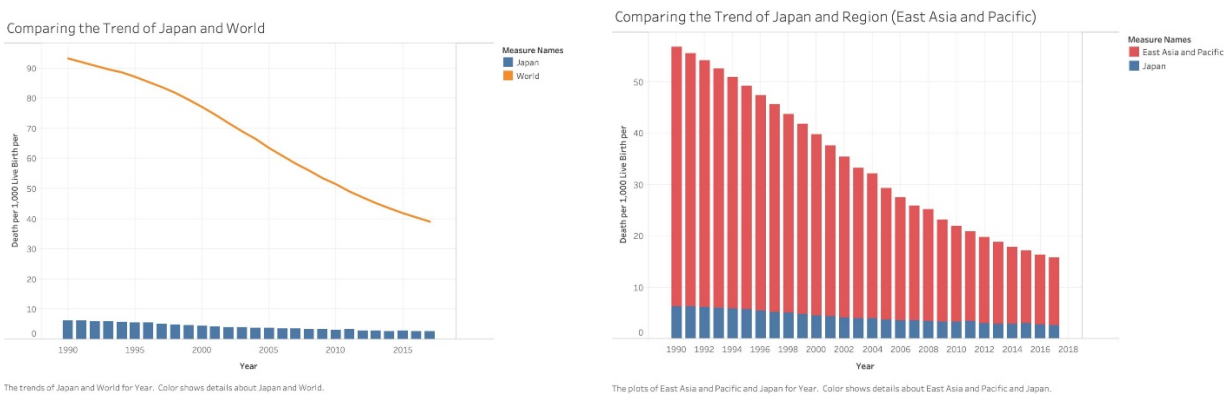

Figure 3: Comparing Japan with the world and its Region

As we can see in figure 3, compared to world Japan do great work in controlling the rate of mortality of children wenger than 5 years old, but the trend of decreasing this rate in Japan is so much lower than the world. We can also see how good Japan able to control the motility rate of children under 5 years old. But the point is every country do their best to reduce this rate, but in Japan, this rate does not decrease as much as it decreases in East Asia. So, we can say, although the Japan government does a good job, they need to step their game up to make the trend of

reduction faster. Having a low rate is good, but the point is to make it closer to zero sooner. So, Japan government needs to find the reason for these few deaths and solve this problem completely.

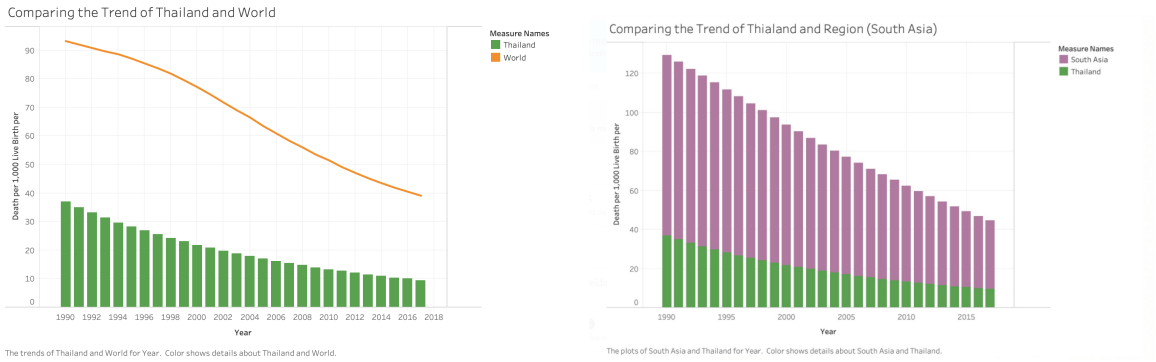

Figure 4: Comparing Thailand and with the world and its Region

As we can see in Figure 4, the trend of reduction in Thailand is matched with the world trend and at some points, they even did a better job. For example, from 1994 to 2004, the trend of reduction in Thailand is faster than the world, which shows how well they work on it. By comparing Thailand with South Asia, we can see they did a good job in decreasing the rate of mortality, but the rate of mortality in the region decreases so much faster which shows other countries in South Asia did a better job and Thailand need to act better to improve their health care standard.

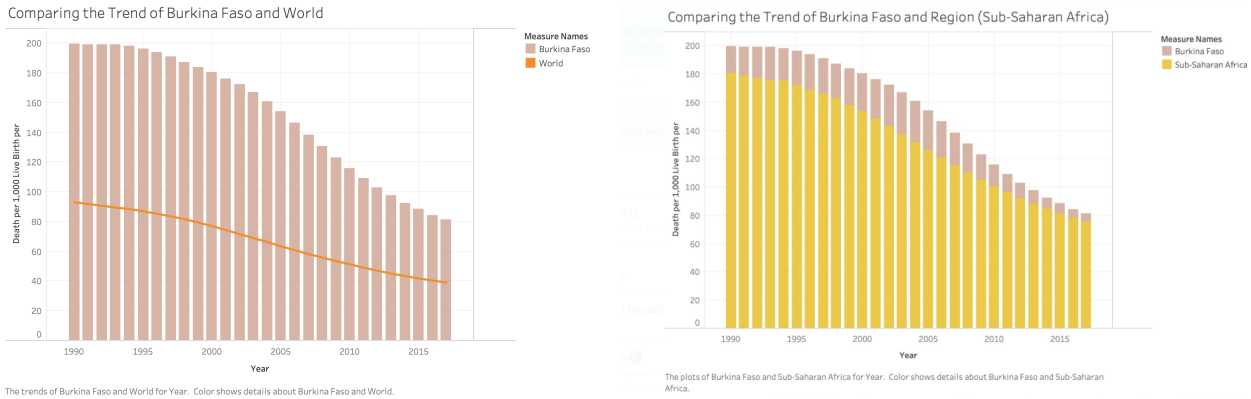

Figure 5: Comparing Burkina Faso with the world and its Region

As we can see in figure 5, the rate of mortality is so much higher in Burkina Faso than in the world. At first, their trend is kind of match with the trends in the world, but then their trend has become so much faster than the world and they did an amazing job in controlling the rate of mortality of children who are wenger than 5 years old compared to the world and other undeveloped countries. The rate of decrease mortality in this country is faster than its region. That means Burkina Faso responsible for most of the rate decreasing in its region and the need to keep doing whatever they are doing.

Forecasting the future

After we analysis the mortality rate of children under 5-year-old from past to current, now we can use the trend for forecasting the future for these three countries in order to see how much they will get close to the SDG goals for child mortality aims to end by 2030, preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 deaths per 1,000 live births and under-5 mortality to at least as low as 25 deaths per 1,000 live births.

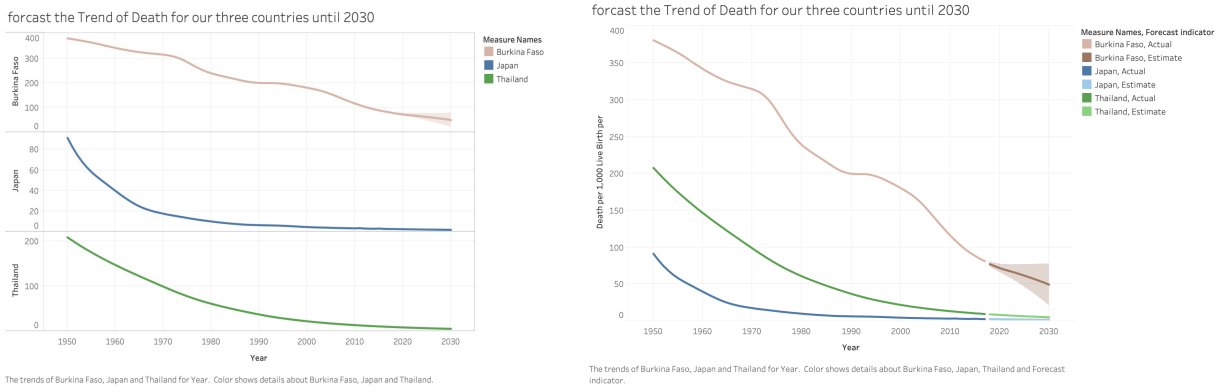

Figure 6: Forecasting the mortality rate in 2030 for our three countries

As we can see in figure 6, the number of mortalities for Japan and Thailand is almost zero which shows they reach to the SDG goals. And the number of mortalities in Burkina Faso is estimated

near 50, which decrease a lot, but they still need to work harder to get to SDG goal and count as a developed country in this area.

Cause by Death

The second part of the Analysis included Cause by Death for the three selected countries Burkina Faso, Japan and Thailand. The below figure compares the causes of child death in 2000 and 2017.

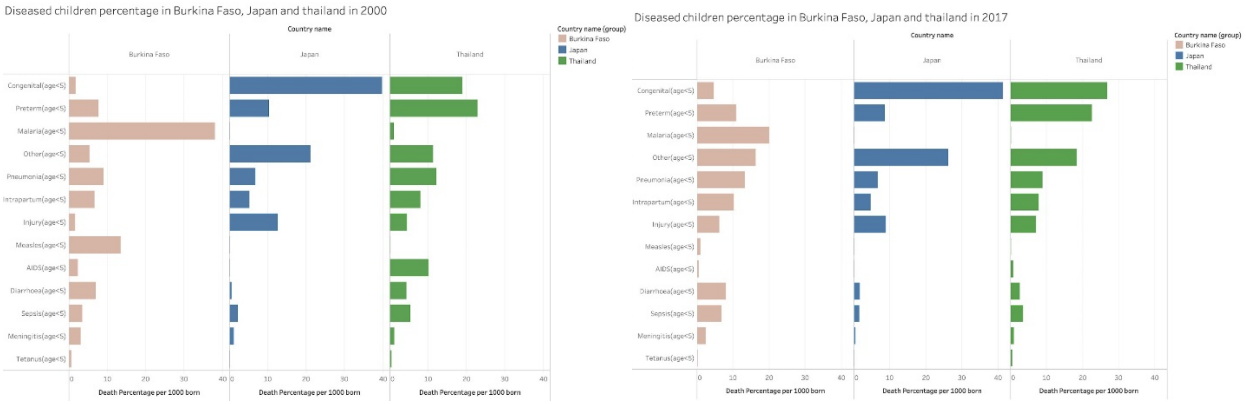

Figure 7: Comparing Diseased children percentage in Burkina Faso, Japan and Thailand for 2000 and 2017

As we can see, in Burkina Faso, in 2000 the Malaria is the biggest issue that it decreases a lot in 2017. In Japan and Thailand, the trend of sickness is the same in both years, and all of them decrease at the same time, so they working on the reason that affects all of the sicknesses.

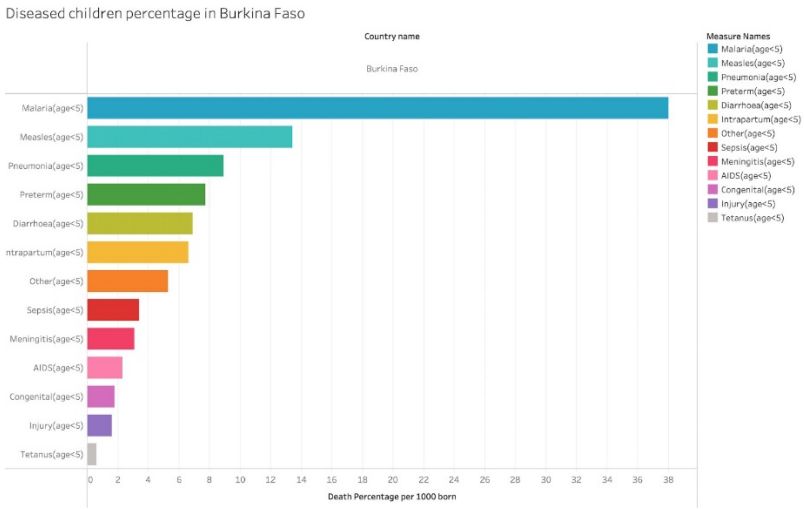

Figure 8. Comparing Diseased children percentage in Burkina Faso according to the diseases

Now we will have a deeper look in Burkina Faso. Based on figure 8, the top three diseases in Burkina Faso are Malaria, other diseases, and Pneumonia. Other diseases include Bronchitis, Dengue fever, and yellow fever. In 2016 there were 1800 probable cases of dengue virus in Burkina Faso which had been controlled by CDC after a large number of deaths.

Then, we make a comparison of these three diseases affected mortality rate per 1000 live births from the year 2000 to 2017.

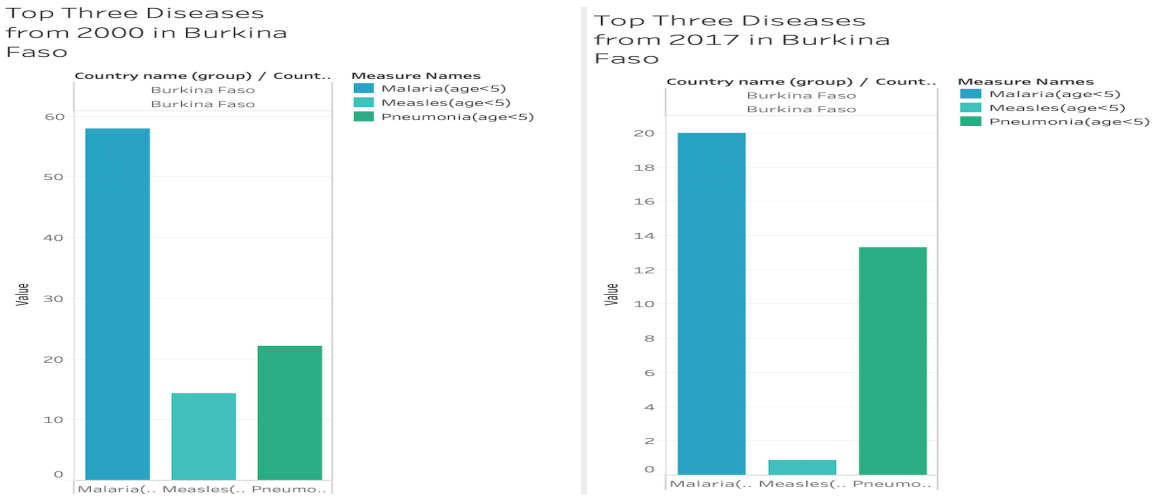

Figure 9. Analyzing top three diseases from 2000 to 2017 in Burkina Faso

In 2000, the top three diseases faced in Burkina Faso are Malaria, Measles, and Pneumonia. The percentage of each of them is 58% for Malaria, 15% for Measles, and 22% for Pneumonia. However, in 2017 there was a 38% decline in Malaria, a 12% decrease in Measles and an 8% decrease in Pneumonia. Malaria consortium established an office in Ouagadougou (capital of Burkina Faso) in 2014 to deal with a huge number of children affected by Malaria. The Consortium was able to provide chemoprevention to over 892,000 children in 18 districts and also provided knowledge of SMC delivery through health workers.

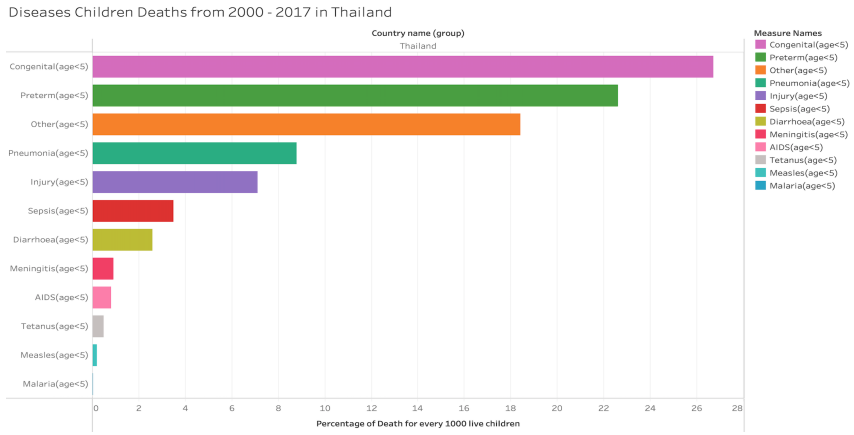

Figure 10. Comparing Diseased children deaths from2000 - 2017 percentage in Thailand

The top three diseases in 2000 to 2017 in Thailand is that 26.23% of the child deaths have been caused by Congenital, 23% by Preterm, and 18.2% by other reasons. The other reasons for death in Thailand are Zika Virus, lower respiratory infection dengue fever. According to the Thailand institute of health metrics and evaluation they were 10 million cases of dengue and 50,000 cases of the Zika virus that caused deaths and deformation of babies. However, a vaccine has been discovered for Dengue in 2017.

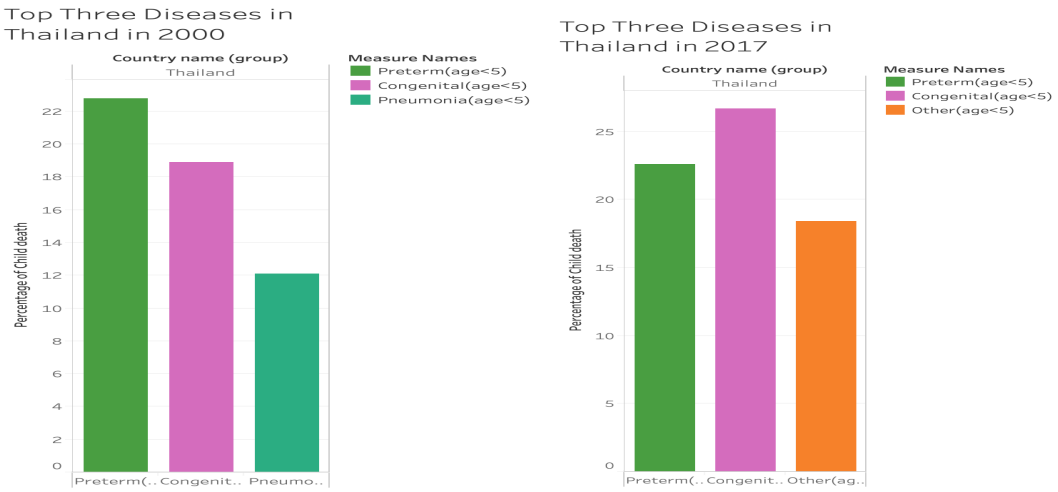

Figure 11. Analyzing top three diseases from 2000 to 2017 in Thailand

We do observe the major reasons for death in 2000 is not completely the same in the year 2017. In 2000, the major reasons for Death in Thailand are Preterm, Congenital and Pneumonia. 23% of total deaths were due to Preterm. In 2017, we can see that Pneumonia doesn't lie in the top three positions. The combine actions done by the Thailand Ministry of Public Health (MOPH) and the US CDC reduce Pneumonia in Thailand. (Henry c. Bagette,2019)

Congenital has been increasing in all underdeveloped countries and developing countries. According to the World Health Organization, “304,000 children die within 4 weeks of birth every year in Asian countries and the major reasons for that are poverty and malnutrition for pregnant women. (Wee. Rolando Y,2016)

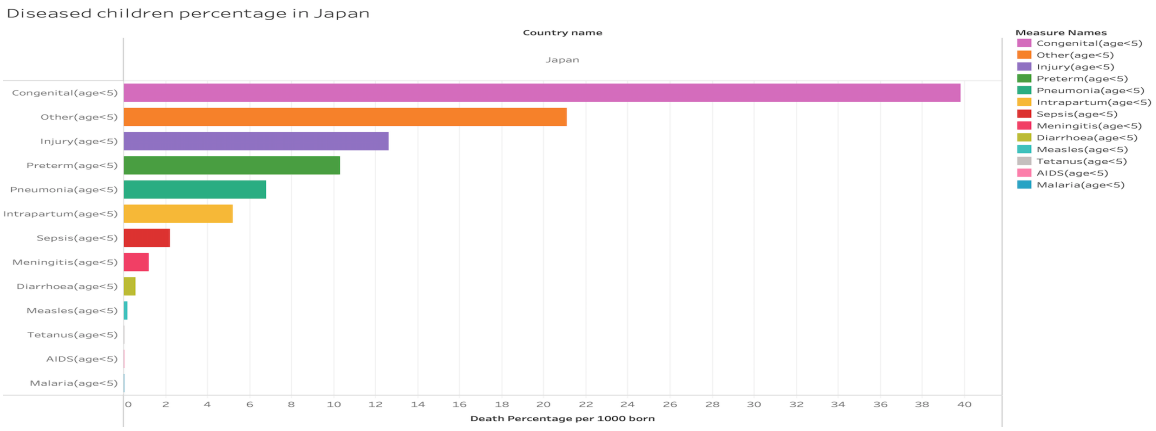

Figure 12. Comparing the diseases of Diseased children deaths in percentage in Japan

Shifting to Japan a developed country in Asia, we do observe that the end of 2017 Congenital, other and injury are in the top 3 list of japan.

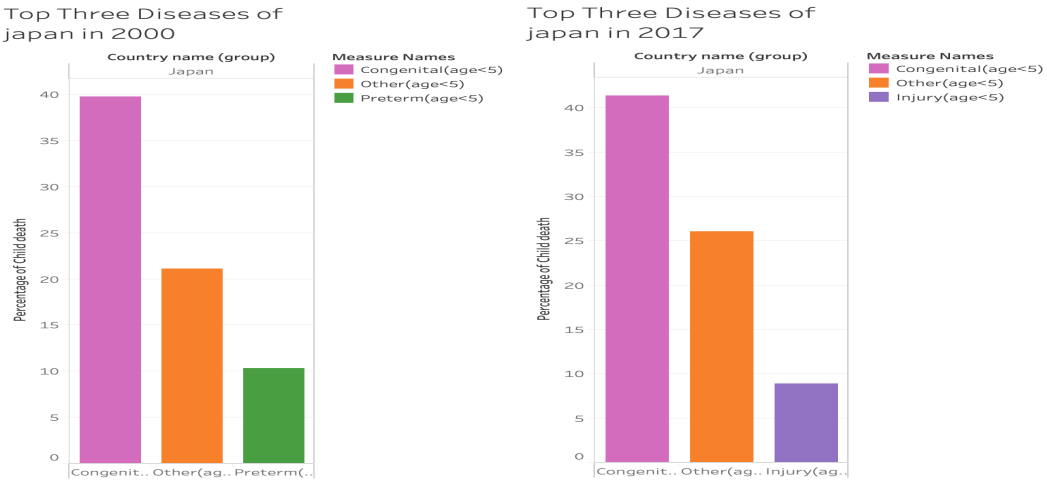

Figure 13. Analyzing top three diseases from 2000 to 2017 in Japan

It is clear that the top three diseases in Japan throughout 2000 is not wholly similar to that of 2017. We do observe that preterm deaths have decreased, on the other hand, Congenital and other diseases have increased. According to the World Health Organization, the major direct reasons for preterm deaths are poverty and lack of education.

Conclusion

The UNICEF dataset provided us with crucial information about the number of deaths per 1000 live births throughout 1950 - 2017 and also percentage contributions of various diseases towards the mortality rate per 1000 children born over various Countries and Continents. UNICEF aims to provide sustainable global growth to reduce the number of child deaths and have progressed to in decreasing the Global mortality rate by 20 % from the year 1990 to 2017. Among the three countries taken for Analysis, we have concluded that Burkina Faso suffered from a huge number of losses due to Malaria and Measles. However, the situation had turned better in 2017 with the help of malaria consortium, US CDC and other help. Not only countries like Thailand and Japan but also other Asian countries like India, China do suffer from congenital diseases and reasons are poverty and illiterate population. More than 50 % of the under 5 age group deaths were due to preventable and treatable through simple and affordable methods. Better health policies and strengthening the health system will save many more lives in the future.

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