The (real-life) Story Behind the Title:
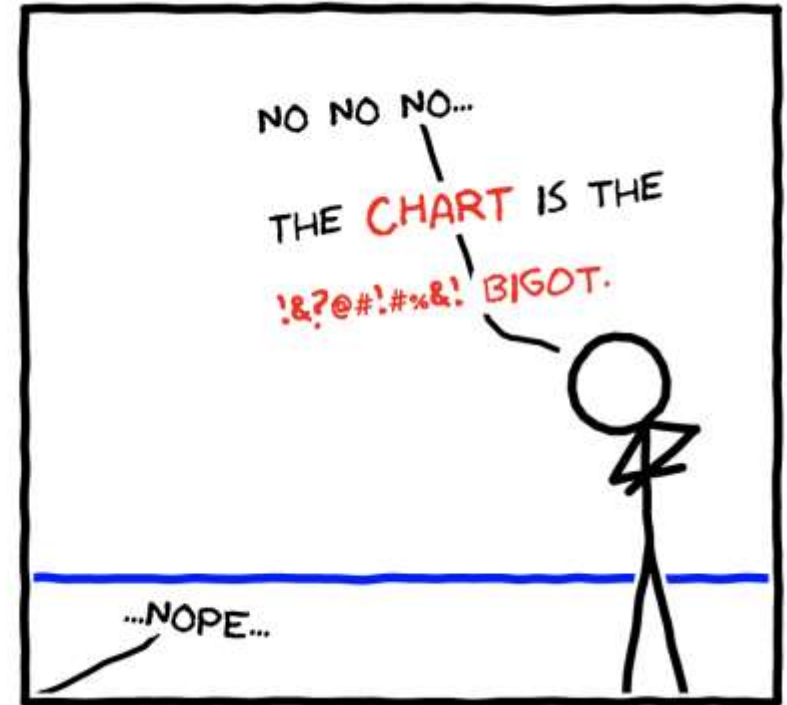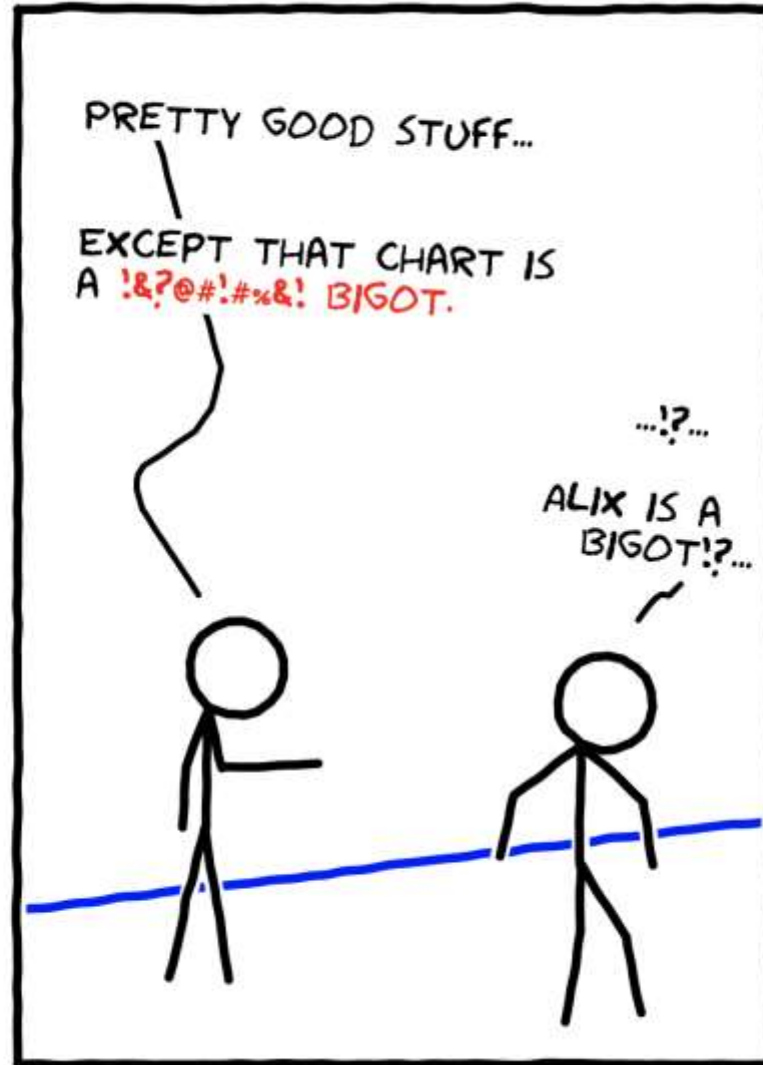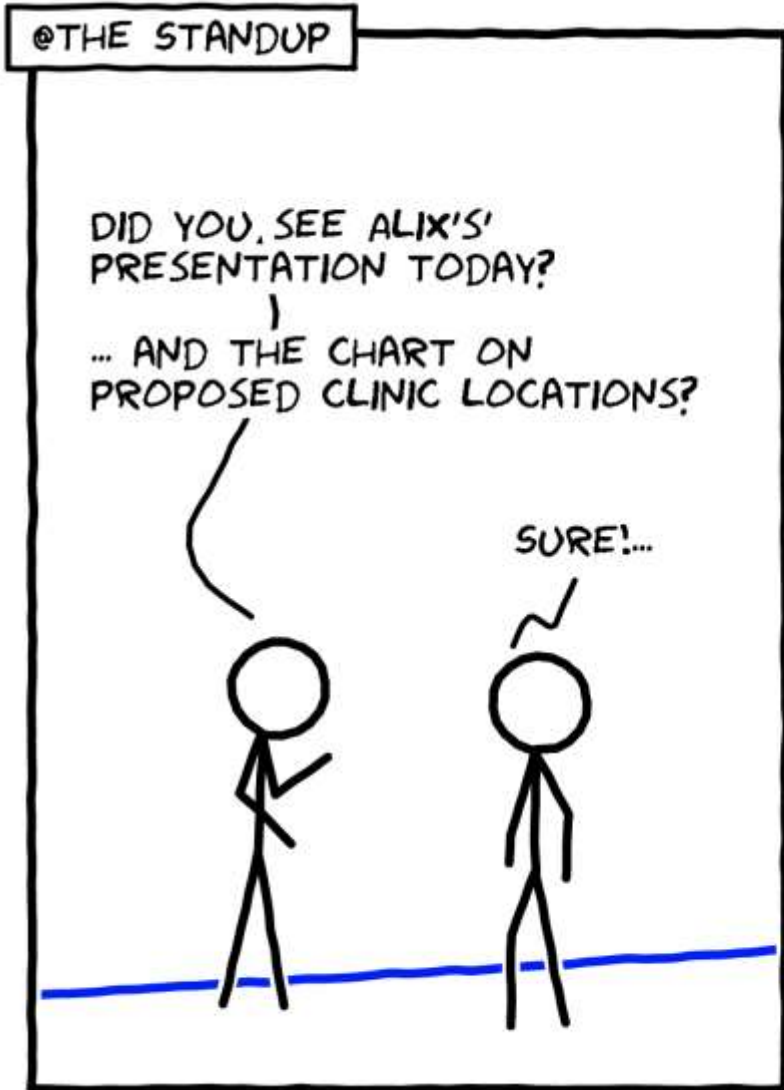
Agenda

Three lessons (reminders?) from an awkward moment

1) Own the impact – not the product.
2) Commit to a direction – tell a focused story.
3) Know the stakes – raise your game.

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Own the impact – not the product

"Receive without pride, let go without attachment."

Marcus Aurelius (Meditations, VIII.33)

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Formalize Tollgates in YOUR Process, including:
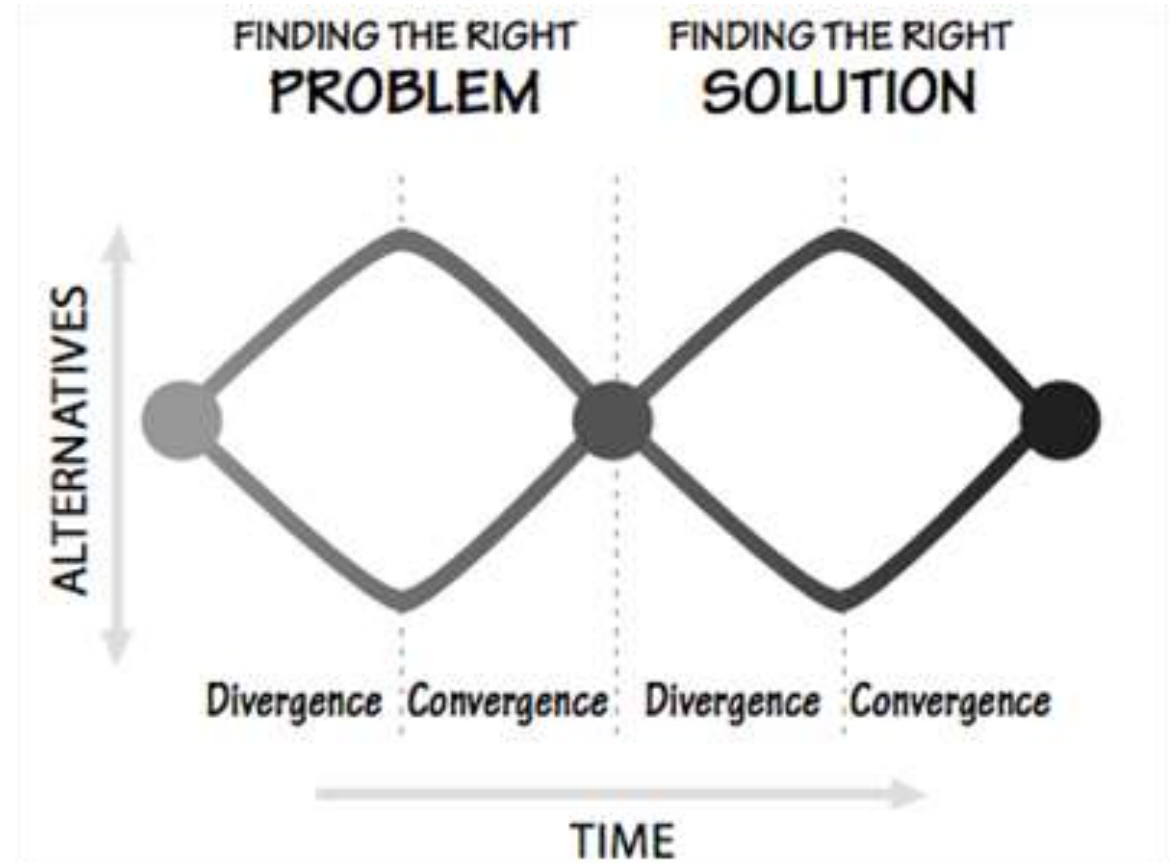
1. **Goal Setting**
   - Operational Decision Support
   - Policy Making
   - Informative/Education
   - Outreach/Persuasion

2. **Risk & Impact Review**

3. **Mechanics**
   - Chart types
   - Review/enforce data doneness
   - Destination(s) review

4. **User Testing**

(Interpretation of double-diamond process from Norman, 2013)

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User (Usability) Testing – Basic but Powerful

1. **What does this chart mean?**

2. **Are we looking good or bad?**

3. **Show me when things were the worst.**

4. **What does 'that' mean? How about that? And that?**
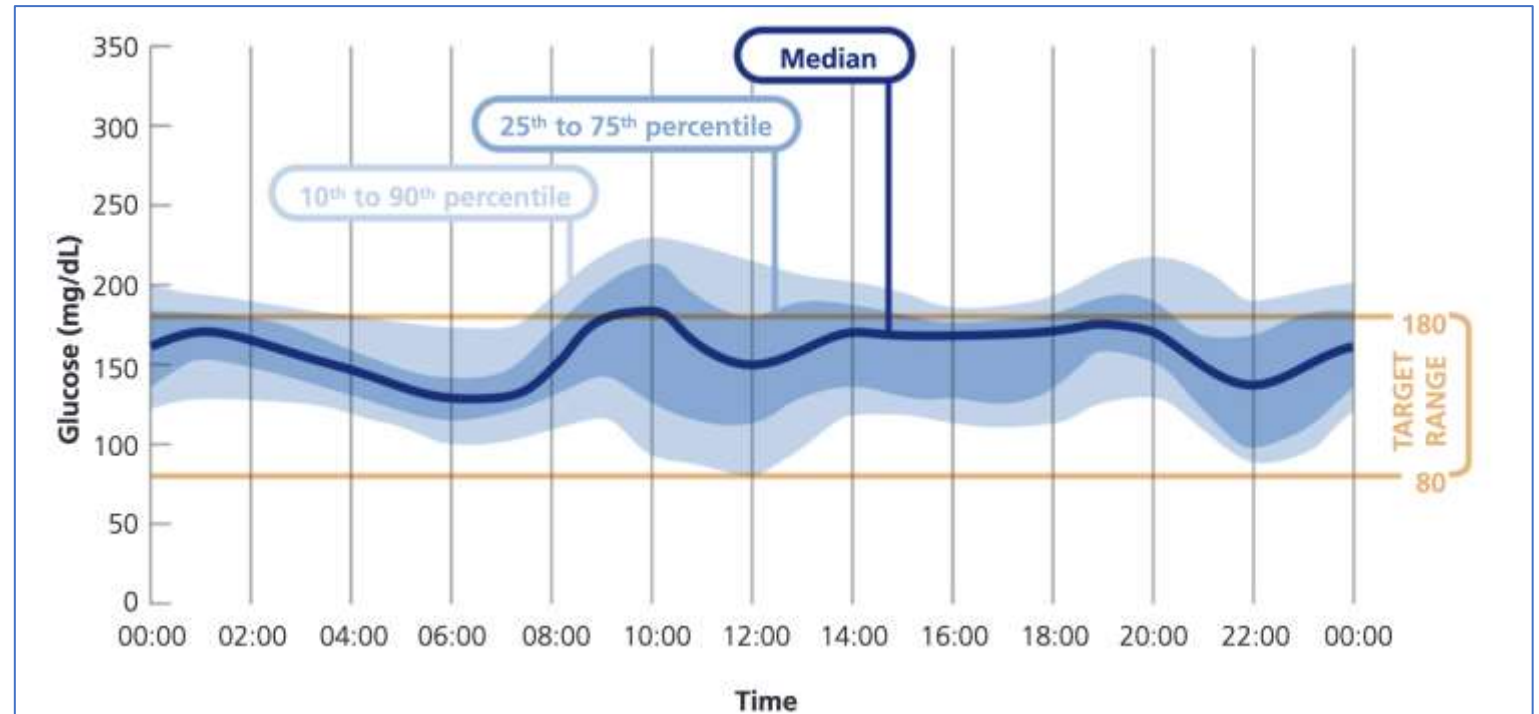
(Ambulatory Glucose Level Example from
Matthaei et al., 2014 – discussion inspired by 3iap, n.d.)

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Commit to a direction – tell a focused story

"The growing public mistrust in science has not been helped by efforts to produce visualizations devoid of bias."

Katherine Hepworth (2020, p. 1)

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Nail Down the Fundamentals of Persuasion

1. **Tell me what it means.**

2. **No seriously – just tell me.**

3. **Show the trend – is this normal? Getting worse?**

4. **Show a control – is this good or bad compared to something similar?**

5. **Connect the dots – why should I care?**
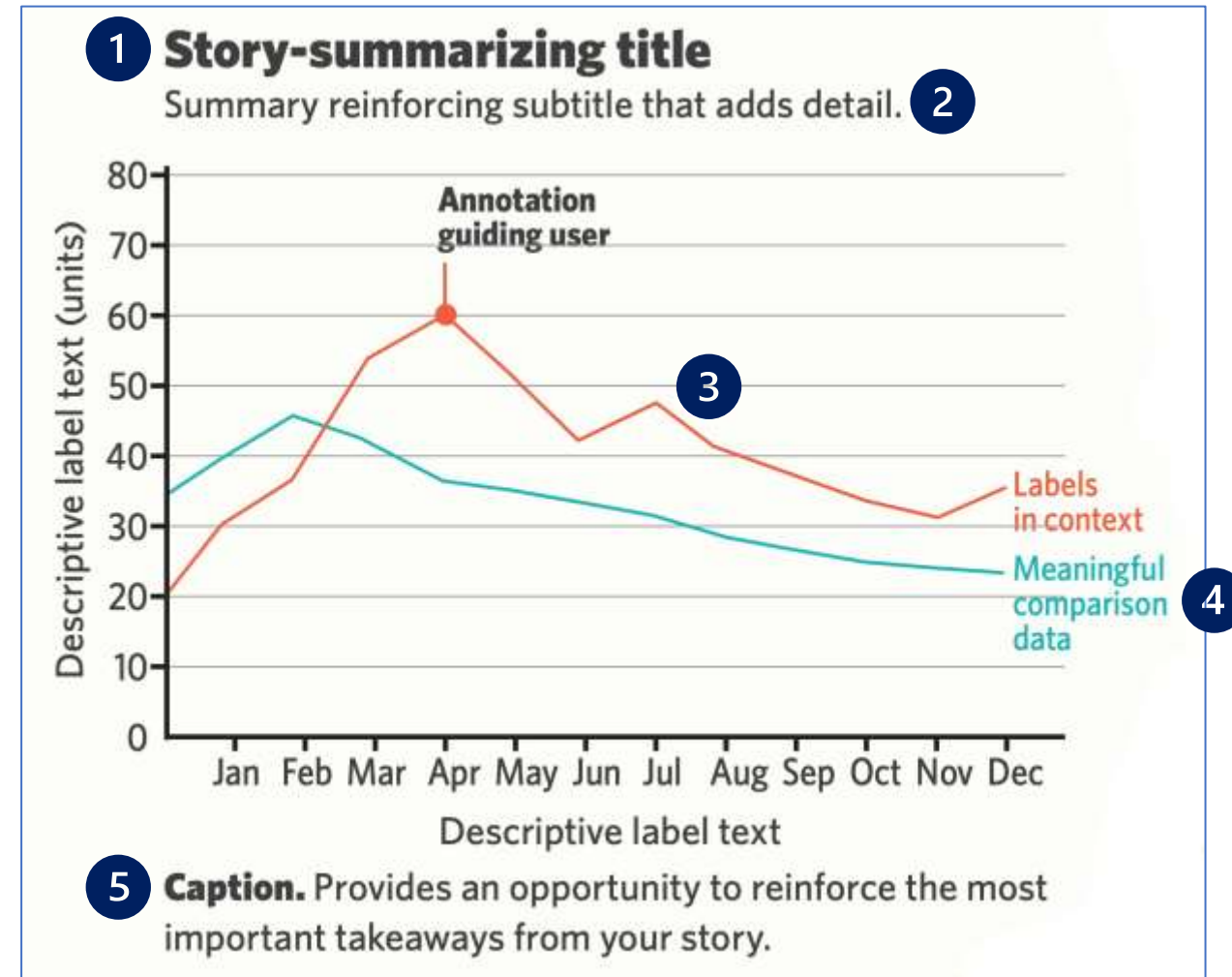
(Snippet from Hepworth, 2020, Poster.)

Complex Decisions: Bring Conflicts Together…

Percent Dead by COVID-19 in California by County - Worst 5 Only

(Quick exploratory plot of percent of deaths for a sanity-check.)

Excess Deaths in California, by County

The number of excess deaths varied across the state from March through July. Central Valley and Southern California counties tended to have higher rates of excess deaths.
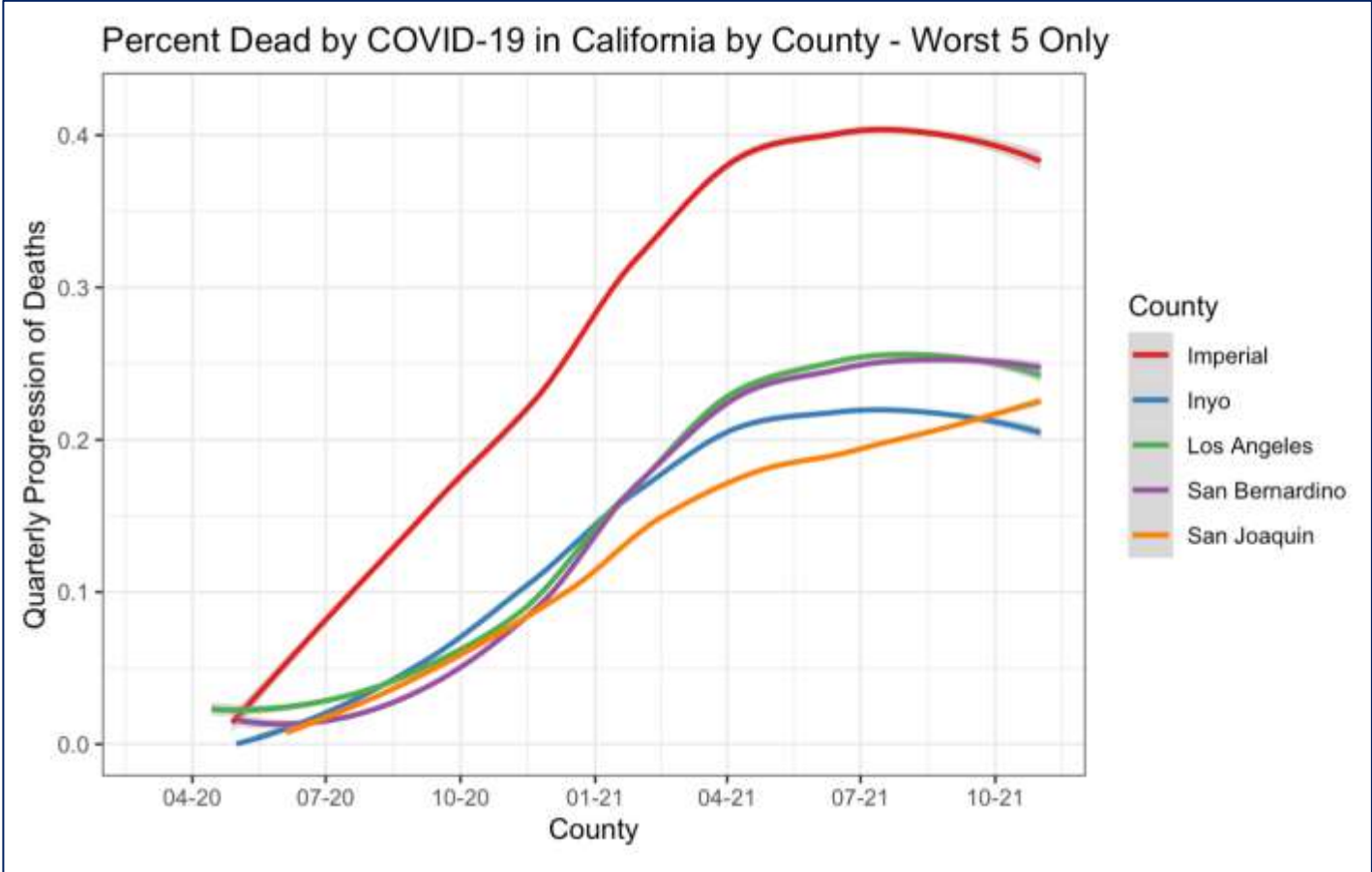
Excess Deaths Per 100,000 Residents
- None
- 0-9
- 10-19
- 20-29
- More than 30

Imperial

There were **555** deaths in **Imperial** County from March through July, compared to an average of **364** during the same months of the prior three years.

By the end of July, there were **210** confirmed COVID-19 deaths in Imperial County. That leaves **0** excess deaths, or **0** per 100,000 residents.

(Snippet from Reese, 2020.)

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One Layer == One Point … Build Up Layers Carefully
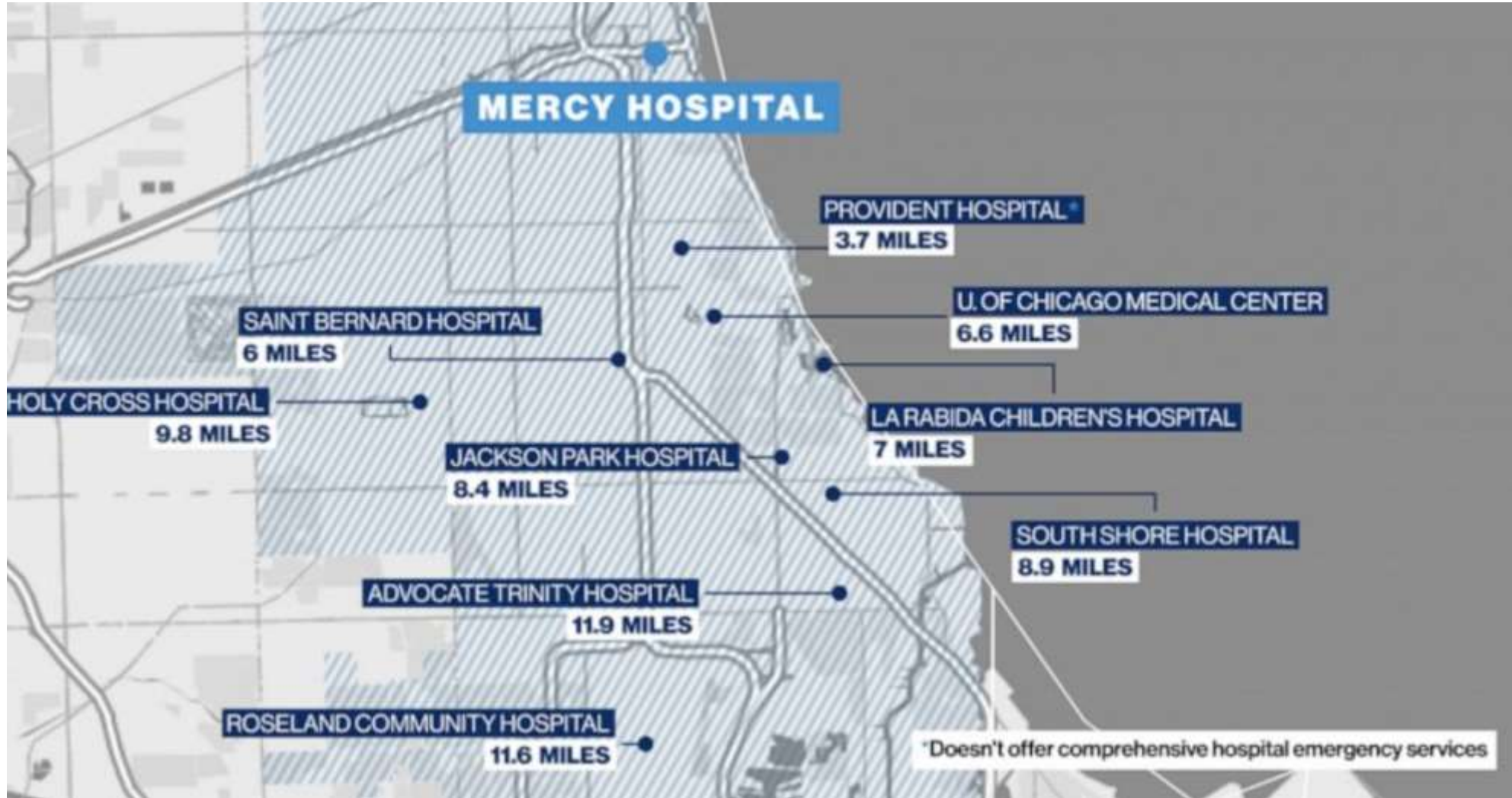
(Snippet from Schumaker, 2020.)

3 Know the stakes – raise your game.

"It does not do to leave a live dragon out of your calculations, if you live near him."

J.R.R. Tolkien (1937, The Hobbit, ch. 12)

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passw0rd
Rank: 500

trustno1
Rank: 26

****
Cracking
Your Favorite
Password
****

Time it takes to crack the 500 most
common passwords by online guessing.
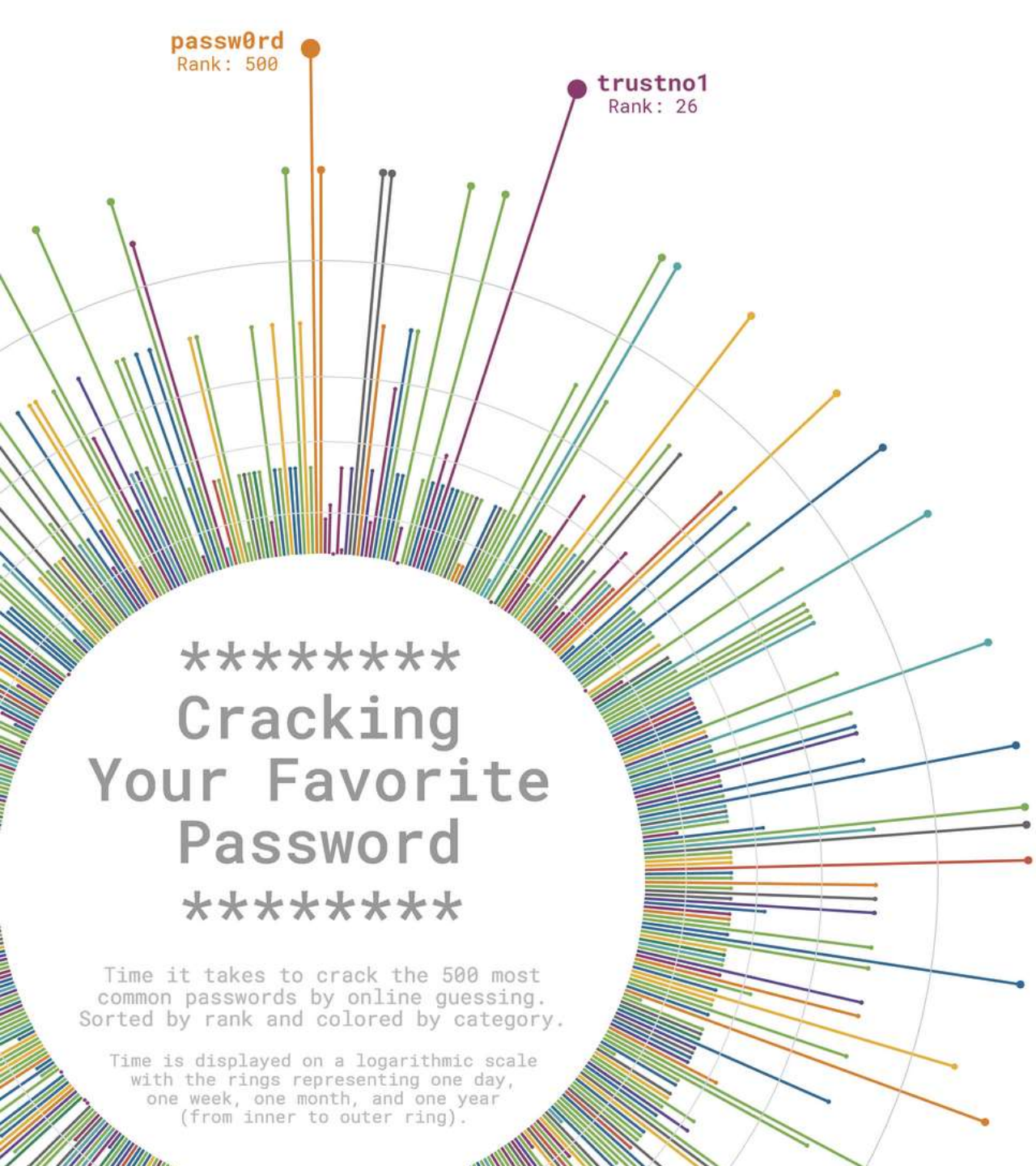Sorted by rank and colored by category.

Time is displayed on a logarithmic scale
with the rings representing one day,
one week, one month, and one year
(from inner to outer ring).

Raise your game in terms of process first…

… Then on display-complexity second (which oftentimes means never).

<- Brilliant work you don't need (?) from Scherer, n.d.

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Implementing Programmatically
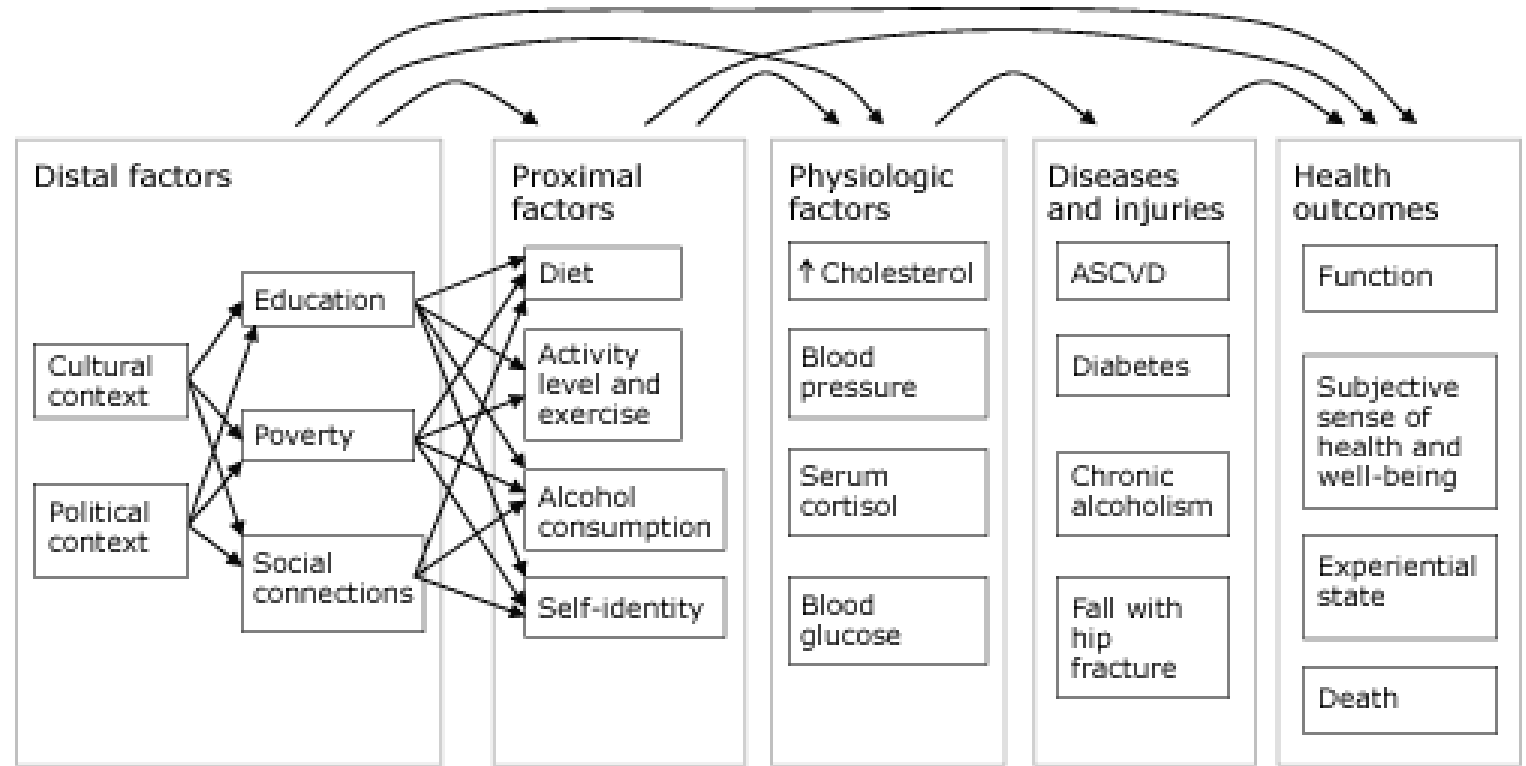
```
ggplot(CaliCovidDataF2) +
  geom_smooth(aes(x = date, y = percent_dead, group = area, color = area)) +
  scale_x_date(date_labels = "%m-%y",
               date_breaks = "3 months",
               limits = as.Date(c('2020-03-01', '2021-11-01'))) +
  ggtitle("Percent Dead by COVID-19 in California by County - Worst 5 Only") +
  labs(x = "County",
       y = "Quarterly Progression of Deaths",
       color = "County") +
  scale_color_brewer(palette = "Set1") +
  ylim(0, .42) +
  theme_bw()
```

This line controls most of the visualization

Styles and starting data structures can be standardized

Templates can be filled by automated pipelines and ML

Percent Dead by COVID-19 in California by County - Worst 5 Only

County
- Imperial
- Inyo
- Los Angeles
- San Bernardino
- San Joaquin
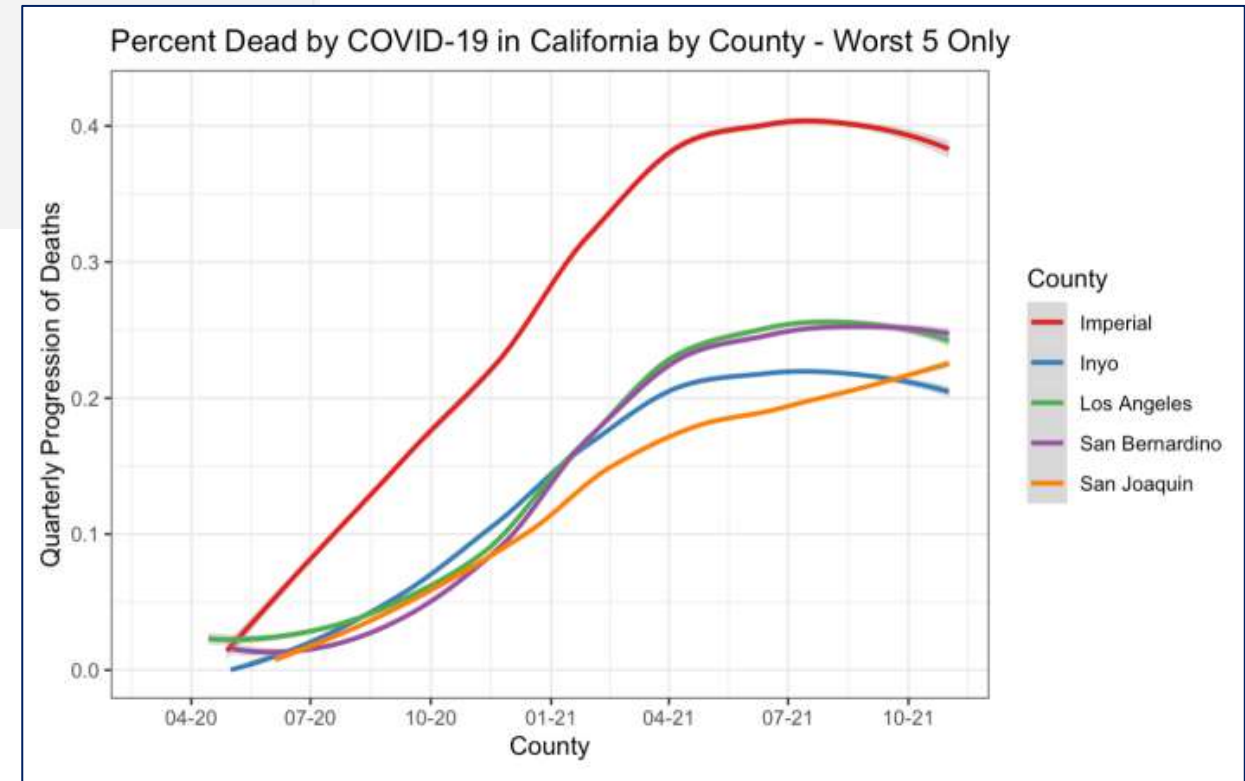
Measuring Outcomes

- **How will you measure the success of the visualization?**

- **Can you map your measures to the metrics of the domain impacted?**

- **How will your measures change your process?**

Distal factors	Proximal factors	Physiologic factors	Diseases and injuries	Health outcomes
Cultural context	Education	↑ Cholesterol	ASCVD	Function
Political context	Poverty	Blood pressure	Diabetes	Subjective sense of health and well-being
	Diet	Serum cortisol	Chronic alcoholism	Experiential state
	Activity level and exercise	Blood glucose	Fall with hip fracture	Death
	Alcohol consumption			
	Self-identity			
	Social connections			

(CDC - Parrish, 2010)

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Questions or Feedback?

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