COVID19 App for Latin America

# Version Control

## Version 1

Beta edition has the following functionalities which I will try to implement.

* Data Refreshing: up to date data which loads from John’s Hopkins upon loading app
* Basic plots from Usama

## Version 2

Second version adds some interactivity including:

* Allows country of interest choices via DT (<https://yihui.shinyapps.io/DT-rows/>). Selected countries will be highlighted with color and boldness while the other lines will turn grey.
* Time: From onset vs Time trends

The data will be limited to confirmed counts and another tab will be included in the next versions which introduces confirmed cases.

## Version 3/4

Second version adds some visualizations of recent trends by

* Cleaned up DT
* Embed recent trends in DT via sparkline (<https://leonawicz.github.io/HtmlWidgetExamples/ex_dt_sparkline.html>)

## Version 5

This will add a tab for deaths and increase options for visualizations

* Updated Date as of…
* Tab for death vs cases
* Sparkline highlight: show date and number
* Try uploading to UHC server

## Version 6

* Tabset: for “Plot”, ”Map” (see layout to right).
* “Plot” Side Layout for options and plot with columns below.
* “Map” base map and absolute panel
* Nest country inputs to allow for (SALURBAL, LAC, REF)
* Allow for reference cities to be plotted
* Clean up overlapping repelled labels

## Version 7

* Add About app tab (with brief description of SALURBAL and development team)
* Plots:
  + Change ordering of repel labels over lines
  + Remove segment color for all repels
  + Expand x axis so repels fit!
  + Dynamic label positions for doubling
* Prepare map data
* Add bubbles for (counts and deaths over time)
* Add UHC logo and SALURBAL logo
* Add Brazil Data to plots
* Upload to DP5 server

## Version 8

Improving performance on the UHC server will the goal of this version. We

* Cache rendered ggplots
* Streamlined leaflet

## Version 9

* Update twitter handle to UHC link
* Function file
* Add “Lock Down Effect” tab
  + Fix so that plot is for incidence!
  + Added smoothing
* UI Change tab names:
  + plot-> Cumulative, lockdown -> Daily
  + Title to COVID19 in SALURBAL Countries
  + Input named list
* Cumulative plot:
  + add foot not for scaling dotted lines , add a week (7 days … line)) instead of label on chart.
  + Get Brazil State names
* “Lock Down Effect”
  + Extend find range to first case to end
  + Include only LAC countries for lockdown
  + If no lock down then just plot lines, no dotted.
  + Add foot note for lines
  + El Salvador is very interesting… national lock down occurred before even first case!
  + 5.2 day intervals

## Version 10

* Add note about definitions of lock down
* Front load data management:
  + Create github database for internal data.
  + Create an R scheduler process to upload fresh data everyday at 9:00PM Eastern. CSSSE updates at 8:00PM Eastern.
    - Schedule task: <https://stackoverflow.com/questions/2793389/scheduling-r-script>
    - Pushing from within R script: <https://stackoverflow.com/questions/55432420/how-can-i-commit-changes-to-github-from-within-a-r-script>
* Uploaded on ShinyProxy
* National data
  + New countries and cats as per “paises\_lac” (remove from this the SALURBAL countries).

## Version 11

* Subnational data
  + Functionalize state operations.
  + Brazil L1 and L2 (Cumulative and Daily)
  + Mexico State, L1 and L2
  + Chile by L2
* **Cumulative**
  + **Functionalized plots**
* Daily
  + Extended BR states to all.

## Version 12

* Cumulative:
  + **Remove non-salurbal from top 10, add as its own categories at the bottom of list.**
  + **Clean up title names**
* Daily:
  + **Add Mexico L1 and L2 with only green lines for cases**
  + **Smoother (1 to 7, odd numbers)**
* Data
  + **Remove SALID Name**
* Map
  + **Change zoom to south America**
  + **Check box for Deaths, rates**
* Data Download
  + **Remove SALID name**
  + **Add SALID0 for global**

## Version 13

* Cumulative:
  + Rates option
  + Req() for plots to prevent errors during transitions
  + Change rate plots to start with 1 per million or something….
  + Default L1/L2 pick the number with largest number of cases
* Daily
  + Req() for plots to prevent errors during transition
* Map
  + Check box for Deaths, rates
  + Remove marker when zero
* Data
  + Make the rate per # more consistent 10M for deaths and 1 M for cases.
  + Remove all SALID1 use names only

## Version 14

* General
  + Added req() functions to remove errors
  + Automatic upload script
* Data
  + Brazil
    - There are drops for L1 Recife. This can be traced back to the raw municipality level data for Mexico.
  + Mexico
    - Added Date of death for Mexico
  + Add Chile
  + Add Columbia
* Cumulative
  + Unlinked plot options from data options
* Map
  + Add L1 bubbles
* About
  + Update subnational data
  + Version log
* General
  + Added req() functions to remove errors
  + Automatic upload script

## Version 16

* General
  + **Make the SALURBAL logo less squashed, use a square version as provided by Andrea**
  + **Add LAC-Urban Health logo throughout**
  + **Use LAC brand colors and adjust for headers**
  + **Automated unzipping and downloading for Mexico microdata**
  + Use LAC brand colors and adjust for data option menus
  + TaskScheduler for next production update.
* Cumulative
  + **Change tab name to “Total cases and deaths”**
  + **Change Plot options to “Visualization options”**
  + Add text explaining “counts” versus “rate” – this won’t be very clear to non-scientists.
  + **Change L1/L2 in plot titles/ and visualizations**
  + **Change L1/L2 in Selection**
* Daily
  + **Rename Tab to “Daily cases and deaths”**
  + **Remove smoothing option, keep default for 7 days**
  + **Remove lockdown intervals**
  + **Remove lockdown intervals from legend**
  + Second tab to compare between cities, either by cases or deaths (but not both simultaneously). My approach here has been to, if there are multiple cities, just normalize every city by its peak, and have % of peak in the y axis)
  + **Remove or explain helper icons!**
  + **Added end of lock down dates**
  + Rewrite or remove the note about definitions!
  + **Formatted dates**
* Map:
  + **Remove zoom icons(+ and - )**
  + **Increase opacity of the menu or create contrast**
  + **Standardize dot radius to max of 40 and min of 3 and increased opacity to 0.4**
* Data
  + **Change L1/L2 label**
* About
  + **Remove first sentence of background**
  + **Change from covid19to COVID-19**
  + **The sentence “The data is updated daily to include reported from the previous day.” Is a bit confusing. Can you edit to say “The data is automatically updated each day to add cases and deaths reported by country and city governments the previous day.” Yes, will do**
  + **Capitalize SALURBAL in “About Salurbal” Yes, will do**
  + **Version updates – make sure to use “City” and “sub city” instead of L1/L2 Yes, will do**
  + Added landing popup
* To-do:
  + Relooking at oxford policy analysis. Adding link to source for policy/lockdown dates.
  + Standardize the bubble radius function.

## Version 16

* Data
  + Peru Subnational cases data
* Cumulative
  + Modified starting point for a-axis for rates (special case for chile) change days.since.# data to match this format.
  + Added subtitle
* Things to discuss,
  + Bubbles of rates

# Meetings

## 4/15 SALURBAL Group Meeting

* I’m thinking of an extra tab called “Mobility” where you can get each of the 11 countries from here: [https://github.com/kylemcdonald/covid-mobility-data](https://nam01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fgithub.com%2Fkylemcdonald%2Fcovid-mobility-data&data=02%7C01%7Crl627%40drexel.edu%7C74fc3f820f7e462bc79e08d7e17a999b%7C3664e6fa47bd45a696708c4f080f8ca6%7C0%7C0%7C637225788980757507&sdata=ktiIVwpb3z2L8X6Bah2nfnMou36k6zZwXWcPbf452jk%3D&reserved=0)
  + And have one plot per “domain”, with 11 lines
  + That would translate well for the US one, since they have it by county too
* Mexico by state (but check the one I sent for municipality before) [https://mexicovid19.github.io/Mexico/estados.html](https://nam01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fmexicovid19.github.io%2FMexico%2Festados.html&data=02%7C01%7Crl627%40drexel.edu%7C74fc3f820f7e462bc79e08d7e17a999b%7C3664e6fa47bd45a696708c4f080f8ca6%7C0%7C0%7C637225788980757507&sdata=rqWdbO0ChtdQ6vHNrB8Yy2gPMs5MdHWVOv5UwGm6a2c%3D&reserved=0)
* Chile by L2: [https://github.com/MinCiencia/Datos-COVID19/tree/master/output/producto1](https://nam01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fgithub.com%2FMinCiencia%2FDatos-COVID19%2Ftree%2Fmaster%2Foutput%2Fproducto1&data=02%7C01%7Crl627%40drexel.edu%7C74fc3f820f7e462bc79e08d7e17a999b%7C3664e6fa47bd45a696708c4f080f8ca6%7C0%7C0%7C637225788980767498&sdata=ZxRl0KYQFbQBVPG6pRlPMErqN%2FYfOnd97vHGahleXxw%3D&reserved=0)
* This is a great dataset of policies: [https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker](https://nam01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.bsg.ox.ac.uk%2Fresearch%2Fresearch-projects%2Fcoronavirus-government-response-tracker&data=02%7C01%7Crl627%40drexel.edu%7C74fc3f820f7e462bc79e08d7e17a999b%7C3664e6fa47bd45a696708c4f080f8ca6%7C0%7C0%7C637225788980767498&sdata=kQyfRPy1FkC3Ds1LOuwiDf2OlhiES7RKqdYNro%2BCXlA%3D&reserved=0)
  + The CSV is downloadable. Can you explore it a little bit for our countries?
* Doing rates per 100,000 will be important too, maybe can leave that in the same Cumulative/daily part, with a checkbox for “Rate?” For country populations I’d use UNDP WPP (we can talk about this later)

## 4/15 SALURBAL Group Meeting

* Mobility: on hold
* Repeat for CBSA with list of 35 cities from usama

# Outstanding issues

* Check that update occurred at 4/20 after 8:00PM.
* Sliding bar to show smoother
* Functionalize all server functions and cleaning.
* Can we cache the data management?
* Find a way to calculate recovered (# 14 days before – # died)?
* Interactive Plot in the leaftlet panel

# Resources

* Effective reactivity: <https://rstudio-pubs-static.s3.amazonaws.com/192350_d3385f81117e4506a090da03ac8d3361.html>
* Caches: <https://shiny.rstudio.com/articles/plot-caching.html>
* Leaflet optimization: <https://stackoverflow.com/questions/46186014/changing-leaflet-map-according-to-input-without-redrawing-multiple-polygons>

App Lock down

US version, get counties then aggregate to MSA (both micro and metro) with 2018 delineaaitons.. highlighting philly.