

Digital Mobile on the frontline in the war against Coronavirus.

Case of Medic Mobile

Introduction

The year 2020 will be remembered for the most devastating health outbreak since the Spanish flu about 100 years ago: covid-19. To some extent, every country has been affected by the pandemic one way or another and its effect on nations' healthcare system, economics and general overall welfare are yet to be seen.

In this article we will explore how the virus spread across Africa, with a particular focus on countries most affected, the state of affairs at the moment (are things getting any better) and finally the role of digital media in managing the pandemic.

The analysis is done using Covid-19 data from the [World Health Organization \(WHO\)](#) to answer the first two questions; and stories from one of the most active organizations in the digital health space in Africa : [Medic Mobile](#) (to answer the third question), at times in [collaboration with another big player in the space: Dumagi](#).

Spread of the Virus on the Continent

Let us start by doing a quick statistical analysis on the Covid Data from the WHO. The data set is available on WHO covid portal and four daily statistics for each country grouped by region: new case, cumulative cases, new deaths and cumulative deaths. For more details on how this analysis is done, feel free to have a look at the [project on GitHub](#)

	Date_reported	Country_code	Country	WHO_region	New_cases	Cumulative_cases	New_deaths	Cumulative_deaths
0	2020-02-24	AF	Afghanistan	EMRO	5	5	0	0
1	2020-02-25	AF	Afghanistan	EMRO	0	5	0	0
2	2020-02-26	AF	Afghanistan	EMRO	0	5	0	0
3	2020-02-27	AF	Afghanistan	EMRO	0	5	0	0
4	2020-02-28	AF	Afghanistan	EMRO	0	5	0	0
...
35541	2020-08-13	ZW	Zimbabwe	AFRO	75	4893	18	122
35542	2020-08-14	ZW	Zimbabwe	AFRO	97	4990	6	128
35543	2020-08-15	ZW	Zimbabwe	AFRO	82	5072	0	128
35544	2020-08-16	ZW	Zimbabwe	AFRO	104	5176	2	130
35545	2020-08-17	ZW	Zimbabwe	AFRO	85	5261	2	132

In this article, we will mainly focus on data from the African continent, which includes the "AFRO" region in the WHO dataset , plus a few countries on the North and North-East coast of the continent, that are classified for some reason in the EMRO region : Somalia, Djibouti, Egypt, Sudan, Libya, Tunisia, Morocco.

	Date_reported	Country_code	WHO_region	New_cases	Cumulative_cases	New_deaths	Cumulative_deaths	month
Country								
Djibouti	2020-03-18	DJ	EMRO	5	5	0	0	3
Egypt	2020-02-14	EG	EMRO	5	5	0	0	2
Libya	2020-03-25	LY	EMRO	1	1	0	0	3
Morocco	2020-03-02	MA	EMRO	5	5	0	0	3
Somalia	2020-03-16	SO	EMRO	5	5	0	0	3
Sudan	2020-03-14	SD	EMRO	5	5	0	0	3
Tunisia	2020-03-02	TN	EMRO	5	5	0	0	3

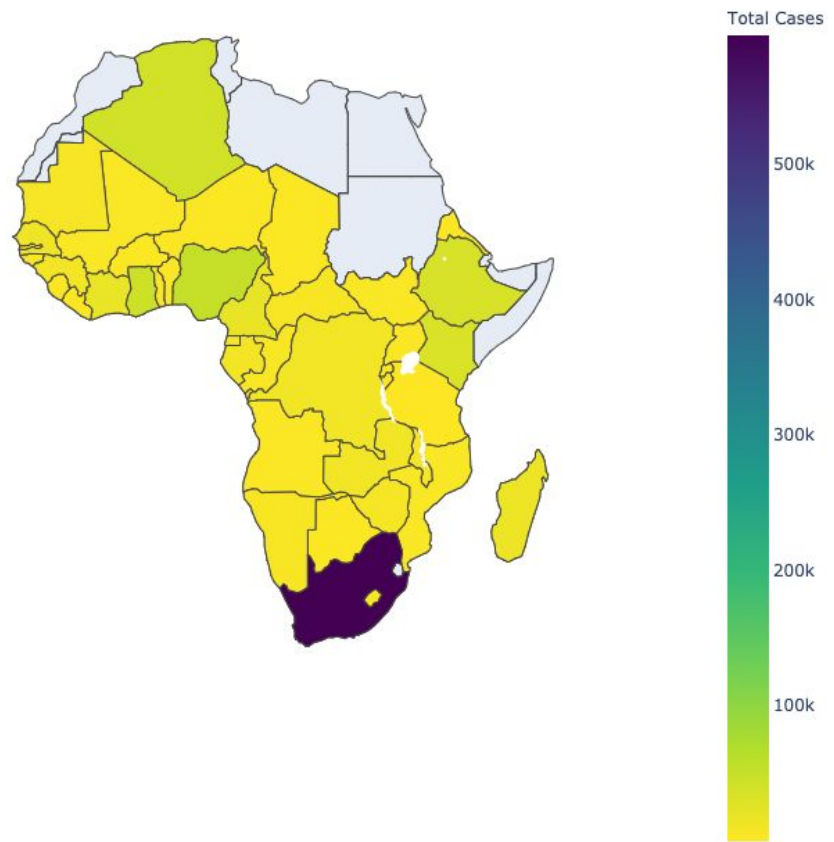
These could be easily included in the analysis if needed by either changing their region to 'AFRO' or just appending them to the 'AFRO' list by an appropriate software function.

Countries Most affected

South Africa seems to be the most affected both in Cumulative cases and Cumulative deaths.

Date_reported	Country	WHO_region	New_cases	Cumulative_cases	New_deaths	Cumulative_deaths	r
2020-08-20	South Africa	AFRO	3916	596060	159	12423	
2020-08-20	Nigeria	AFRO	593	50488	4	985	
2020-08-20	Ghana	AFRO	101	43094	8	256	
2020-08-20	Algeria	AFRO	822	39847	23	1402	
2020-08-20	Ethiopia	AFRO	1336	34058	28	600	
2020-08-20	Kenya	AFRO	379	31015	19	506	
2020-08-20	Cameroon	AFRO	138	18762	2	408	
2020-08-20	Côte d'Ivoire	AFRO	82	17232	1	111	
2020-08-20	Madagascar	AFRO	65	14074	0	173	
2020-08-20	Senegal	AFRO	141	12446	2	258	

Total Cases Africa



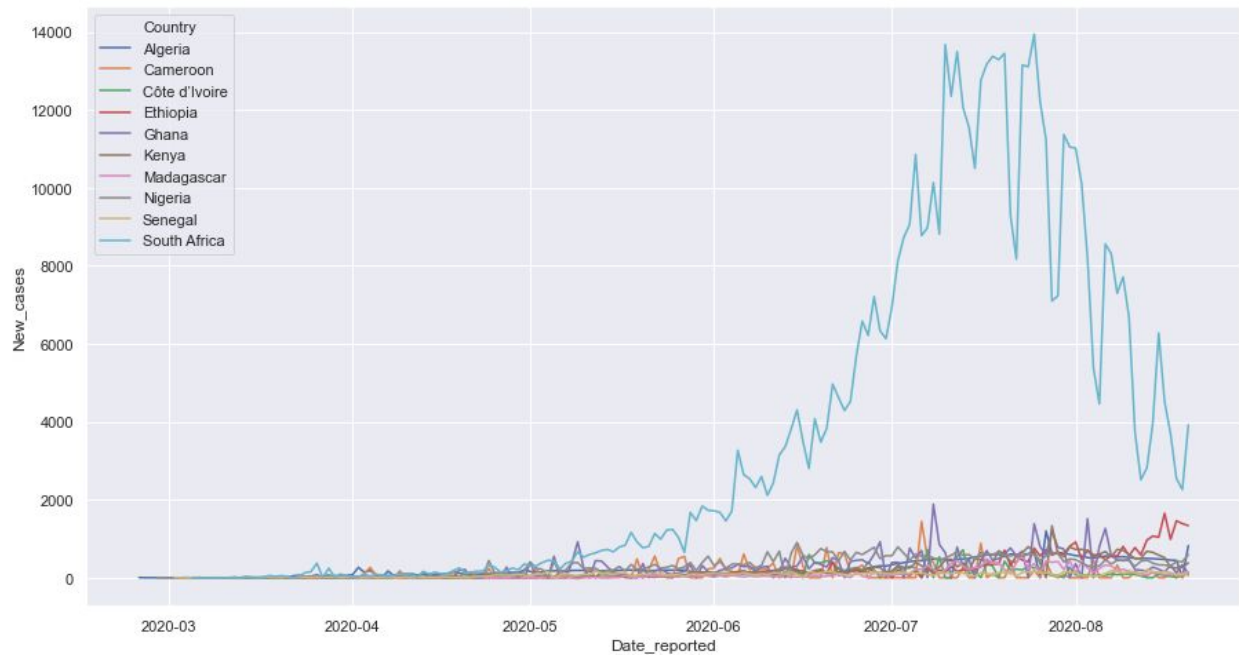
At a glance, South Africa seems to be the most affected country on the continent.

Obviously the total number does not tell the whole story. A look at cases per capita would be more significant, but a glance at the population figures shows that the most populated countries do not necessarily have most cases (Indeed, South Africa is 6th on the continent, https://en.wikipedia.org/wiki/List_of_African_countries_by_population) . Also a point to note is that the picture might reflect the capacity for testing rather than the actual numbers. For the sake of simplicity, we will use the data we have, keeping in mind those caveats as we draw conclusions.

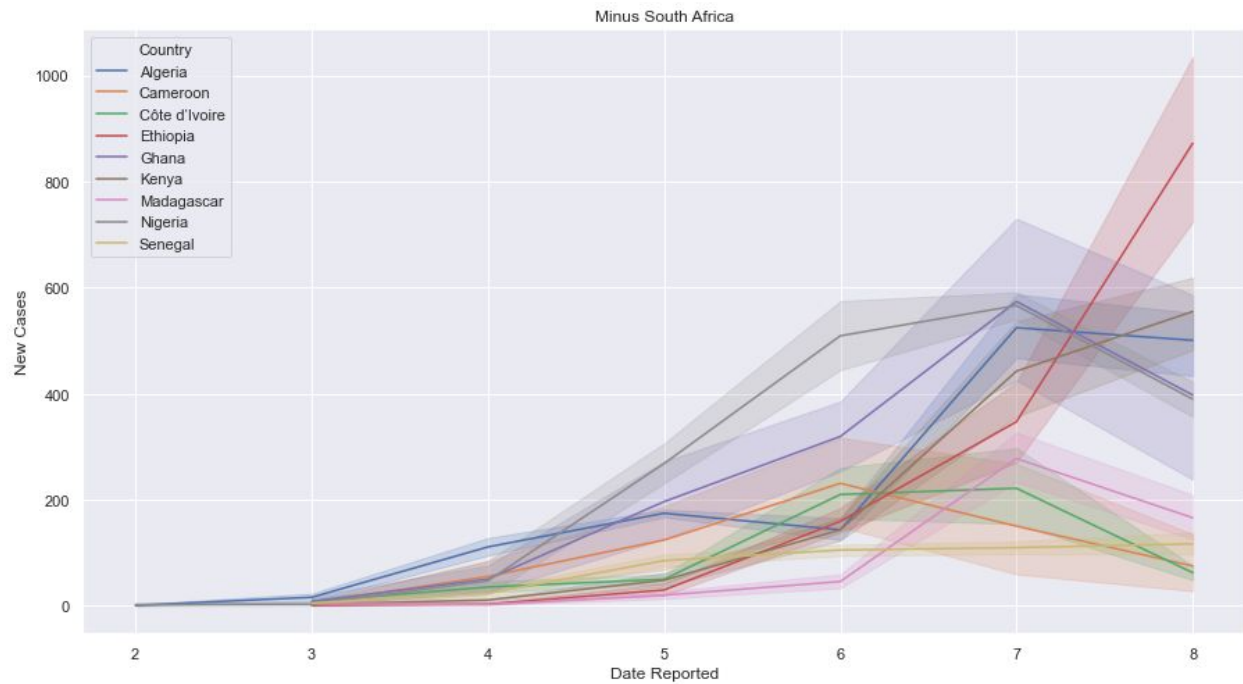
	Rank	Country	Population
0	1.0	Nigeria	206139589
1	2.0	Ethiopia	114963588
5	6.0	South Africa	59622350
6	7.0	Kenya	47564296
8	9.0	Algeria	43000420
12	13.0	Ghana	31072940
15	16.0	Ivory Coast	22671331
16	17.0	Madagascar	22434363
17	18.0	Cameroon	21917602
23	24.0	Senegal	14354690

Have we peaked yet?

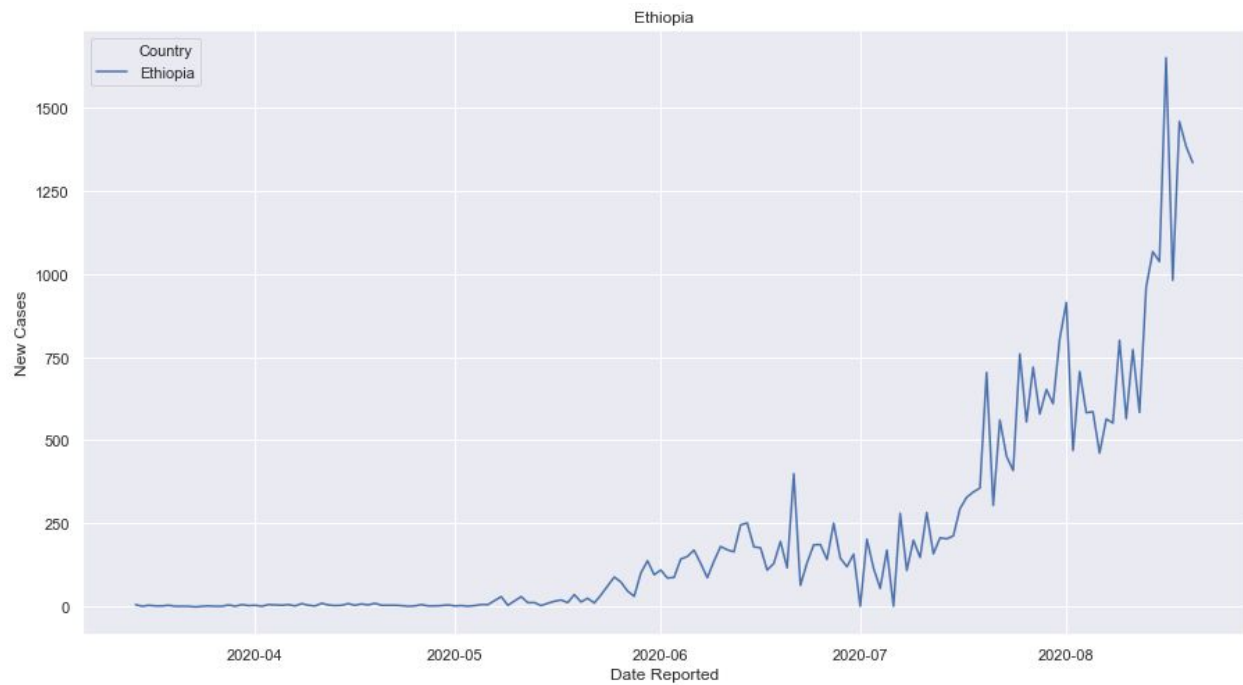
Since there has been any cure or vaccine to this moment, all efforts are now towards what has been commonly known as flattening the curve. So, to measure the success of these efforts, it pays to have a look at the 'curve' and see if countries that have already peaked. Again, for better visibility, we will focus on the top 10 with most cases.



To have a clear view, let us exclude South Africa:



Most countries have peaked, except Ethiopia (viewed on a monthly scale), but as we approach the end of August, we see some downwards trends



Digital Health to the Rescue

While research for a potential is ongoing in the four corners of the planet, many countries' strategy has been centered around 'flattening the curve', mainly to avoid overloading public health systems, but also to buy some time. There are controversies on how this should be implemented in different countries to minimize the impact on the economy but this discussion is beyond the scope of this article.

In Africa, like in other developing countries, the challenge is that countries do not have a reliable infrastructure and the means to implement most of the 'curve-flattening' measures that were implemented elsewhere. Luckily, a number of organisations have been working in these settings for quite some time and were quick to rise to the occasion to finetune or customise existing tools to be used in response to the virus. One such tool is the Community Health Kit, developed by Medic Mobile, a "501(c)(3) nonprofit organization founded in 2010 to improve health in the communities that are hardest to reach." In collaboration with other organisations in digital health space such as [Dimagi](#), Partners in Health, ministries of health and a number of Volunteers from big tech companies in Silicon Valley including Google, the community health kit was quickly and reliably customised to manage data collection, case reporting and contact tracing in [Kenya](#), Uganda etc. See [New Rapid Diagnostic Test App for CHWs](#)

Conclusion

Like the rest of the world, Africa has been affected by the current pandemic and is fighting hard to contain the situation. But unlike developed countries, most countries on the continent do not have the necessary resources and infrastructure required to face such a highly contagious and fatal virus. Luckily, there were already established organizations and tools that were used to improve health outcomes in other areas which were quick to respond to the challenge. In particular, Medic mobile was able to configure their existing Community Health Kit to create apps that are being used for case management and contact tracing, in collaboration with other players in the digital health space such as Dumagi.

Reference

1. **WHO Coronavirus Disease (COVID-19) Dashboard**
2. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)31532-4/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31532-4/fulltext)
3. Africa: Covid-19 Exposes Healthcare Shortfalls
Prioritize Investment to Improve Access to Care for All
<https://www.hrw.org/news/2020/06/08/africa-covid-19-exposes-healthcare-shortfalls>
4. <https://africacdc.org/news-item/african-union-rolls-out-partnership-to-accelerate-covid-19-testing/>

5. <https://www.ictworks.org/who-usaid-digital-health-solution-covid-19/>