Keeping Track of Health

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Delivering a Healthy WA
Western Australia's public health system aims:

• To ensure healthier, longer and better lives for all Western Australians

• To protect the health of our community by providing a safe, high quality, accountable and sustainable health care system
Epidemiology Branch

Our Aim:

To monitor, assess and report on health profiles and service utilisation for the WA population.

We provide information to:
- Guide policy development
- Identify emerging issues
- Prioritise service delivery
- Evaluate health system performance

For more info visit: http://www.public.health.wa.gov.au
Email: epi@health.wa.gov.au
GIS in WA Health

- Epidemiology Branch within Public Health Division
- 3 FTE + 0.4 contractor position
- Historically MapInfo domain, changed to ESRI suite due to increased spatial analysis
Overview

• Background

• System Architecture and Components

• Data Sources and Application Functionality

• Outcomes and Future Plans
Background

- Effective public health relies on quality data
- Shift from Health cost to Health gain
- Health Demonstrator Project – Health Tracks
- Where is?
- Boundary locations
- Demographic & Population
- Health thematic maps
- Mapping my own data
- Web-services via Landgate’s SLIP
System Architecture 1

- Delivered through a web browser
- Use an innovative, modern display
- Interface must be user friendly and intuitive
- Application must be fast and responsive
System Architecture 2

• Existing infrastructure
  – Windows Server
  – IE 6 & 7
  – ArcSDE with SQL Server
  – ArcGIS Server Enterprise Edition
System Architecture 3

1. Generates maps and executes spatial queries
2. Custom HealthTracks functions such as querying Health data, uploading user data and exporting data
3. SLIP WMS Map Requests
4. ArcGIS Server Map Service Requests
5. Custom HealthTracks interface implementation including button actions, forms, map management and Help screens

- ArcGIS Online
- AGS Map Service Requests
- SLIP Server
- WMS Requests

- User Computer
- Custom Health Tracks Flash Application (SWF) incl. MSXML & ActionScript
- Flash Plugin
- Browser, eg IE

- Microsoft IIS Web Server
- Web Services
  - Custom Functions in C#
- REST API
  - ArcGIS Server
    - ArcSDE

- HealthTracks Server (GIS PROD)
- Spatial Data
- Census and Health Data

- SQL Server

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HealthTracks Data Sources

Environment and Economic information

Social Determinant information

Birth Records  Health Surveys  Hospital Records  Cancer Registries  Death Records
HealthTracks End Users

Public Health Managers,
Policy Developers and Planners

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Data Storage and Access

- Base Map
- Contextual Data
- Health Data

ArcGIS On-line
Landgate SLIP
WA Health Public Health GIS
My Data
WA Health All staff
Application Functionality

- Search and Identity tools
- Map:
  - Population
  - Demographics
  - Health Condition data
- Upload/Export data
- Print/Export maps
- Monitor Usage
Health Tracks Outcomes

- Staged release valuable
- Achieved wide exposure
- Added value to program planning
- Increased efficiency of GIS branch
- Executive support for future
Health Tracks Outcomes

• Winner of 2010 WA Spatial Excellence Award for Spatially Enabling Government, July 2010

• Winner of 2010 Asian Pacific Spatial Excellence Award for Spatially Enabling Government, October 2010
Barriers and Limitations

- Patient and Hospital Confidentiality
- Reliable statistical measures for small areas
- Restrictive administrative boundaries
- Guidelines on release of spatial health information

- Future Research Focus
Where to next?

- First step of the journey
- Extend health statistics
- Merge into business systems
- Add more health relevant SLIP layers
- Extend to other jurisdictions
Thankyou

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