

COVID-19 DEATHS AND VACCINATION IN NIGERIA: *An appraisal*

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BACKGROUND1

Previous estimates [1-3] from *mathematical modeling and worst case scenario* indicate more persons died from COVID-19 as a share of the vulnerable population in Sub-Saharan Africa (SSA) Nigeria inclusive **by 2021 ending**, than elsewhere due to **late and inadequate vaccination**

BACKGROUND2

With the global emergency declared over in **May 2023** [4], we compared COVID-19 deaths in Nigeria before and after vaccination commenced to observe how vaccination impacted COVID-19 deaths trajectory

METHODOLOGY

COVID-19 cases, deaths and vaccination rates in *World Health Organization (W.H.O)* *database up to 07 June 2023* and other variables of interest in other open-sources [5-7], were extracted and examined. Case fatality rate (CFR) per 1,000 for the period prior to vaccination (**CFR1**) and the period after vaccination commenced (**CFR2**) were computed . Simple statistics were used in data analysis with results presented in Tables & Figures

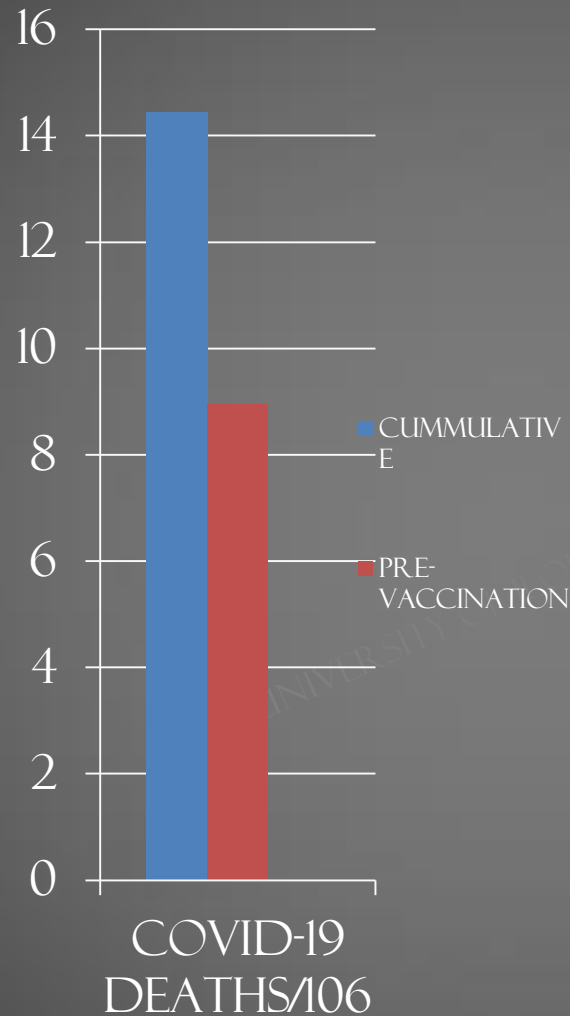
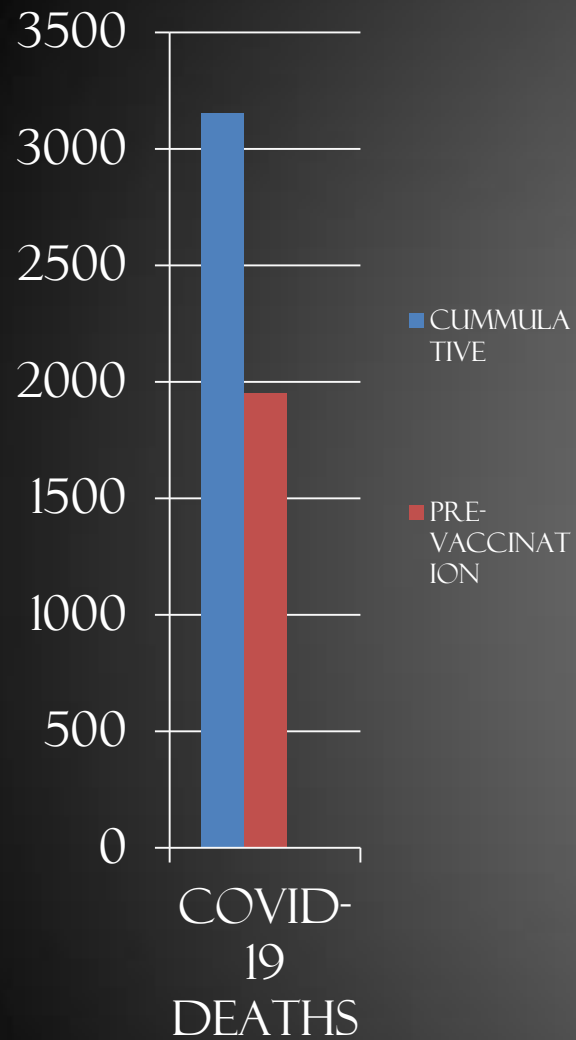
SUMMARY OF RESULTS IN TABLES

Table 1: COVID-19 VACCINATION AND MORTALITY IN NIGERIA

VARIABLE	VALUE
Date first case was reported	19/03/2020
Date COVID-19 Vaccination started	05/03/2021
Cumulative cases at start of vaccination	157671
Cumulative cases as at June 7, 2023	266675
Cumulative deaths when vaccination commenced	1951
Cumulative deaths/10 ⁶ when vaccination commenced	8.927
Duration of period before vaccination commenced (in months)	12 months
Duration of period after vaccination commenced up to June 7, 2023	27 months
Cumulative deaths, 1 year after vaccination started and the corresponding % change from deaths at the start of vaccination (in brackets)	3142 (61.04%)
Cumulative deaths, 2 years after vaccination started and the corresponding % change from deaths at the start of vaccination (in brackets)	3155 (0.67%)
Cumulative deaths as at June 7, 2023 since pandemic started and the corresponding % change from deaths at the start of vaccination (in brackets)	3155 (0%)
Cumulative deaths/10 ⁶ at June 7, 2023 since pandemic started	14.437
Overall % change in deaths since vaccination started	61.71%
Persons with incomplete vaccination per 100	39.94
Persons vaccinated with a complete primary series per 100	33.86
Persons vaccinated with at least one booster or additional dose per 100	5.97
CFR1	1.237%
CFR2	1.105%

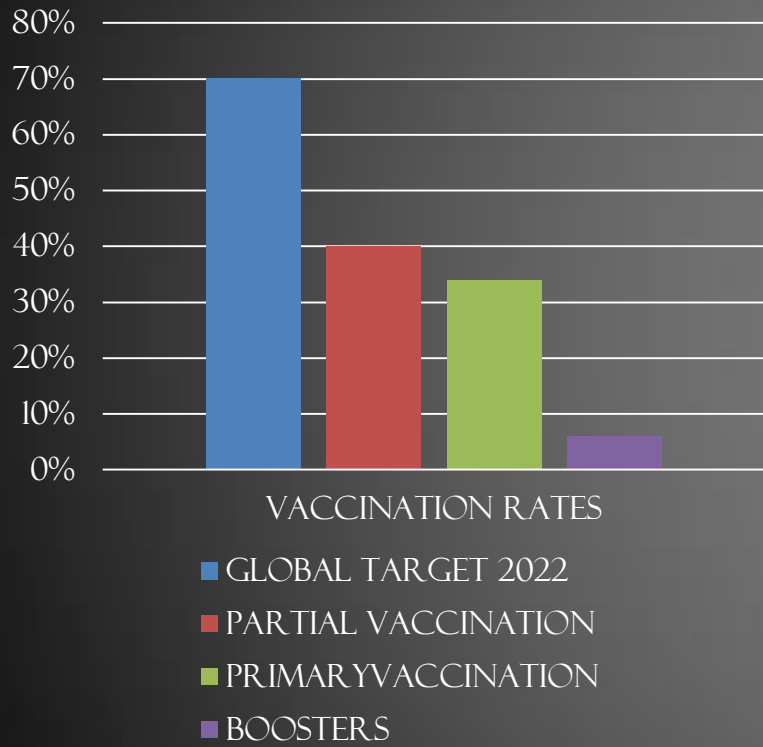
Table 2: CRUDE DEATH RATES (deaths per 1,000) IN NIGERIA

YEAR	Deaths per 1,000
2022	12.4
2021	13.1
2020	13.0
2019	13.0
2018	13.2
2017	13.4
2016	13.6
2015	13.8
2014	13.9
2013	14.0
2012	14.2
2011	14.3

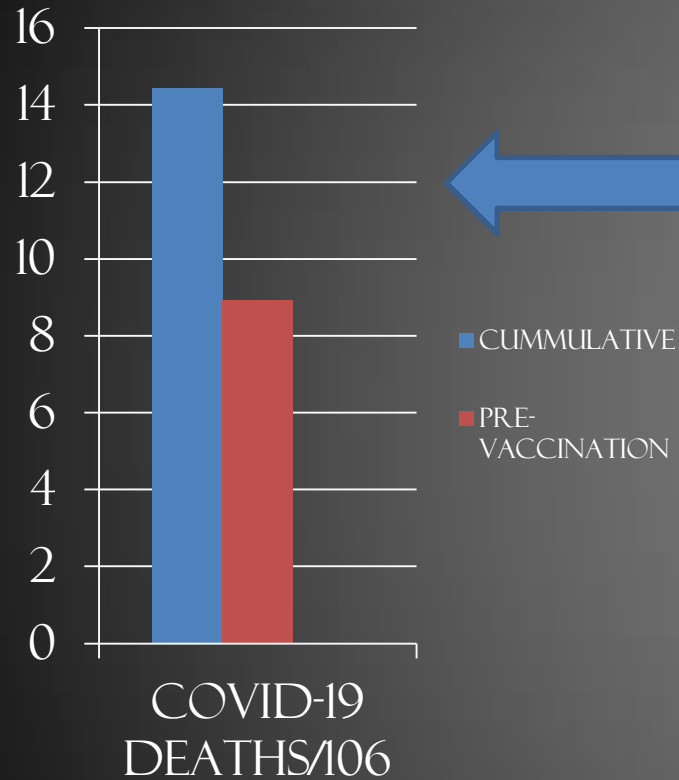


Majority (**61.84%**) of COVID-19 deaths over the pandemic emergency (of 3⁺ years) was in the **pre-vaccination era** i. e.in the **one year to March 5,2021,** whether absolute mortality figures or after correction for population size (10⁶) was used.

VACCINATION RATES VS TARGET



This was with vaccination rates below the **70% target** prescribed for **2022** to end COVID-19 emergency everywhere [**8**]



Paradoxically, COVID-19 mortality also surged by **61.70%** from **8.93/10⁶** pre-vaccine to **14.44/10⁶** with vaccination as of 07 June 2023.

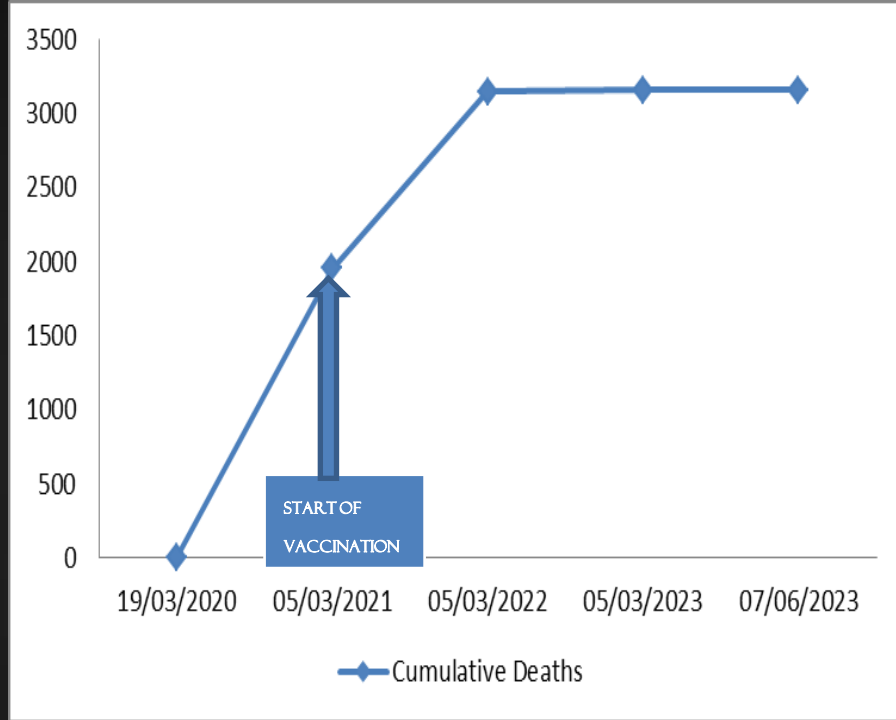
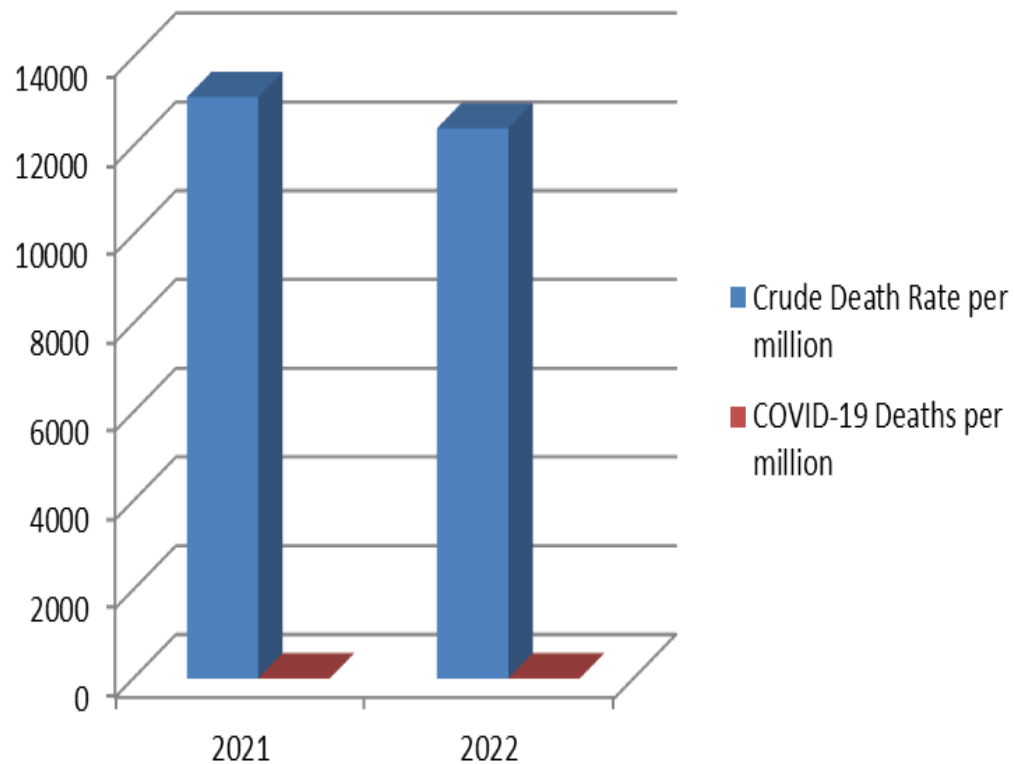


Figure 1: Cumulative Deaths from COVID-19 in Nigeria from the start of the pandemic (19/03/2020), start of vaccination (05/03/2021), one year after vaccination started (05/03/2022), two years after vaccination started (05/03/2023) and up till June 7, 2023.

Specifically, **98.92%** of the increased COVID-19 deaths (**1191**) with vaccination occurred within the **first year post-vaccination** with **13 deaths (1.08%)** recorded subsequently

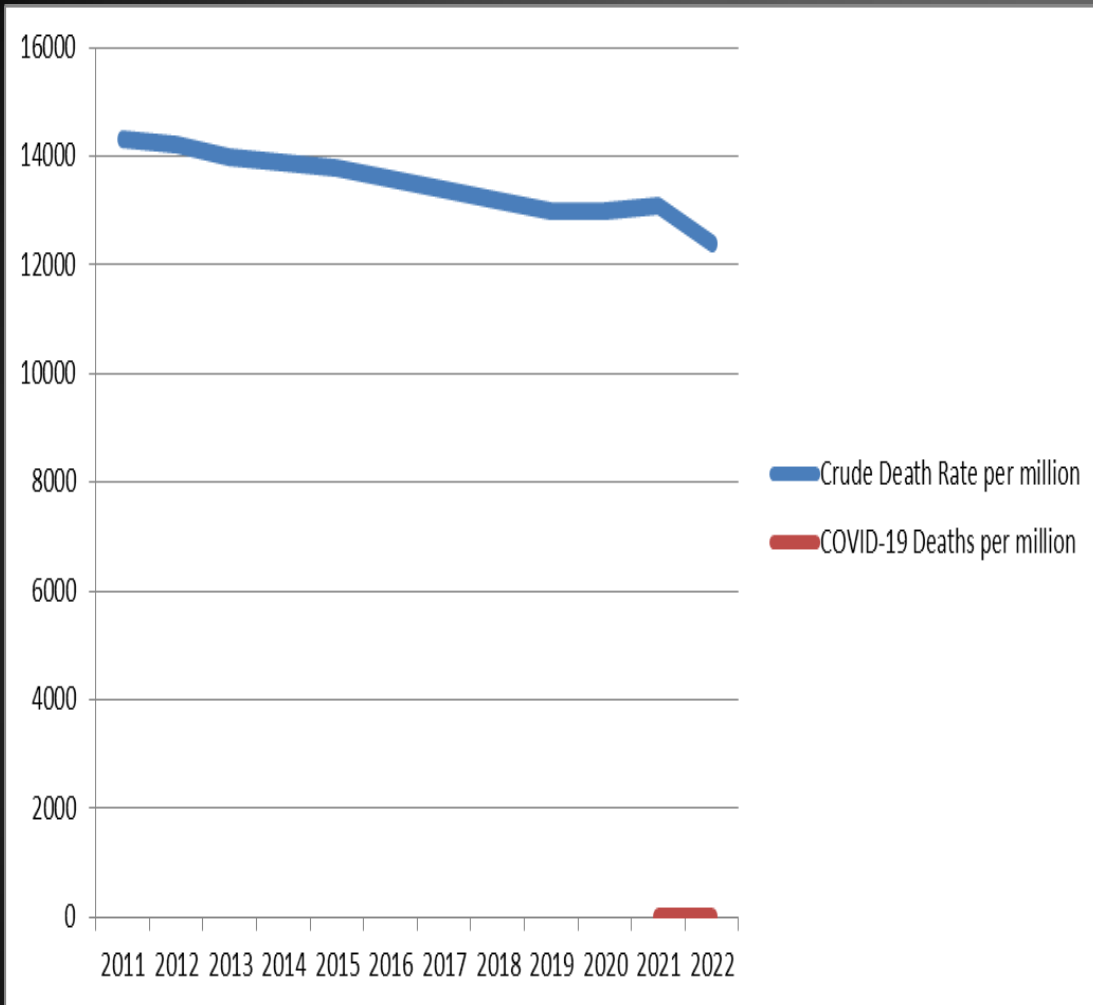


Even so, the COVID-19

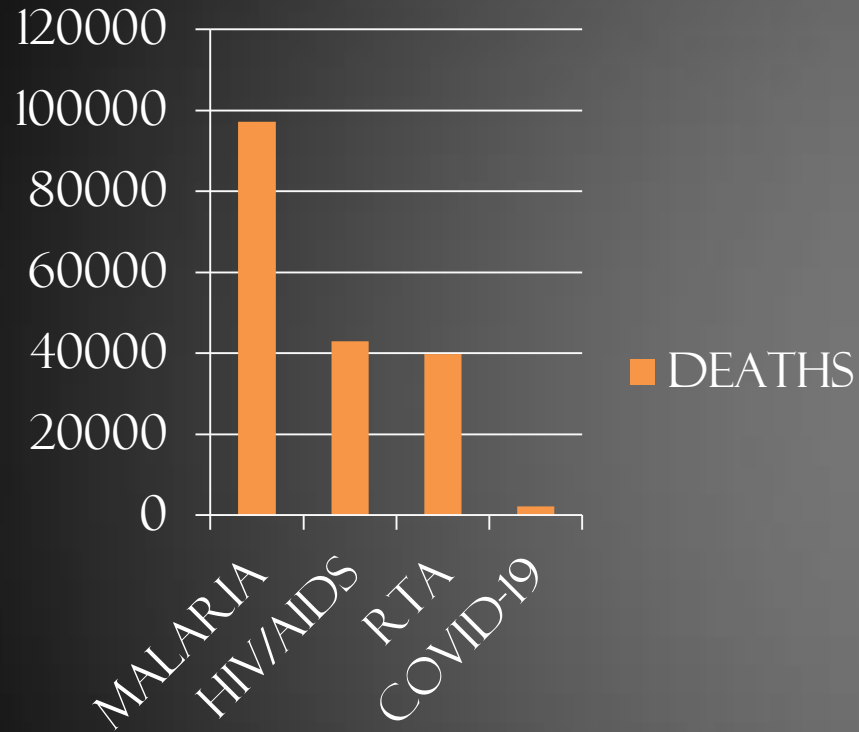
mortalities were about a **1,000**

folds less than the **annual**

national crude death rates (CDR)

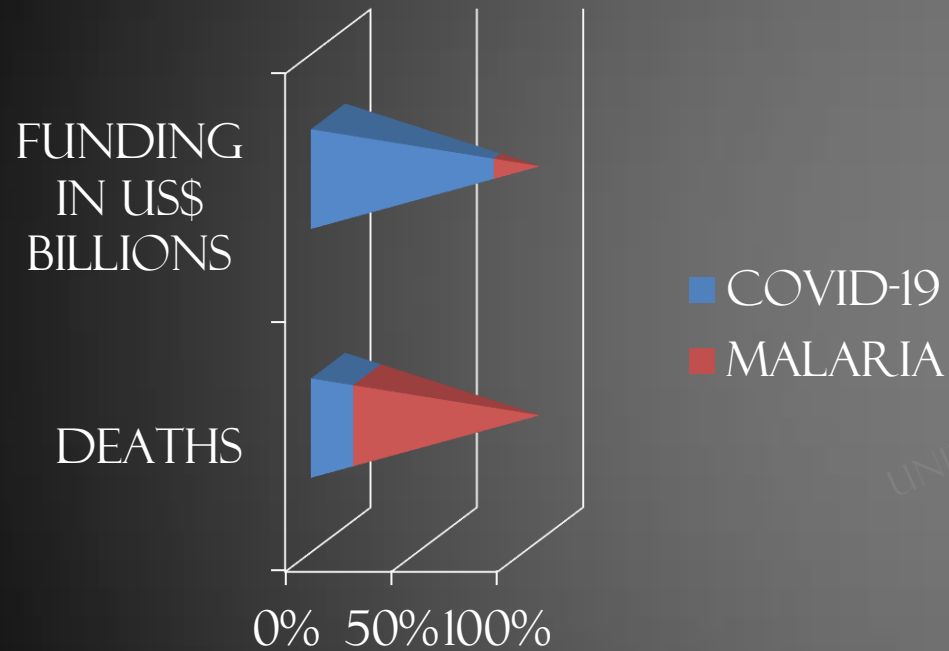


And the declining annual CDRs since 2011 seem unaffected by the COVID-19 deaths which contributed barely 0.001% to it over the pandemic years



SOURCE: OKORO, EO ET AL 2021

Also, relative to major pre-existing public health conditions, the COVID-19 mortality was low and almost imperceptible [9]



OKORO, EO ET AL 2022

This outcome was associated with **severe collateral damage** including diverting badly needed funding away from conditions killing more Nigerians, disrupted regular health services and economic activities

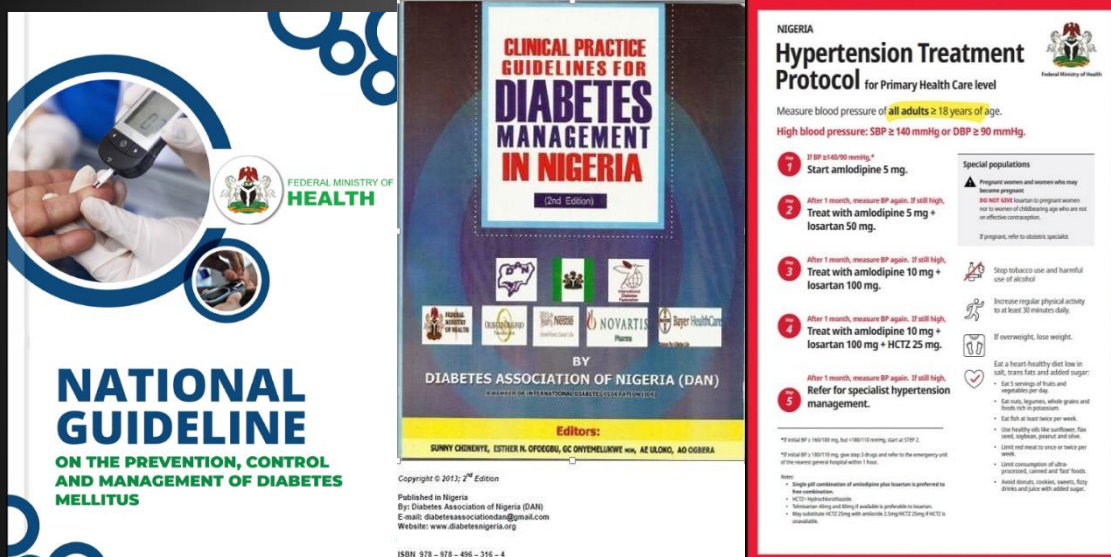
[10-12]

THE QUESTION IS WHY

&

WAS IT INEVITABLE ?

In this, remember Nigeria is perhaps the only nation where people receive **pointless interventions** that benefit third parties operating in the health sector for profits as **NATIONAL BEST PRACTICE**, even as dominant disease behavior in the population indicates a better and cheaper approach [13-17]



CONCLUSION

The results show higher COVID-19 deaths **pre-vaccines** which accelerated with vaccination before stabilizing

RECOMMENDATION

COVID-19 mortality was relatively low but the **national response** also delivered severe unintended consequences **potentially avertable**; therefore, a **study** including public inquiry of **decision-making** during the global emergency could generate important lessons for the future

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