

Lesson # 21 #flattenthecurve

Stats and Probability (Outcomes SP 1,2,3,4,5,)

Now that we know understand populations and sample sizes, theoretic and experimental probability, how to identify a valid source of information and address concerns of timing, time, confidentiality, cost, cultural sensitivity, language, privacy and ethics, lets dive into better understanding COVID19 and #flattenthecurve

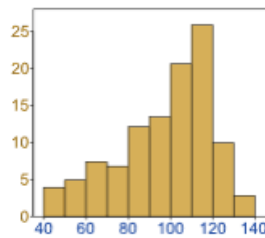
What does ***“Flatten the Curve”*** mean?

1. We need to understand firstly what is meant by the term “curve.”

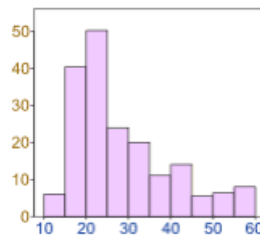
Normal Distribution

Data can be "distributed" (spread out) in different ways.

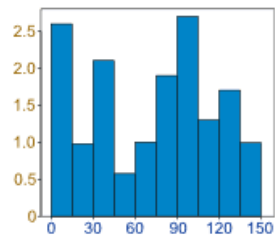
It can be spread out
more on the left



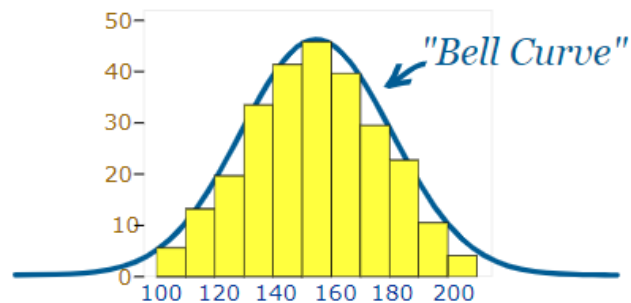
Or more on the right



Or it can be all jumbled up



But there are many cases where the data tends to be around a central value with no bias left or right, and it gets close to a "Normal Distribution" like this:



A Normal Distribution

The "Bell Curve" is a Normal Distribution.
And the yellow [histogram](#) shows some data that follows it closely, but not perfectly (which is usual).



It is often called a "Bell Curve" because it looks like a bell.

2. In your notebook on p.62 please write down your definition of "flattening the curve."
3. Read the following from the GNB website from the Office of Chief Medical Officer of Health

Covid -19 Cases and Testing in New Brunswick

Outbreak Update

With the recent rapid in cases of COVID-19, New Brunswick and Canada's window to flatten the curve is closing. The time for all New Brunswickers to act is now.

The National Microbiology Laboratory has completed over 25,000 lab tests to cast the net wide for possible COVID-19 cases among patients with influenza-like illness in clinic settings all the way up to severe respiratory illness in hospitals and even if there is no travel history.

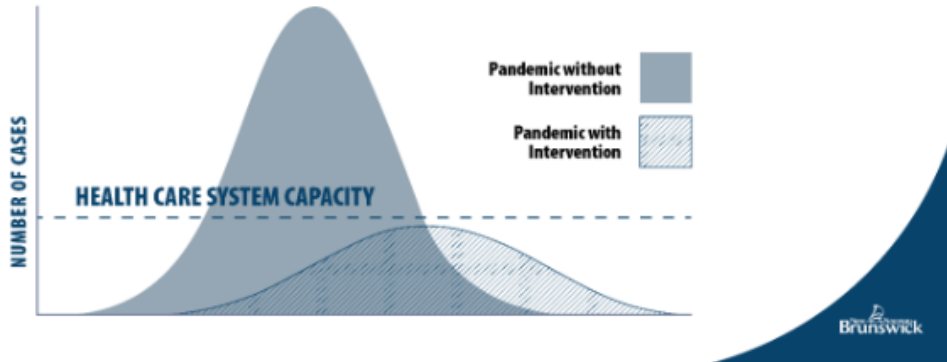
COVID-19 is a serious public health threat. While this disease is particularly serious for older adults and medically vulnerable people, all ages are at risk.

Understanding the curve

In an outbreak the number of confirmed cases is important but the rate at which the number of cases is increasing over time is also important. This information is plotted into a graph called an epidemic curve. The horizontal axis is the time cases are confirmed and the vertical access is the number of confirmed cases. The epidemic curves of outbreaks typically go in big peaks and then come down. Preventative measures can "flatten the curve".

Coronavirus (COVID-19)

GOAL OF PUBLIC HEALTH MEASURES:



Actions we can all take to slow spread/reduce impact of COVID-19:

- postpone or cancel non-essential travel outside of #Canada
- avoid large gatherings/crowds
- distance 2 arm lengths from others
- if needed/possible, work from home

Older adults and those w/ medical condition(s) are at higher risk for severe COVID-19. Practice social distancing and separate yourself from others whenever and wherever you can.

All of us need to take every precaution to protect those at highest risk of severe COVID-19, while at the same ensuring that the most vulnerable among us are fully supported and not isolated.

This is our chance, right here, and right now – we need to act immediately and act together to flatten the curve of the COVID-19 epidemic.

4. Watch the following video: <https://www.pbs.org/video/what-this-chart-actually-means-for-covid-19-ybsbtd/>
5. Go back and read the definition you wrote for flattening the curve. Add to your definition what you learned from the video and the GNB information.
6. Is New Brunswick succeeding at flattening the curve? Explain in your notebook on p.62. Where did you find your information? Would you consider this a valid source?
7. I copied the following from The Globe and Mail online on April 15th. If you only looked quickly at these three graphs: a) Which province seems to be the least successful in flattening the curve? b) What is the biggest difference in NB and BC graphically below?

BC

BRITISH COLUMBIA

AB

Daily cases

January 22 to April 15

SK

MB

ON

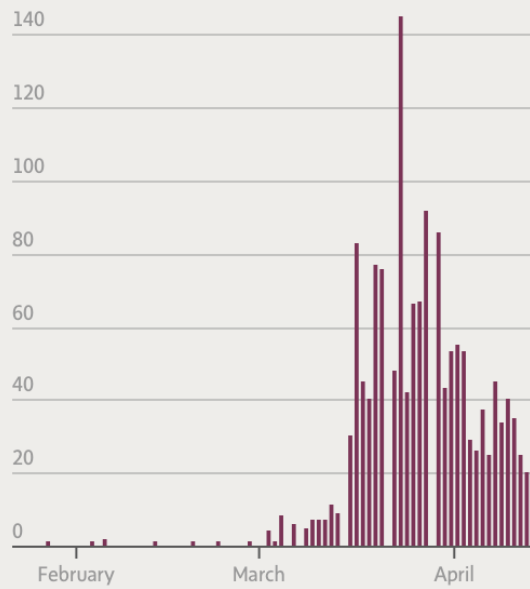
QC

NB

PEI

NS

NL



British Columbia has reported
1,517 cases, 942 recoveries and

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AA

theglobeandmail.com

BC

NEW BRUNSWICK

AB

Daily cases

January 22 to April 15

SK

April 15
1 new cases

MB

ON

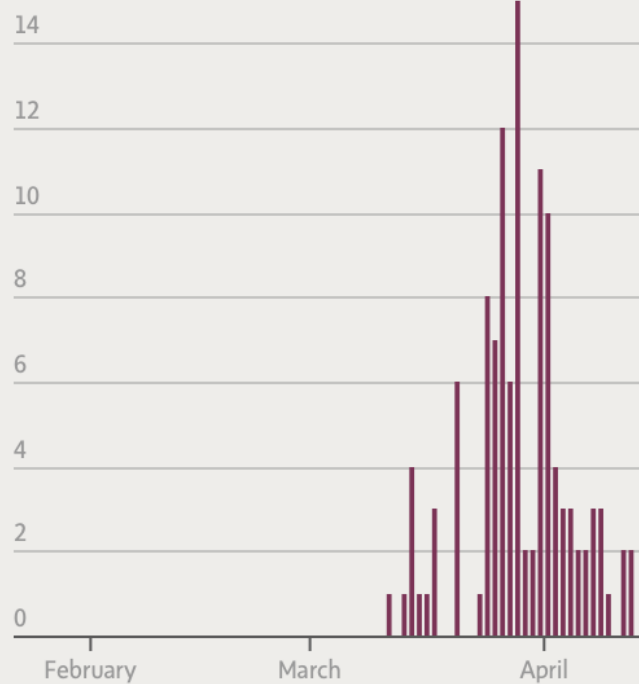
QC

NB

PEI

NS

NL



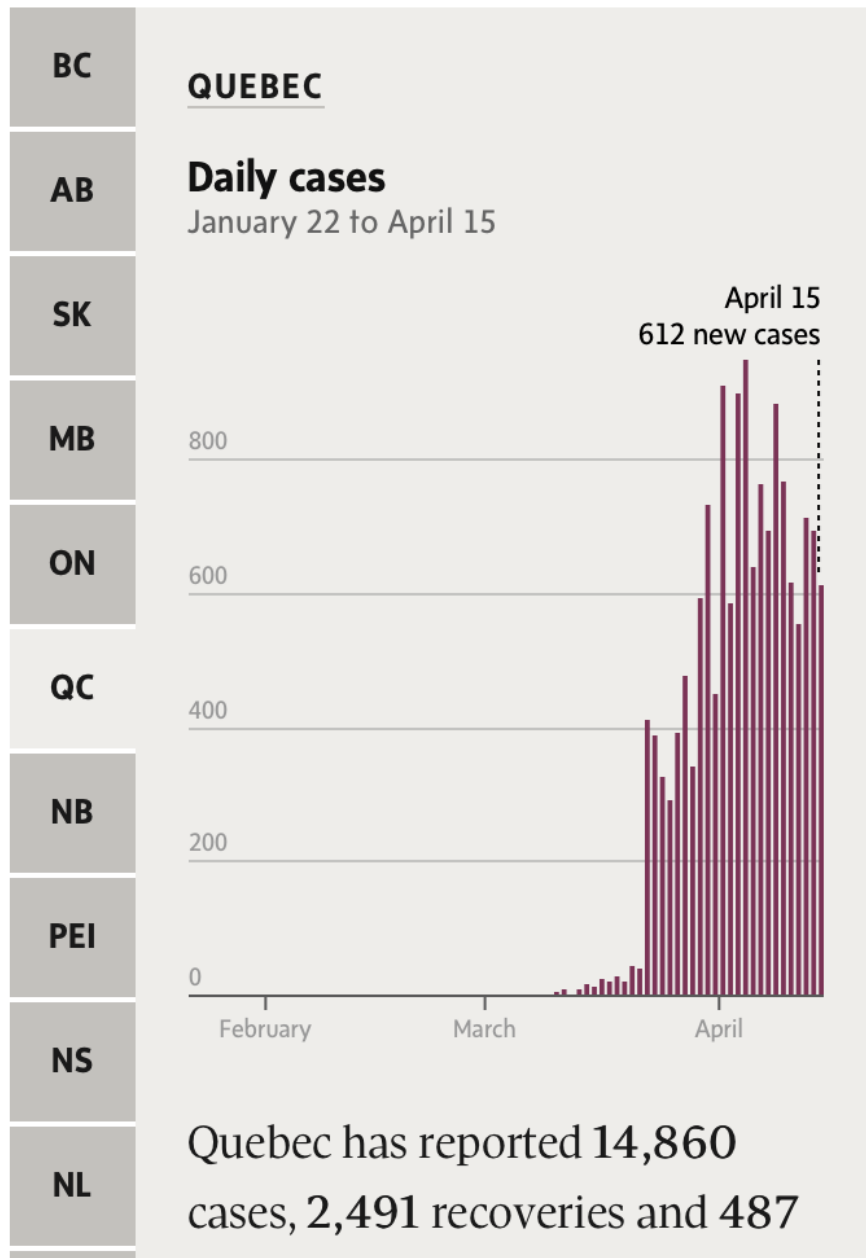
New Brunswick has reported **117** cases, **77** recoveries and **0**

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It appears on that graph dated April 15th that Quebec's curve is the most problematic. In terms of BC, NB and Québec, did you take note of how differently the y axes are labelled. It is deceiving IF you don't take the time to read how the axis are labelled. Scroll back up and take note of that! What was the highest number of cases on a single day for each of the three provinces?

7. Read the following article. Click on the provinces to see specifics on the graph (ie. Click on NB to see how long it takes for NB to double the number of cases)

<https://globalnews.ca/news/6826198/coronavirus-good-news-curve-canada-graph/>

8. The Government of New Brunswick is tracking data daily on COVID-19 in New Brunswick. Read through the information contained in the link below to test your knowledge of COVID-19. There are excellent FAQ and provincial data that is updated daily.

<https://www2.gnb.ca/content/gnb/en/corporate/promo/covid-19.html#faq>

9. Having read the GNB data, Is New Brunswick testing a population or a sample? How do you know? Why one over the other? (sample over population or population over sample). Explain in your notebooks on p.62.

Obviously, they are testing a sample. It is not possible (time, expense etc.) to test every single person in the entire province (population).

10. Yesterday, April 28th, 2020, ***Dr. Russell, Chief Medical Officer for the province of NB announced that our province had no new confirmed cases of COVID19 for the last 10 consecutive days. Way to go, New Brunswick! Keep that curve flat and only at 118 cases.