



Security and Privacy in Handling Big Data in Health

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Three Dimensions

- Security
- Privacy
- Ethics



POLAR, POLAR-GP, Research



- Primary Health Network Based (7 PHNs)
- 1300 contributing practices.
- About 11 million individual patients – 42% of the population.
- Longitudinal data
- And that's just the beginning...



Active Patient Count
39,577

RACGP Active **Patient Status**

Select a Location_Name

Select Patients in Phase 1a
179

Select Patients in Phase 1b
7,753

Select Patients in Phase 2a
9,168

Select Patients in Phase 2b
16,814

Select Patients in Phase 3
5,190

Select Vaccination Status
Non **Part** **Full**

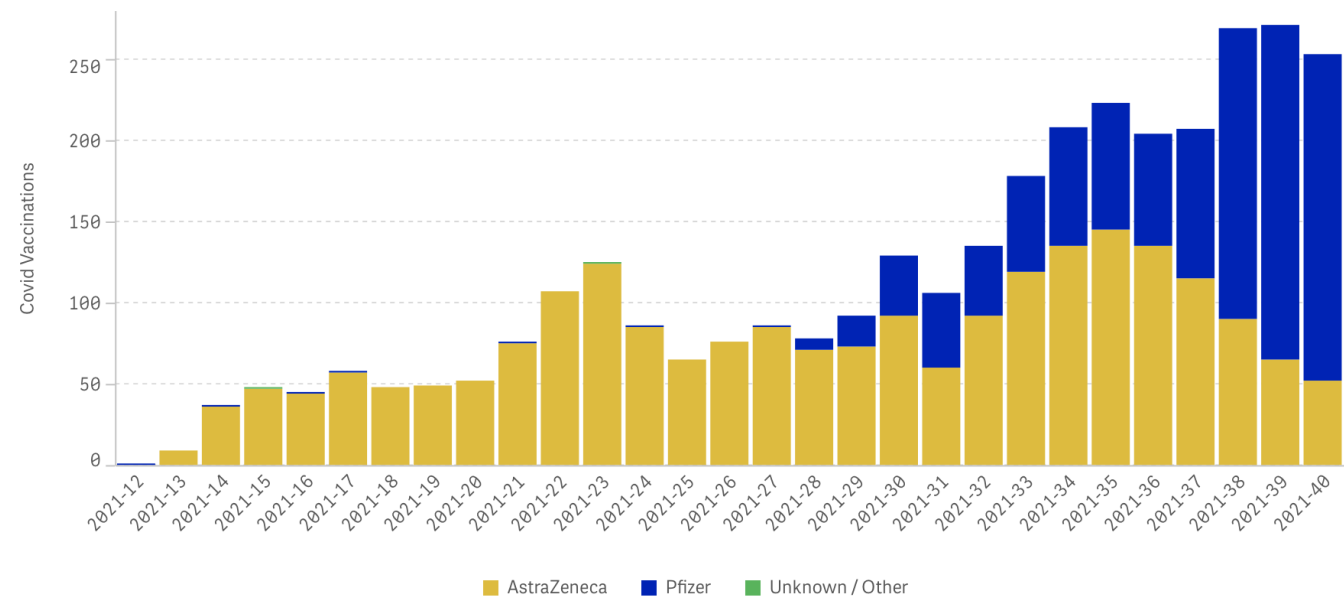
Select an Age Cohort
All **<16** **16-39**
40-49 **50-59** **60+**

- Age Base...
- Phase Tra...
- Vaccine ...
- Patient P...
- Metrics**
- Geography
- Phase Cri...

- Vaccinations By Week**
- Service Comparison

COVID Vaccinations by Week

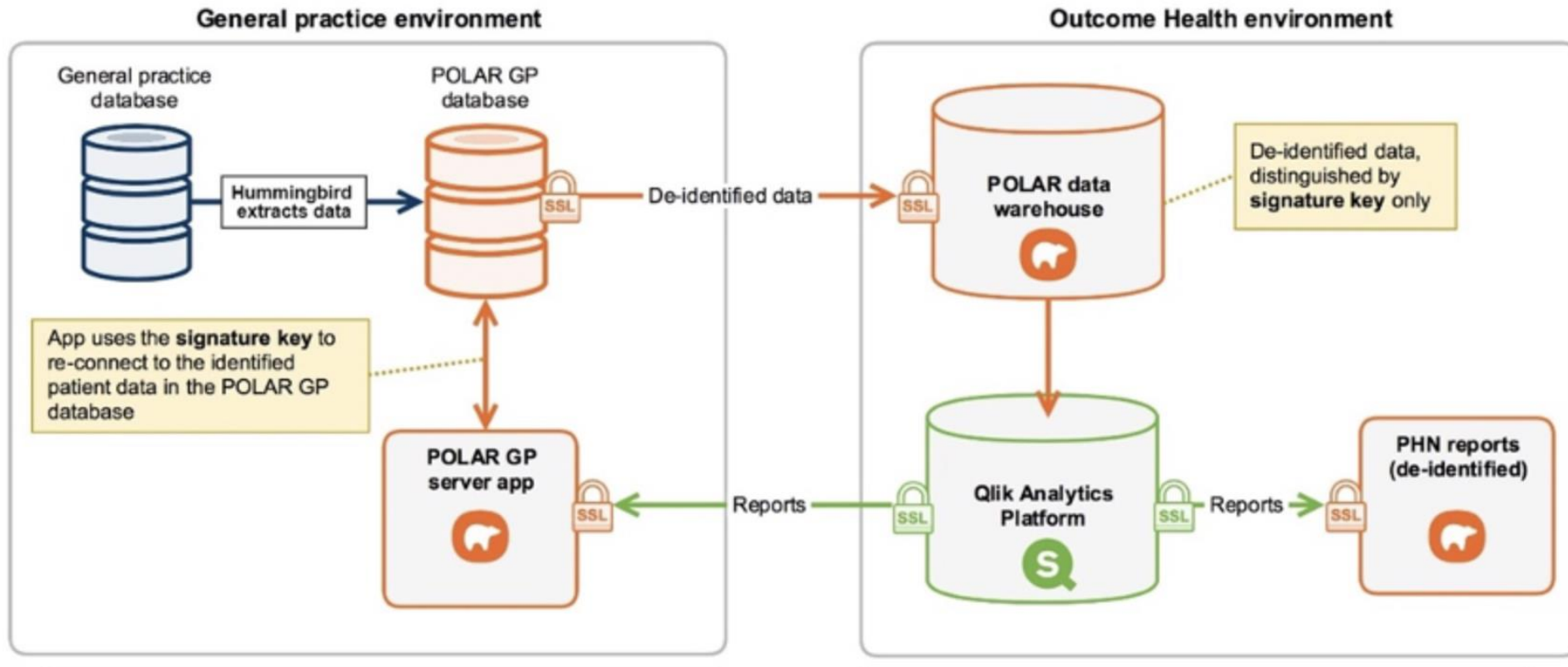
Note: These are single dose counts



Week Date Calendar

Week Dates	Date Range
2021-01	01/01/2021 to 03/01/
2021-02	04/01/2021 to 10/01/
2021-03	11/01/2021 to 17/01/
2021-04	18/01/2021 to 24/01/
2021-05	25/01/2021 to 31/01/
2021-06	01/02/2021 to 07/02/
2021-07	08/02/2021 to 14/02/
2021-08	15/02/2021 to 21/02/
2021-09	22/02/2021 to 28/02/
2021-10	01/03/2021 to 07/03/
2021-11	08/03/2021 to 14/03/
2021-12	15/03/2021 to 21/03/
2021-13	22/03/2021 to 28/03/
2021-14	29/03/2021 to 04/04/
2021-15	05/04/2021 to 11/04/
2021-16	12/04/2021 to 18/04/
2021-17	19/04/2021 to 25/04/
2021-18	26/04/2021 to 02/05/

Security



Security



- No raw identifiable data leaves the practice

For any given patient record ORCA creates three Hash keys based upon a combination of identifiable data.

The HASH keys created include:

1. Key 1581 or SLK581:
 - a. Family name (the first 3 characters)
 - b. Given name (the 4th and 5th characters)
 - c. Date of birth by day, month and four-digit year
 - d. Sex (Male = 1 or Female = 2)
2. Key 2989 or the Individual Health Identifier (IHI)
3. Key 3581:
 - a. Medicare Card numbers 5-9
 - b. Date of birth by day, month and four-digit year
 - c. Sex (Male = 1 or Female = 2)

Privacy

- Proactive and Preventive
- Privacy as default
- Privacy embedded into design
- End-to-end security
- Visibility and Transparency

- Validated externally



Ethics



- Data Hierarchy
 - Clinical Care
 - Clinical Governance
 - Population Health
 - Research and Evaluation
 - Policy and Strategy
 - Administration and Logistics

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Questions



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