

Integrated Public Health Information System (*i*-PHIS)



*An Update For Public Health Research
Evaluation and Development*

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i-PHIS - Rationale For Change



- SARS outbreak highlighted “serious deficiencies” in Ontario’s current Reportable Disease Information System (RDIS)
- RDIS is outdated, built on obsolete platform, lacks the reporting sophistication for our current environment
- *i*-PHIS was recommended by the Walker Report
- Recommended and supported by Health Canada and the Public Health Agency of Canada
- In use in a number of other jurisdictions across Canada

Review of RDIS

38 stand-alone versions of RDIS

- No data sharing across health units
- Creation of duplicate clients and episodes
- Re-entry of cases and contacts
- Infrequent provincial system updates
- Health unit customization
- No real-time data collection
- Inability to rapidly detect trends and outbreaks

Review of RDIS - continued

Difficult to learn and use

- RDIS became a “reporting” system rather than a “case management system”
- Resulted in creation of multiple-systems

Lack of quality assurance and data standards

- “Garbage in” ---> “garbage out”
- Poor data to make decisions
- Lost opportunity to report findings

Review of RDIS - continued

Limited case/contact/outbreak mgmt

- Contacts are linked to cases not to “events”
- No ability to capture College of Nurses compliant nursing notes
- Summary level outbreak information collected only

Poor/No Analysis, Graphics etc.

- Data extraction to other systems required
- Reliance on other systems to generate letters, worksheets, reports, tables and graphs



PHIS Applications Page

Demographics

General

Administration

System Admin

CD

TB

STD

Lab

Mass

Public Health

Outbreak

Reports

Logoff

Welcome to the Public Health Information System Application!



Public Health Information System



i-PHIS Functionality

Data Sharing 'On'

- Data stored in a central database - reducing duplicates
- Near real-time data access
- Ability to transfer client information between PHU's
- Improved communication between PHUs and PHU's to MOHLTC
- Improved ability to handle multi-PHU outbreaks
- Automatic roll-up of outbreak information for reporting purposes

i-PHIS Functionality



Increased Accessibility

- *i*-PHIS = web-based application
- View/Input data using Internet Explorer

Improved Reporting Tools

- Business intelligence tool (Cognos) used for reporting
- Drag and drop report creation
- Potential letter & worksheet creation
- Decreased reliance on other software (e.g. SPSS, PowerPoint, etc.)

i-PHIS Functionality

Improved Support And Easily Upgraded

- Thin-client solution and requires minimal software to be installed on the desktop
- Built with industry standard Oracle database

Ability to Enforce Data Standards

- Filtered drop lists for key disease fields
- Expanded external sources (e.g. schools, day nurseries, etc,)
- Build-in business logic to enforce business rules
- Revised disease codes (e.g. ICD-10 compliant)
- Detailed glossary and data dictionary

i-PHIS Functionality



Improved User Aids

- On-line help
- *i*-PHIS User Manual
- Call Centre Support

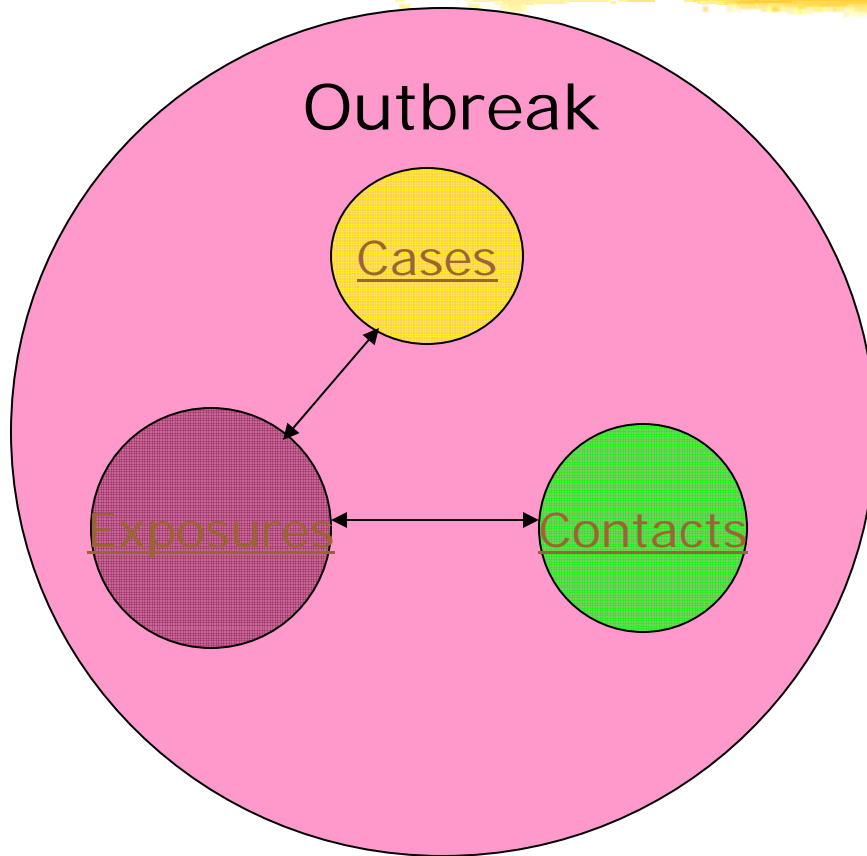
Improved Security

- Hosted by Smart Systems for Health Agency (SSHA)
- VPN and Key fobs for secure access

Interoperability

- GIS, Ontario Laboratory Information System (OLIS), etc.

i-PHIS Functionality - Outbreak Module



- Creation/deletion
- Search
- Link/Unlink
- Assignment

i-PHIS Outbreak Module



Enhanced Search Functionality

- by outbreak
- by case or by contact details
- by exposure details
- by client
- employs soundex, alias and reverse look-up
- within and outside of an outbreak

i-PHIS Outbreak Module

Outbreak Management

Enhanced Case & Contact Management

- | capture progression (daily follow-ups and outcome)
- | detailed intervention history
- | detailed prophylaxis, treatment (with sensitivities) and immunization information
- | linking and unlinking from current outbreak or from exposures
- | defining new exposures

i-PHIS Outbreak Module



Enhanced Work Assignment Capability

Can assign responsible HU and primary and additional investigators to:

- | outbreaks
- | workgroups
- | cases and/or contacts
- | exposures (e.g. locations)

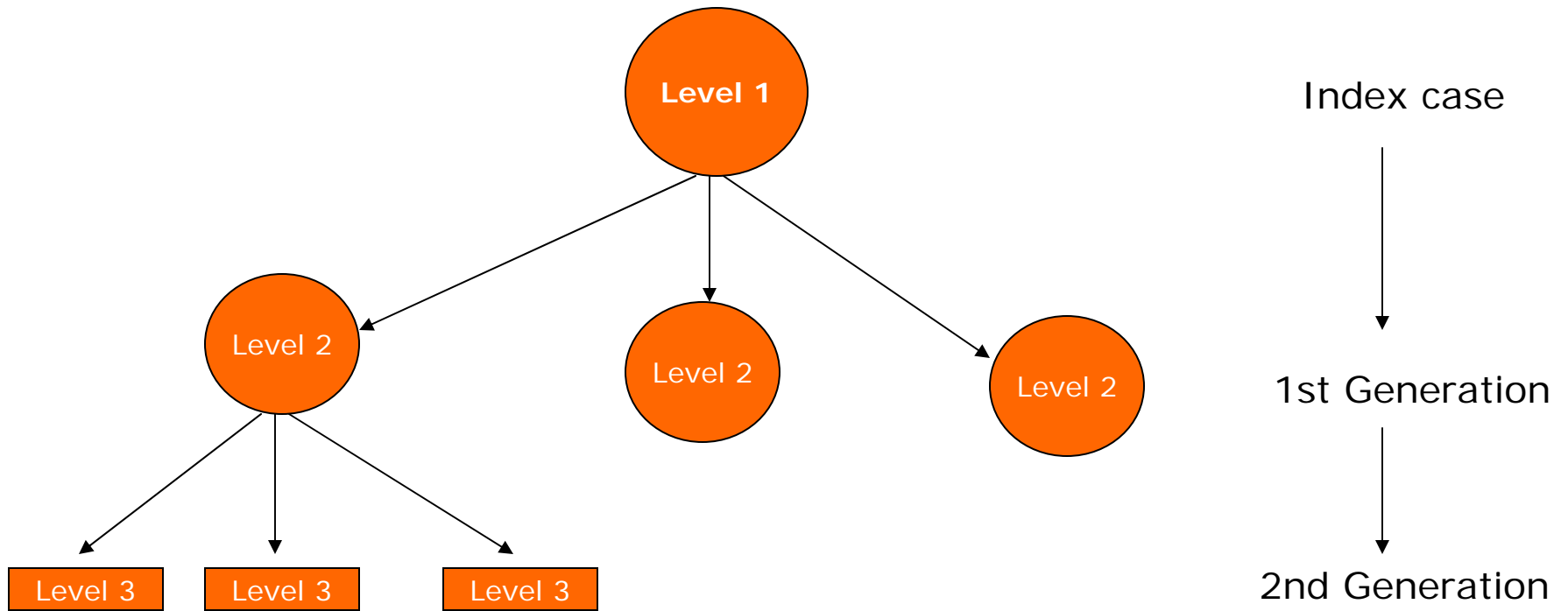
i-PHIS Outbreak Module

Enhanced Exposure Management

- people exposures
- animal exposures
- vector exposures
- item exposures
- setting details
- travel details
- exposure liaison
- infection control measures
- associated cases & contacts
- exposure links and tracking spread of disease

i-PHIS Outbreak Module

Enhanced Exposure Management - Linkages



Cognos Business Intelligence Software



- Industry leader in software developed to report on complex databases
- Flexible, Reliable, Supported
- Industry standard
- Also thin client software (minimal desktop “footprint” means easy up-grade and easy central support)
- Licenses paid for by MOHLTC

Cognos ReportNet.....but



- ReportNet is relatively new product
- Few “experts” available
- Familiarity with product just now spreading
- Industry in early phase of learning curve

i-PHIS 'Canned' Reports



Disease Reports (by disease, HU and time frame)

Outbreak Reports

Quality Assurance/Workload Reports

Impact On CD Business Surveillance & Reporting Units



Reporting

- MOHLTC - real time access to non-nominal data required for their work
- Canned" reports and automation should decrease epidemiologist/data analyst time filling data requests
- Epi's and data analysts will require training to become proficient users of Cognos ReportNet

Use Of RDIS Post Rollout

- Much data, other than demographics, will not be migrated to *i*-PHIS and will remain in RDIS for now
- Trend data should be run prior to implementation
- Staff will have to keep reporting skills current in RDIS for some time

Conclusions



- Ontario's public health system has been given a tremendous opportunity to improve its communicable disease information system;
- *i*-PHIS will not solve all of Ontario's communicable disease information system needs immediately;
- System development is an iterative process and Ontario must work collaboratively with Health Canada to ensure that requirements are met.