

A dark blue vertical bar on the left side of the slide. A blue arrow points to the right from the bar, containing the text 'UWTSD (London)'.

UWTSD (London)

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(2011615)

Data Analysis and Visualization
(ACCB4002)

Lecturer: Anupam Mazumdar

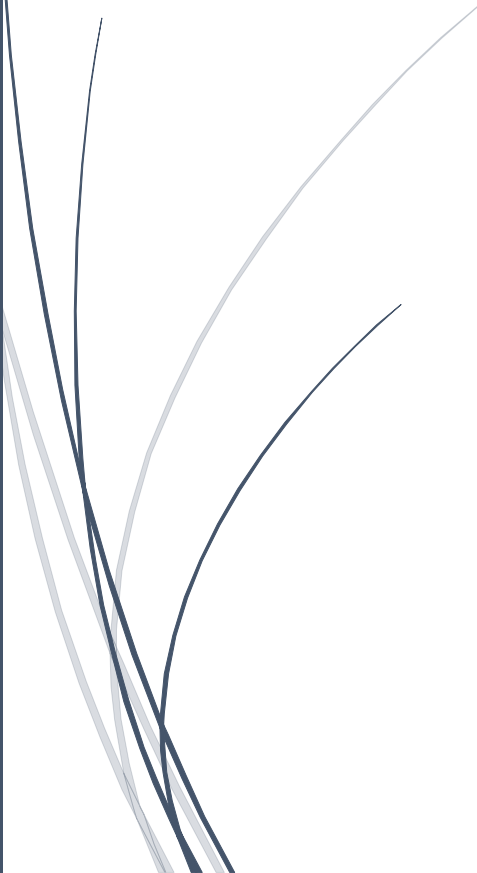
Several thin, curved lines in dark blue and light grey originate from the bottom left and curve upwards and to the right.

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Task 1: Introduction:

I have a task to analyze an infographic, which contains information regarding the pandemic Coronavirus. I will briefly explain what an infographic is, in order to do things more clear. One definition is that infographic is a chart, illustration, or a diagram, that uses graphic elements to present information in a visually striking way. [1] In the case of my assignment, it looks like the infographic that I will analyze, contains gathered information, obviously for statistical purposes. The question is whether this set of information, could be used, in any way for the benefit of humanity. First, I have to observe, if there are any limitations in regards of understanding the infographic and likewise, if it is presented in a good and sensible way. In order to do that, I will describe the infographic more detailed. At first look, it looks like, it has the shape of a hemisphere, which looks like an old radar, as there is only the upper half of it. Down in the middle is the zero, and from there, by drawing a straight line, to the top of the hemisphere, it is being divided, into two upper quarters, one left and one right. From my point of view, the infographic is clear and understandable, I don't see any cloudy or muddy letters, and the colors of the lines are very clear, and they look logically consecutive. With all this bypassed, my conclusion is that, I have enough data to start the search, for useful data that could help me for the analysis.

Insights of the infographic:

Let's look at the data, in the bottom center of the hemisphere, there is 0%. This is the heart of the infographic, this is the starting point of all the lines, there are lines, which cover the whole hemisphere in different colors. They represent the rising or falling of the Coronavirus rates, in different countries. On the left side, or in other words, on the left quarter, there are the blue lines, which are showing the falling rates of the coronavirus. As they are before 0%, they have the minus sign, which means that there is a decreasing in the rates of Coronavirus. Having in mind the color and the length of the lines, I can say that they are logically categorized, to at least two groups. The

long light blue lines, which show a higher decrease in the Coronavirus infection, and the short dark blue lines, which show a smaller rate of reduction, but both kinds of course are good indicators. On the right side, or on the right quarter, I can see many lines, at least two times more than on the left side. This time the lines are representing the countries where the Coronavirus cases are increased. The long red lines are showing a big increase of the infections while the shorter yellow and orange lines are showing again increase just not so much disastrous increases. So, I have countries, rates, both increasing and decreasing, and I have the date of the last update, which is 21 October 2020. In general, this is everything that I found, and it represents the average change per week. My next step will be to analyze the extracted data, and to find the opportunities of the infographic, if there are any.

Opportunities of the infographic:

As I already extracted the needed data, the next step of my analysis will be to identify models, trends or anything that looks meaningful one the infographic. In order to do this, I am taking out, counting or somehow taking into consideration every small detail, I think will help me in identifying any kind of models that I could use. I counted forty countries, and I tried to categorize them in different ways, so I can see the potential opportunities. In the beginning, I tried to check the countries by climate, because I have heard in the past that warm weather is killing the Coronavirus. Unfortunately, I didn't manage to create any model in this direction with the data collected from the infographic. Although that Israel for example, is in the first place within the countries of the left side of the infographic, which means that has the highest rates of reduction, and it is for sure a warm country. In the other hand, in the right side there are just too many warm countries with big rates of pandemic rising. Countries like El Salvador, Jordan, Angola, and Malaysia for example and, as they are warm countries, the rising rate of the pandemic disproof the connection between weather and Coronavirus. I also found some information about this topic on the

internet, which support that there is no clear connection between hot weather and the virus. Not only that, but vice versa, there is a hypothesis that, Coronavirus can survive, adapt and thrive to any geographic region. [2] The second model that I tried to identify, was regarding their economic status, as I believe that there should be countries that are better prepared for such disasters. However, I soon did the conclusion, even without a big research, only by looking at the infographic, that economics does not help much with this problem. It is very clear that, countries like Belgium, Italy, Switzerland, and France for instance, have the biggest weekly growth of Coronavirus cases, which clearly proves that economic status does not matter. Then I tried to find out different models that could make sense, like for instance the connection between religion and the virus. I tried to find even a connection between the virus and the countries with the biggest cities, with strong night life, full of clubs and other places that put people together. But again, those same European countries disprove any connection, and it looks like I can't find prove for any assumption.

Conclusion:

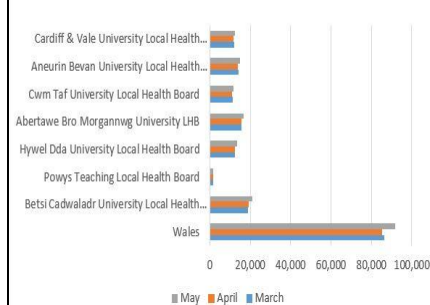
My conclusion is that, we can't fight this problem, with a tricky solutions, so the only thing that we can do is to wait for the vaccine. Regarding the infected countries, my conclusion is that some countries have less luck than other countries.

Task 2:

Q1: total number of patients:

	Total attendances		
Hospitals	March	April	May
Wales	86,349	85,334	91,680
Betsi Cadwaladr University Local Health Board	18,811	19,191	20,961
Powys Teaching Local Health Board	1,541	1,610	1,809
Hywel Dda University Local Health Board	12,354	12,302	13,332
Abertawe Bro Morgannwg University LHB	15,816	15,591	16,738
Cwm Taf University Local Health Board	11,294	11,033	11,557
Aneurin Bevan University Local Health Board	14,324	13,992	14,753
Cardiff & Vale University Local Health Board	12,294	11,615	12,508

Total attendances

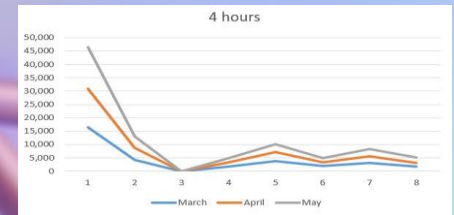


Q2: proportions of patients treated within 4 hours, 8 hours, 12 hours:

4 hours			Hospitals
March	April	May	
16,438	14,543	15,451	1. Wales
4,219	4,415	4,431	2. Betsi Cadwaladr University Local Health Board
2	2	2	3. Powys Teaching Local Health Board
1,748	1,521	1,674	4. Hywel Dda University Local Health Board
3,837	3,220	3,017	5. Abertawe Bro Morgannwg University LHB
1,957	1,470	1,555	6. Cwm Taf University Local Health Board
2,997	2,539	2,799	7. Aneurin Bevan University Local Health Board
1,678	1,376	1,973	8. Cardiff & Vale University Local Health Board

8 hours			Hospitals
March	April	May	
6,575	5,185	5,583	1. Wales
1,981	1,898	1,869	2. Betsi Cadwaladr University Local Health Board
1	0	0	3. Powys Teaching Local Health Board
739	527	603	4. Hywel Dda University Local Health Board
1,506	1,129	1,028	5. Abertawe Bro Morgannwg University LHB
599	326	441	6. Cwm Taf University Local Health Board
1,172	914	1,056	7. Aneurin Bevan University Local Health Board
577	391	586	8. Cardiff & Vale University Local Health Board

12 hours			Hospitals
March	April	May	
3,191	2,222	2,364	1. Wales
1,163	933	867	2. Betsi Cadwaladr University Local Health Board
1	0	0	3. Powys Teaching Local Health Board
423	269	378	4. Hywel Dda University Local Health Board
677	421	389	5. Abertawe Bro Morgannwg University LHB
292	139	182	6. Cwm Taf University Local Health Board
573	447	488	7. Aneurin Bevan University Local Health Board
62	13	60	8. Cardiff & Vale University Local Health Board



Q5: most likely to have to wait less than 4 hours:

4 hours			Hospitals
March	April	May	
16,438	14,543	15,451	1. Wales
4,219	4,415	4,431	2. Betsi Cadwaladr University Local Health Board
2	2	2	3. Powys Teaching Local Health Board
1,748	1,521	1,674	4. Hywel Dda University Local Health Board
3,837	3,220	3,017	5. Abertawe Bro Morgannwg University LHB
1,957	1,470	1,555	6. Cwm Taf University Local Health Board
2,997	2,539	2,799	7. Aneurin Bevan University Local Health Board
1,678	1,376	1,973	8. Cardiff & Vale University Local Health Board



Q3: Yes

Q4: most likely to have to wait over 12 hours:

12 hours			Hospitals
March	April	May	
3,191	2,222	2,364	1. Wales
1,163	933	867	2. Betsi Cadwaladr University Local Health Board
1	0	0	3. Powys Teaching Local Health Board
423	269	378	4. Hywel Dda University Local Health Board
677	421	389	5. Abertawe Bro Morgannwg University LHB
292	139	182	6. Cwm Taf University Local Health Board
573	447	488	7. Aneurin Bevan University Local Health Board
62	13	60	8. Cardiff & Vale University Local Health Board



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References:

[1] <https://www.merriam-webster.com/dictionary/infographic>

Battle Creek (Michigan) Enquirer, 28 Sept. 2014

[2] <https://www.webmd.com/lung/coronavirus-heat>

Reviewed by Brunilda Nazario, MD on September 23, 2020.