Local newspaper front headline had a big gory graphic, showing Presidio County virus spread as going "exponential." This statement has several issues:

- 1) You need to plot it semi-log to show it exponential (vertical axis logarithmic, horizontal axis arithmetic). It is the straight line section. See Figure 1 and Figure 2
- 2) In the entire Tri-County COVID 19 history, there is only one clear exponential example, and that was in Brewster County at the very beginning. See Figure 2
- 3) There are only 18,000 people in the entire Tri-County, and only 6,000 in Presidio County, which is too small a population to draw the conclusion that there is some sort of explosive growth (although there certainly could be). What happens with small populations is much higher variability (Presidio County could be considered a biased sample of a larger population, like Texas or the US). Much higher variability is obvious on the daily chart of Presidio County confirmed cases (Figure 3), but still visible on the cumulative chart. It is very noisy, so big changes in any direction on the daily chart can be due simply to variability. This also is visible on the cumulative chart seen as abrupt jumps upwards.

The US cumulative data is also shown (Figure 4), a much larger population (330m people). It is easy to see the exponential part of growth, which, like Brewster County, only happened at the very beginning. The exponential part of the growth curve, found only at the beginning of the event, is the part that is used to get the characteristic basic reproduction number (R_o) . Figure 5 shows the arithmetic progression of the US confirmed case count, which shows a lot less noise than the Tri-County examples. The spread of US data around 15 November and later is probably not variability, but characteristic of what this data typically does when it is peaking; it looks like it was, but was sabotaged by all the Thanksgivings get-togethers. Probably will try to peak again, and then get sabotaged once more by Christmas and New Years. So it goes. Figures 6 and 7 are Presidio County cumulatives, arithmetic and logarithmic,

respectively.

(Data source: Johns Hopkins data on https://github.com/CSSEGISandData/COVID-19.) Fig. 2 Brewster, Jeff Davis, and Presidio Cos. cumulative Fig. 1 900 800 The only clearly Confirmed case count **log case count** 700 exponential part cumulative 600 on any of these 500 county graphs. 400 300 200 cumulative 100 10-Mar 29-Apr 18-Jun 7-Aug 26-Sep 15-Nov 4-Jan 29-Apr 26-Sep 15-Nov 10-Mar 18-Jun 7-Aug 4-Jan PresidioBrewsterJeff Davis, Texas, US PresidioBrewsterJeff Davis, Texas, US Presidio daily log(US) Fig. 3 Fig. 4 100 18 12/15/2020 16 80 14 log case count 60 12 cumulative 40 12/14/2020 exponential part 20 0 0 -20 20-Jan 10-Mar 29-Apr 18-Jun 7-Aug 29-Apr 18-Jun 26-Sep 15-Nov 10-Mar 7-Aug 26-Sep 15-Nov US confirmed cases **US** daily 18,000,000 Fig. 5 250,000 250,000 16,000,000 200,000 #14,000,00012,000,000 200,000 10,000,000 10,000,000 6,000,000 4,000,000 150,000 Count 150,000 Daily 000'001 200,000 Dail 50,000 2,000,000 50,000 1-Dec 20-Jan 10-Mar 29-Apr 18-Jun 7-Aug 26-Sep 15-Nov 4-Jan 16-Oct US OUS daily 26-Oct 5-Nov 15-Nov 25-Nov 5-Dec 15-Dec 25-Dec Presidio Presidio Fig 7 Fig 6 600 Confirmed case count 400 300 200 100 5 4 3 cumulative cumulative 15-Nov 10-Mar 29-Apr 18-Jun 26-Sep 15-Nov 4-Jan 10-Mar 29-Apr 18-Jun 7-Aug 26-Sep 4-Jan O Presidio O Presidio