
AWS
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DEI208

Engaging priority communities in population health campaigns

Heather M. Nelson (she/her)
Health Equity Leader
Deloitte Consulting LLP

Nate Bechtel (he/him)
Head of Healthcare & Life Sciences,
Communication Developer Services, AWS

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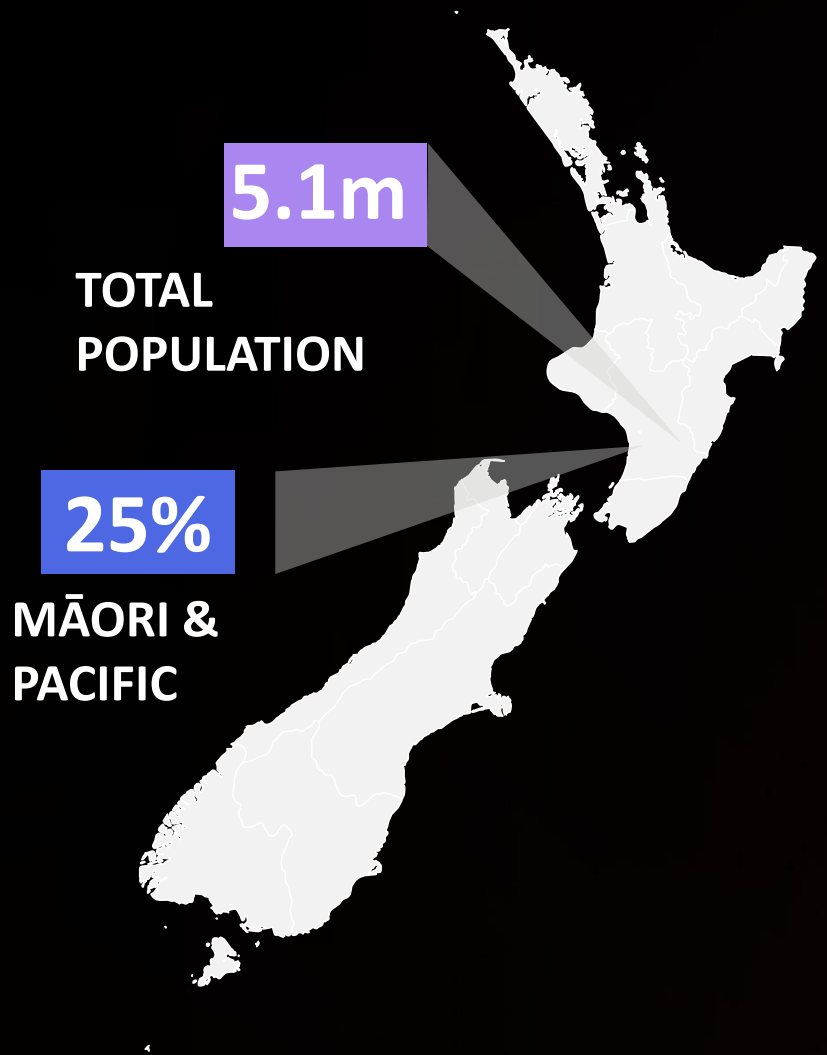
Agenda

- Consumer Population Identification & Registration (CPIR) Service: A technology-enabled approach to a population health challenge
- The principles of equity-centered design
- CPIR solution and demo
- CPIR’s technology building blocks: a closer look at AWS Communication Developer Services

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Health inequities in New Zealand



AMENABLE MORTALITY

Māori are **2.5x** and Pacific **2.2x** more likely to die early from preventable deaths.

LIFE EXPECTANCY

Māori live **7 years less** and Pacific **5 years less** than non-Maori non-Pacific.

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CPIR: A case study for using technology to improve health equity

The challenge for Health NZ:

Raise vaccination rates in priority segments of the population – particularly young and middle-aged Māori and Pacific people



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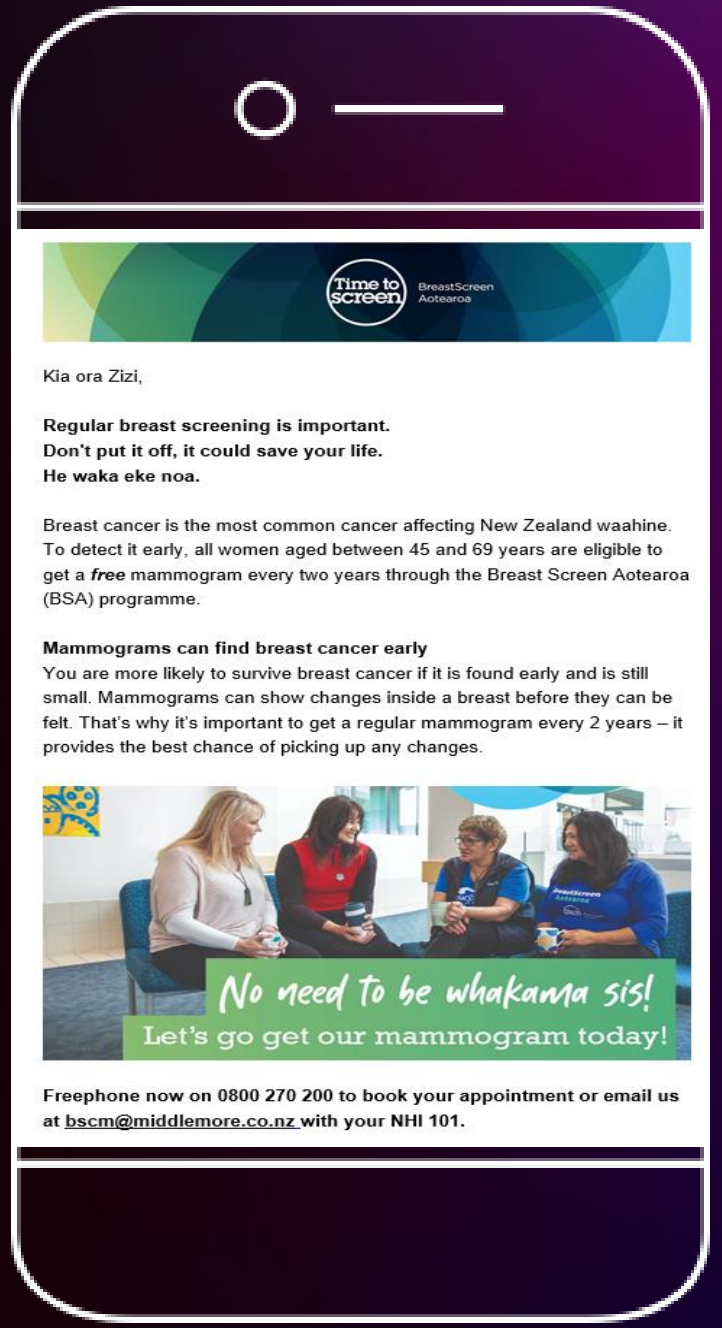
A snapshot of CPIR's success

Total population

>3M individuals (over 70% of the NZ population) contacted via digital channels

2.5M automated 1st and 2nd booster reminders, **with 31% better uptake for those contacted**

804k individuals contacted in flu campaigns



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A snapshot of CPIR's success

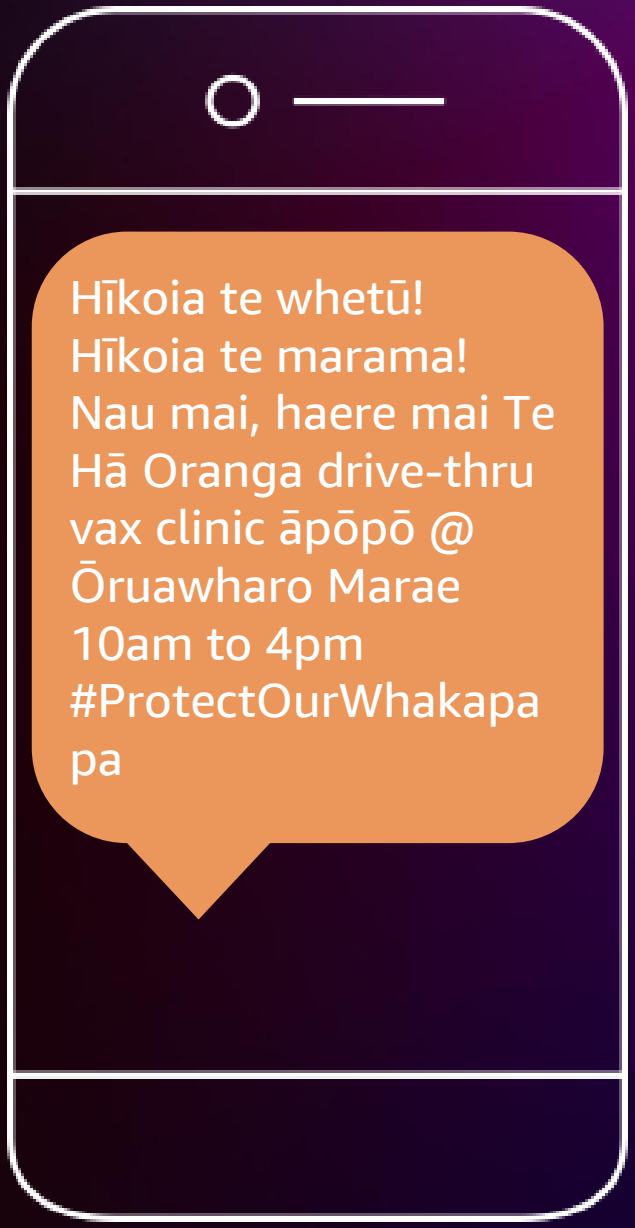
Priority communities

>1,200 locally tailored, personalized campaigns

600,000 individuals from priority populations contacted

116k Māori and Pacific included in equity-specific flu campaigns

41% increase in uptake of flu vaccines in the Māori and Pacific communities



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The diverse team behind the solution



Roger Lee
Engagement Lead



Jonathan Munden
Product Manager



Isidora Labra Odde
Functional Lead



Anjali Singh
Delivery Lead



Zizi Jasim
Sector Engagement Lead



Jessica Fu
Data Engineering Lead



Mark Goatley
AWS Architect



Karthik Natarajan
AWS Tech Lead



Emma Li
Front End Engineer



Chris Tofts
QA Engineer



Andrew Ray
AWS Engineer



Rovelyn Bancolo
Data Engineer



Raymund Villegas
AWS Engineer

In collaboration with multidisciplinary teams across the NZ health sector

National Digital Services

National Public Health Service

Local health providers across the country

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Health systems addressing systematic bias

WHAT ARE THE DRIVERS FOR ORGANIZATIONS TO ADDRESS SYSTEMATIC BIAS / IMPROVE HEALTH EQUITY?



Mission



Outcomes, quality, safety, and cost



Patient trust

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The digital health divide: Using equity-centered design to narrow the gap

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1. Partner with community organizations

Constructive feedback from community organizations can make digital engagement more effective



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2. Incorporate diverse consumer perspectives into the design process

If an algorithm isn’t equity-centered, it could automate systemic bias into the system



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3. Choose channels that reach diverse populations

Utilize a wide range of communication channels and incorporate culturally sensitive language



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4. Prioritize cultural humility

It’s important for patients to receive care from clinicians who look like them, talk like them, and/or have shared life experiences

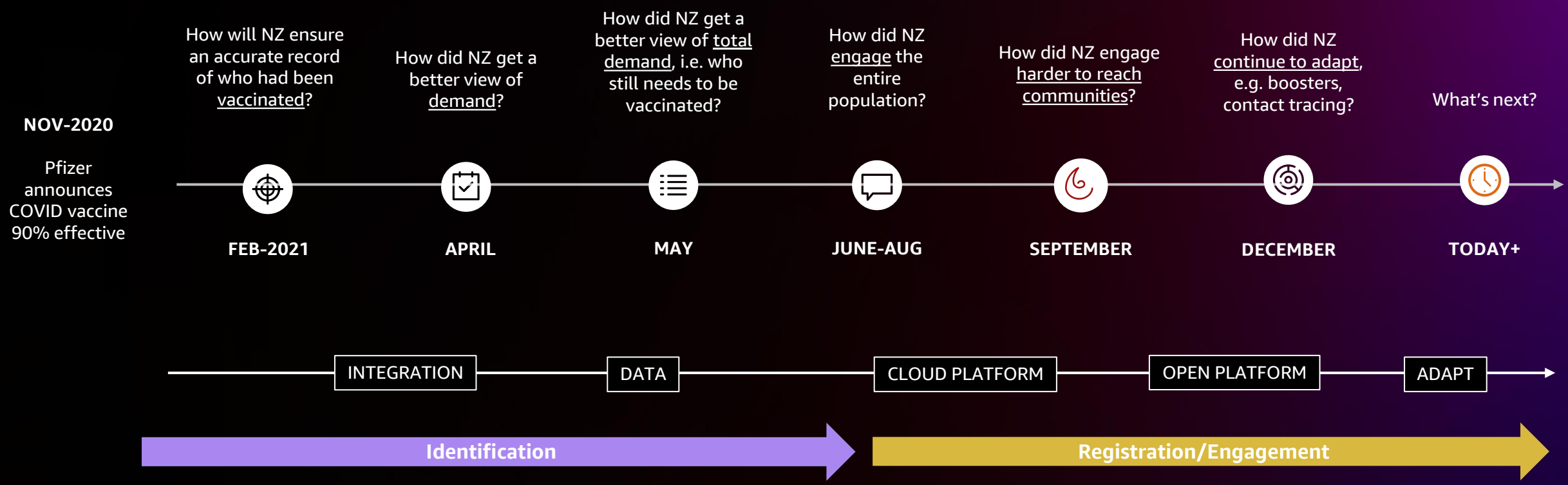


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The technology building blocks for CPIR's equity-centered design

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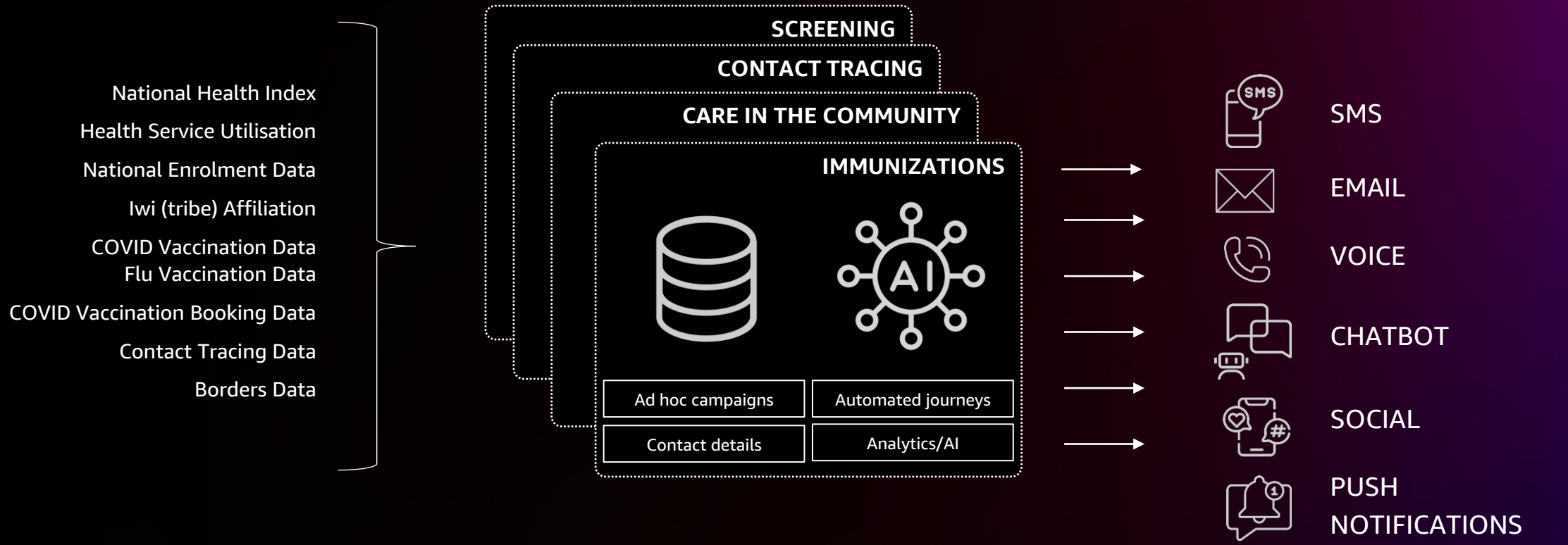
The evolution of CPIR



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CPIR's equity-centered design

CPIR ENABLES ENGAGEMENT WITH CONSUMERS TO BE DIGITAL, TARGETED, PRECISE, AND PERSONALIZED



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CPIR high-level architecture

Sources

- National Health Index
- National Enrolment Service
- Tātai (Iwi Affiliations)
- Health Service User Dataset
- Immunisation Registers
- National Contact Tracing Service
- National Immunisation Booking System
- National Border Solution
- National Breast Cancer Screening

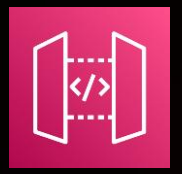
Ingestion



Amazon Kinesis



Amazon AppFlow



Amazon API Gateway

Storage



Amazon S3 Raw Zone



Clean Zone



Curated Zone

Processing and Orchestration



AWS Lambda



AWS Glue

Analytics / BI



Amazon QuickSight



Machine Learning



Amazon Athena

Communication



Amazon Pinpoint



Amazon Lex



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AWS Communication Developer Services (CDS)



SMS



Push/in-app notifications



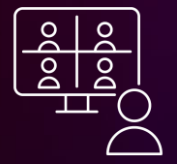
Email



Chat



Programmable voice



Video

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Amazon Pinpoint



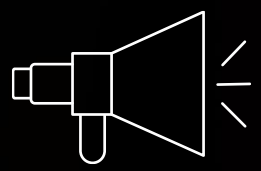
Amazon Pinpoint is a multi-channel communications service for message delivery, management, and optimization, enabling businesses to deliver the right message to the right person at the right time

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Managing and optimizing messaging with Amazon Pinpoint

With Amazon Pinpoint, customers can target user communications through:



Campaigns + Journeys

Where communications go

- Automated workflows and event-triggered cross-channel messages



Insights

Why people engage

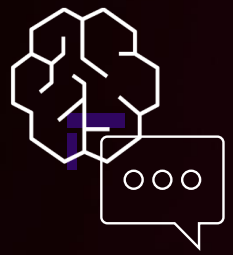
- Aggregate data in any insights platform or ML database



Segmentation

Who gets communications

- Segment into static or dynamic lists



Personalization

What messages say

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Te Whatu Ora
Health New Zealand

Select cohort below

Select Provider regions:

× BreastScreen Counties Manukau

Select Domiciles:

× 0809 - Pukekohe North × 0810 - Pukekohe West

Select age range:

0 45 69 110

Selected age group "[45, 69]"

Select ethnicity group:

× Maori × Pacific

Select gender group:

× Female

Select Screening status filter

Select Screening Status:

× Enrolled & Overdue × Enrolled & Unscreened

Submit

Total Population Selected: 139

Updated: 11:30 AM, 07/11/2022

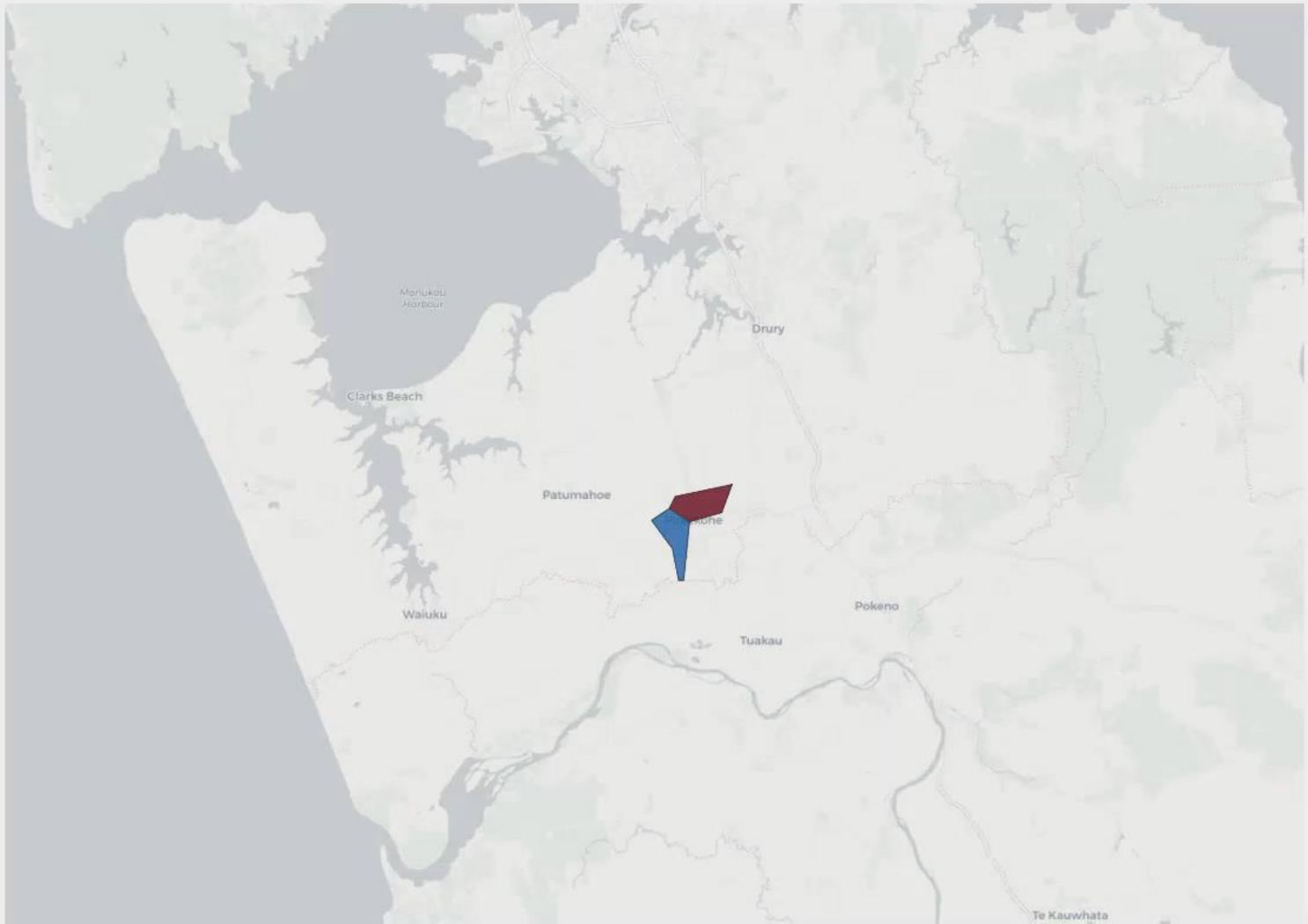
The map below shows the breast screening rates (proportion) and population count for each domicile. You can select to show areas that have at least 'x' number of people using the input box below. Use the range slider to adjust the colour bar scale of the map.

- (•) Population Count
- ( ) Proportion (selected cohort)

Show provider regions

Minimum population threshold 10

0 50 100%



Selected Population
90
80
70
60
50
40
30
20
10

CPIR as a blueprint

APPLYING AWS TECHNOLOGY TO ADDRESS HEALTH EQUITY AT SCALE

- Tailored and precise healthcare messaging
- Collaboration between care providers
- Improved equity
- Value at scale

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Thank you!

Heather M. Nelson (she/her)
hnelson@deloitte.com

Nate Bechtel (he/him)
nbechtel@amazon.com



Please complete the session survey in the **mobile app**

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