



# **Covid-19 sledilnik in podatkovna odličnost**

**Dr. Aleks Jakulin**

**Madrid, 8. marec 2020**



# New York, 9. april 2020



**Andrew Cuomo**  @NYGovCuomo · Mar 5

We are taking every action to make sure NYers are safe.

But undue anxiety and fear is a threat in itself. Let's fight fear with facts:

- 80% of the people who get the **#coronavirus** will self-resolve
- Some context: There are thousands of people in the hospital today with the flu

105

108

334



**Donald J. Trump**  @realDonaldTrump · Mar 9

So last year 37,000 Americans died from the common Flu. It averages between 27,000 and 70,000 per year. Nothing is shut down, life & the economy go on. At this moment there are 546 confirmed cases of CoronaVirus, with 22 deaths. Think about that!

83.3K

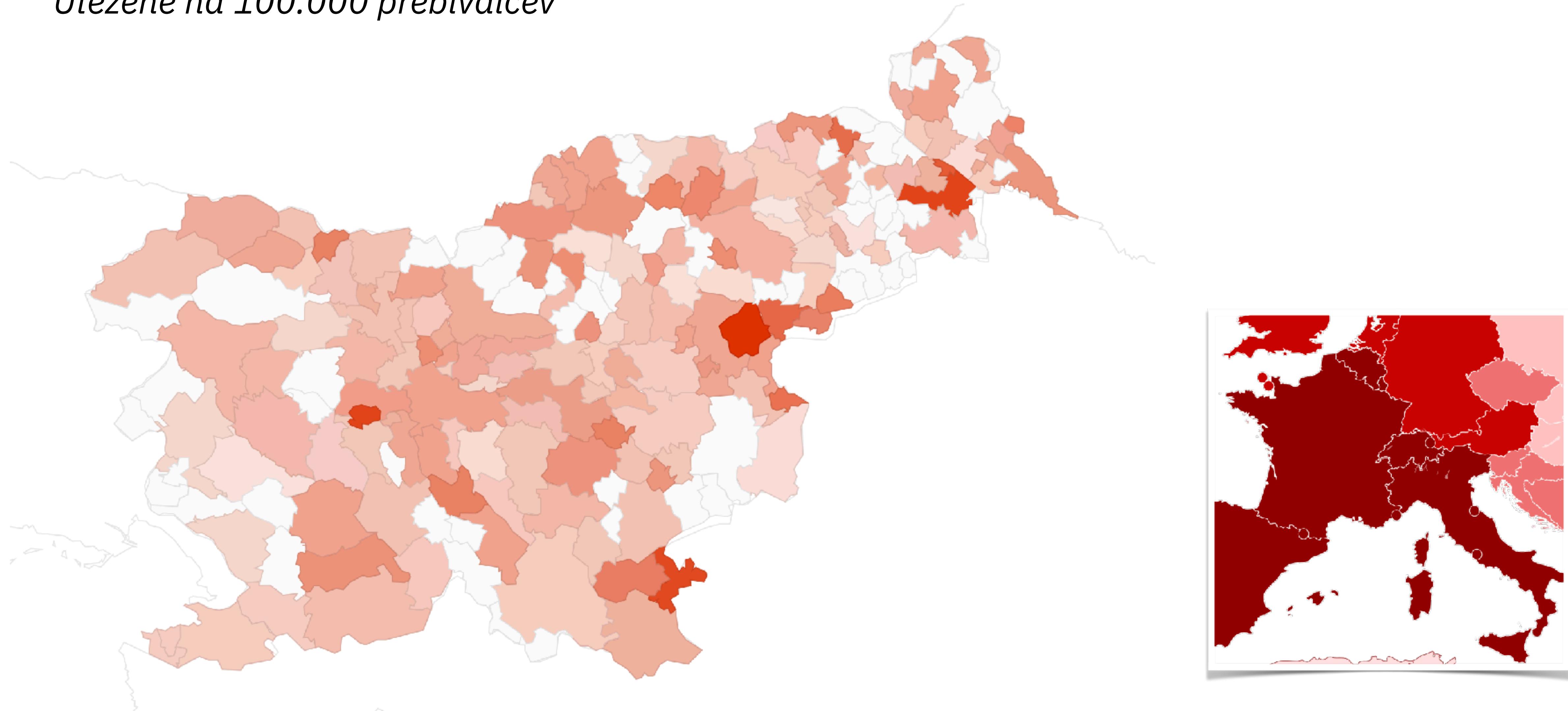
89.3K

294.7K



# Zemljevid potrjeno okuženih po občinah

*Utežene na 100.000 prebivalcev*



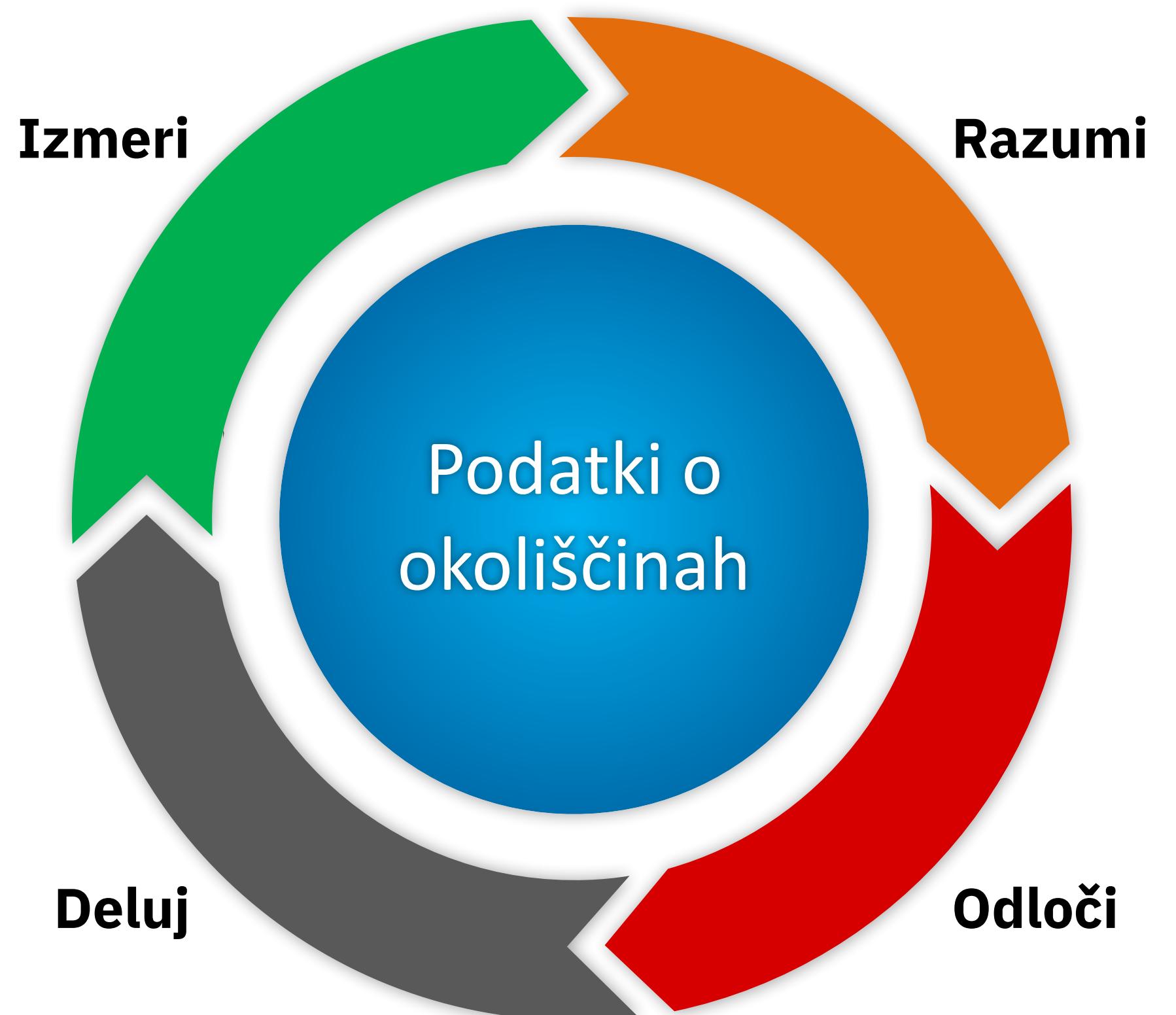
# Podatkovna odličnost z zanko IROD

*Utežene na 100.000 prebivalcev*

- **HITROST:** Kako hitro se vrtimo?
- **ŠIRINA:** Katera znanja imamo?
- **GLOBINA:** Koliko podatkov imamo?



Col. John Boyd , OODA Loop



# Papirnata znanost

1600

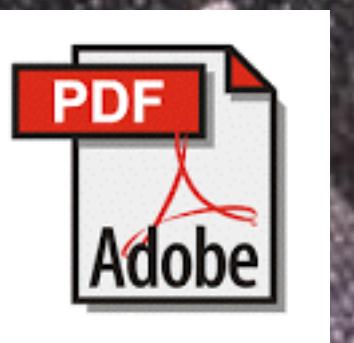


Cikel 1 leto

# Digitalna znanost

2000

*Objave*



*Modeli*



*Podatki*



Cikel 24 ur

# 2020: Hitra interaktivna znanost

**COVID-19 Slovenia Tracking** Podatki

Format Data Tools Add-ons Help Last ...

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LAB testov	LAB t.dan	LAB pozitivni	te
38	59	100	143
143	178	194	211
194	16	16	17
211	17	17	54
265	54	48	48
313	48		

tests.perfc tests.performed

38 Luka Renko 9:27 PM Apr 1

59 podatki pred tem dnevi tedenski osnovi, zato jih

100

143

178

194

211

265

313

Anonymous A

Anonymous A

Anonymous A

Anonymous B

Anonymous B

Anonymous C

Anonymous C

**COVID-19 SLEDILNIK**

Objave

Hospitalizirani	V intenzivni enoti	Umrli	Ozdraveli
1344	86	25	38
+9 (+0.7%)	-1 (-1.1%)	+3 (+4.1%)	+12 (+46.2%)
20. april	21. april	20. april	16. april

Širjenje COVID-19 v Sloveniji

Modeli

- Travis CI committed 2 days ago ✓
- lukarenko committed 2 days ago ✓
- added icu.csv ...
- lukarenko committed 2 days ago ✘
- Merge pull request #8 from jurijabajzelj/gitignore\_remove\_output\_csv\_e... Verified
- jurijabajzelj committed 2 days ago ✓
- updated gitignore
- jurijabajzelj committed 2 days ago
- Merge pull request #7 from jurijabajzelj/fetching\_ondemand ... Verified
- jurijabajzelj committed 2 days ago ✓

# Široka interaktivna skupnost

- 20 aktivnih sodelavcev
- 50 opazovalcev
- vsi prostovoljci
- vse vrste poklicev
- nismo se še srečali v živo



**Cikel: 1 mesec**

moškimi v vseh starostnih skupinah

(stran 2)

[https://www.epicentro.iss.it/coronavirus/bollettino/Report-COVID-2019\\_30\\_marzo\\_eng.pdf](https://www.epicentro.iss.it/coronavirus/bollettino/Report-COVID-2019_30_marzo_eng.pdf)

Je vzrok genetske narave, socialnih dejavnikov ali obojega?

Glede na to, da koronavirus povzroča respiratorno bolezni, morda kajenje le ni nepomembno.

<https://www.statista.com/statistics/501615/italy-smokers-by-age-and-gender/>

**Statista**

**Number of smokers by age and gender in Italy 2018 | Statista**

In 2018, 1.23 million Italian men and 942 thousand women aged 45 to 54 years were smokers. (270 kB) ▾

Number of individuals who smoke in Italy in 2018, by age and gender (in 1,000s)

Yesterday

**Miha Kadunc** Yesterday at 2:24 AM  
Zanimiva razlaga 'overshoot' efekta pri herd immunity pristopu - če prekuženost dosežeš sredi epidemije z  $R>1$ , je lahko število okuženih bistveno večje od teoretičnega praga  
[https://twitter.com/ct\\_bergstrom/status/125200936284900964](https://twitter.com/ct_bergstrom/status/125200936284900964)

**Carl T. Bergstrom**  
@CT\_Bergstrom  
17. In fact, for an SIR or SEIR model, you reach herd immunity not when the epidemic is nearly over, but rather **precisely** at the epidemic peak. This makes sense. Before the herd immunity threshold, each case creates  $>1$  new cases, and the epidemic curve keeps increasing.  
<https://pbs.twimg.com/media/EWAH3X9U0AAEzNH.jpg>

Twitter | Yesterday at 1:01 AM (52 kB) ▾

# Globina podatkov bi pomagala

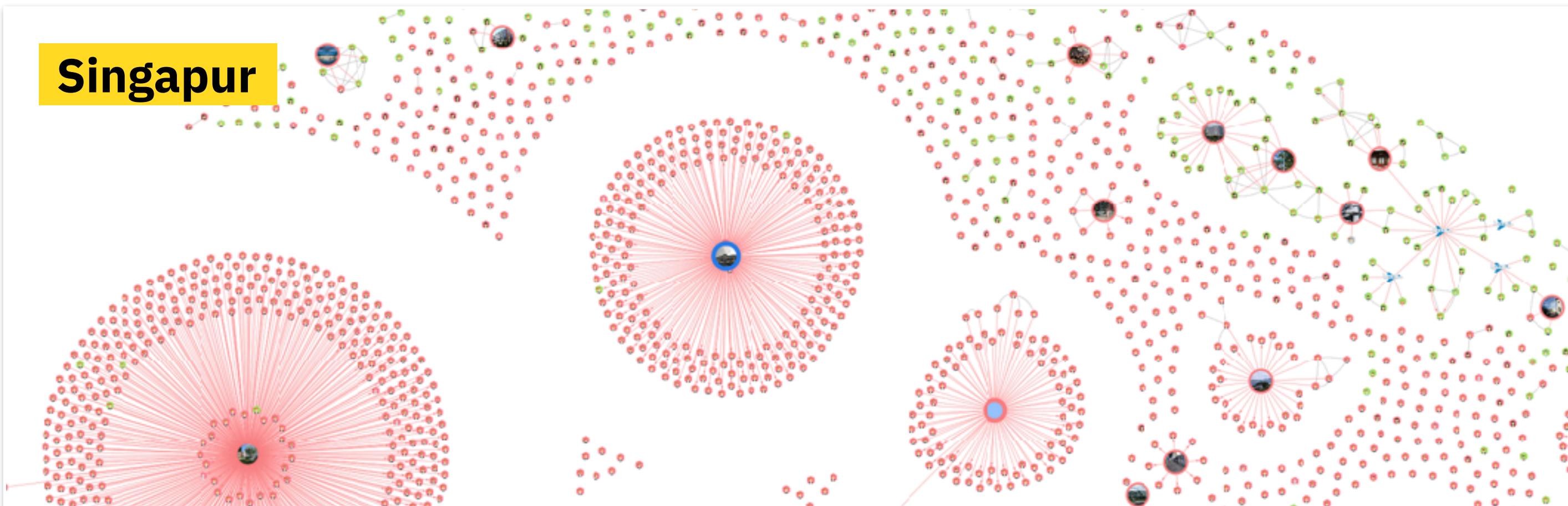
CASE ID	PATIENT	AGE	GENDER	NATIONALITY	STATUS	INFECTION SOURCE	COUNTRY OF ORIGIN	SYMPOTOMATIC TO CONFIRMATION	DAYS TO RECOVER	SYMPOTOMATIC
398	Taiwan	20	Male	Taiwanese	In hospital	Imported case	Palau	5	-	13th, Apr 20
397	男性	20	Male	Taiwanese	In hospital	Imported case	Palau	-	-	-
396	男性	20	Male	Taiwanese	In hospital	Imported case	Palau	6	-	12th, Apr 20
395	女性	20	Female	Taiwanese	In hospital	Imported case	United states	11	-	4th, Apr 20
394	女性	60	Female	Taiwanese	In hospital	Imported case	United states	9	-	6th, Apr 20
393	女性	60	Female	Taiwanese	In hospital	Imported case	United states	15	-	29th, Mar 20
392	男性	60	Male	Taiwanese	In hospital	Imported case	Unclear origin	13	-	31st, Mar 20
391	女性	60	Female	Taiwanese	In hospital	Imported case	Unclear origin	13	-	31st, Mar 20
390	男性	50	Male	Taiwanese	In hospital	Imported case	Unclear origin	9	-	4th, Apr 20
389	女性	50	Female	Taiwanese	In hospital	Imported case	Unclear origin	13	-	30th, Mar 20

INFORMATION DISCLOSED	HONG SINGAPORE	SOUTH KONG	KOREA	U.K.
Age and gender	✓	✓	✓	✗
Travel history	✓	✓	✓	✓
Work address	✓	✗	✓	✗
Home address	✓	✓	✓	✗
Links to previous cases	✓	✓	✗	✗
Nationality if case is imported	✓	✗	✓	✗
Treatment location	✓	✓	✓	✓
Places visited prior	✓	✗	✓	✗
Identified contact persons	✗	✓	✓	✗
How case was confirmed	✗	✗	✓	✗
Geographical breakdown of patients	✗	✓	✗	✗

**For Your Information**  
Types of personal information governments have released about coronavirus patients.

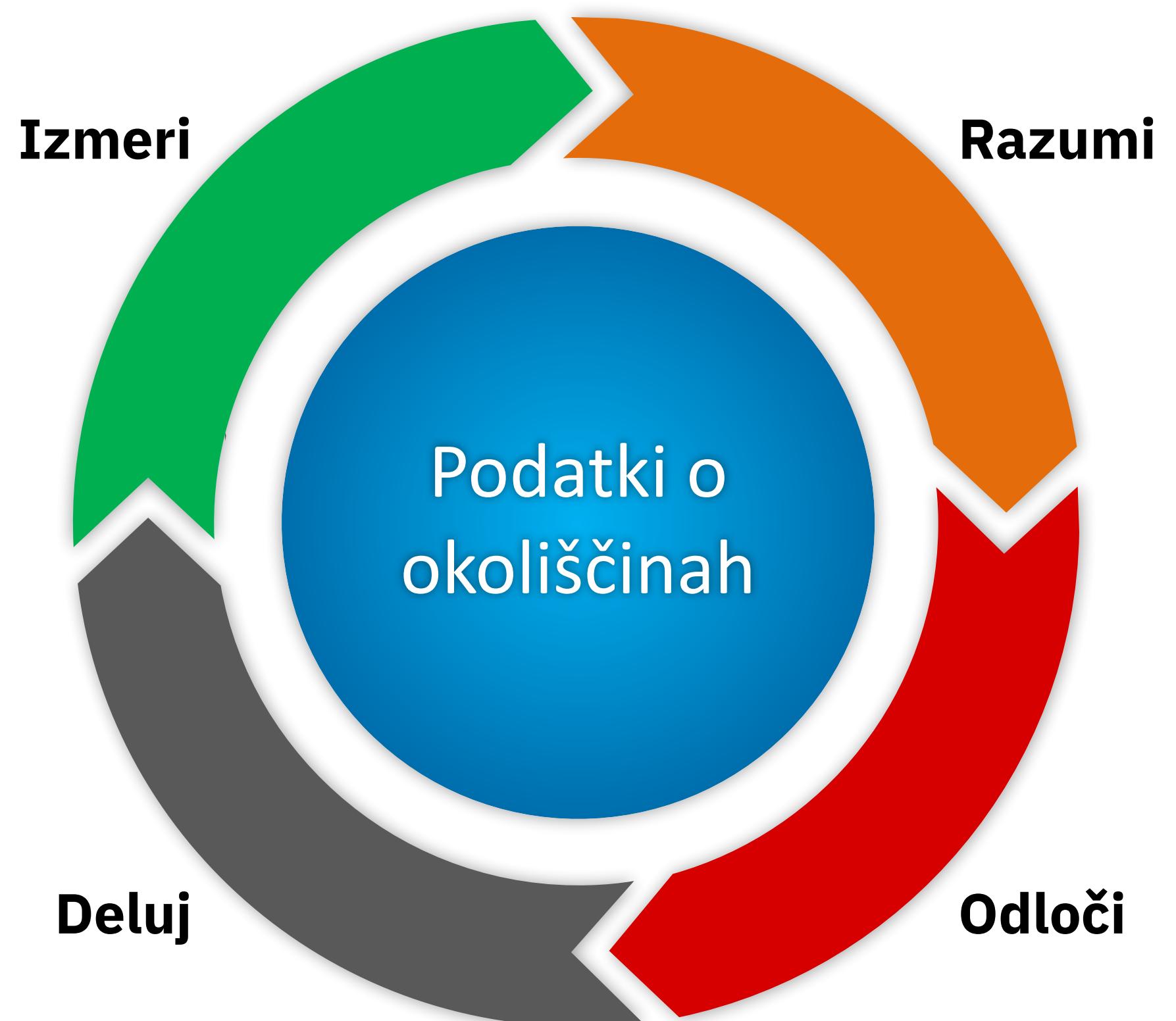
Note: New York identified the first patient in detail, but subsequent announcements just included geographic breakdown of patients.  
Source: the governments



# Naslednji koraki

*...za večjo podatkovno odličnost z IROD*

- **Integracija 1) protokolov testiranja 2) protokolov sproščanja ukrepov v Sledilnik**
- Povečajmo **hitrost** tehnologije, **globino** podatkov in **širino** skupnosti Sledilnika.
- Boljše povežimo **merjenje** in zajem podatkov, da bo globje in karseda avtomatsko.
- Naprej razvijamo vizualizacijske in interakcijske tehnike, ki olajšajo **razumevanje** podatkov.
- Integrirajmo statistične postopke in napovedne modele, ki nam olajšajo **odločanje**, tudi z večjim upoštevanjem ekonomskih faktorjev.
- Povežimo Sledilnik z odločevalci, državljanji, mediji in institucijami, da bodo podatki v pomoč pri **delovanju**.
- Uporabimo Sledilnik tudi za kaj drugega kot Covid-19.



# Kako naprej?

*Gradnja skupnosti za podatkovno odličnost*

- Zavzemamo se za podatkovno odličnost
- Zavzemamo se za pomembnost podatkovnega razmišljanja
- Povezujemo institucije, ki uporabljajo podatke
- Nudimo lahko infrastrukturo in orodja za podatke
- **Slovenija je lahko v tem vodilna na svetu**