



LabMine: Actionable Insight

Microsoft Innovation Centre
New Zealand

Sysmex

a+ Lab PLUS

simplhealth

Introductions



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Presentation Outline

- ⊙ LabPlus Background
- ⊙ LabMine The Project
 - The Innovation Centre
 - LabIntelligence
- ⊙ The Outcomes
- ⊙ The Future
 - Integration
- ⊙ What this all means for you

Background

Delphic Lab Results System

- ⊙ Incredibly efficient and secure Lab Information System
- ⊙ Excellent Data store and results processing capability
- ⊙ Excellent service and support from the provider Sysmex.

The Sysmex logo consists of the word "Sysmex" in a blue, sans-serif font. The "S" is significantly larger and more stylized than the other letters.The logo features a blue circle containing a white plus sign, followed by the word "Lab" in a large, bold, blue font, and "PLUS" in a smaller, blue font below it.

The Challenges

Operational & Management Reporting

- ⦿ Retrieval and presentation of data
- ⦿ Labour intensive reporting
- ⦿ Potential for transcription errors
- ⦿ Limited flexibility



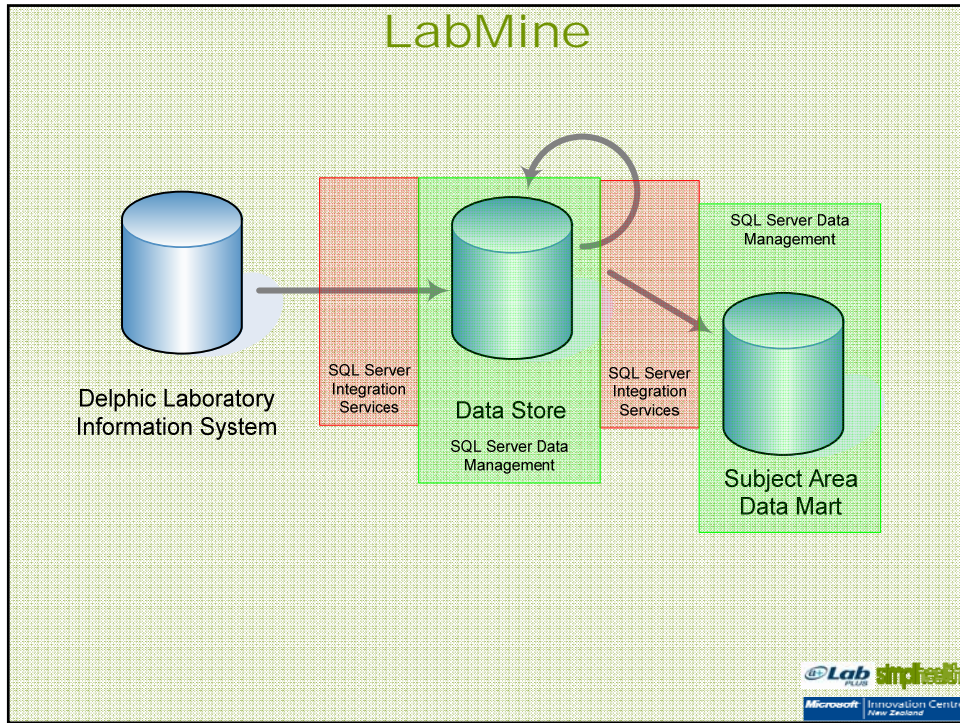
Why Lab Mine?

Incredible volume of quantitative data....



Treasure waiting to be mined





Innovation Centre Strategic Vision

Develop proof of concept solutions to:

- ◉ Help Government realise value of existing investment in Microsoft technology
- ◉ Work together on innovative technology solutions – MS, Government & Partners
- ◉ Contribute to the NZ knowledge economy
- ◉ Foster local expertise and best practices in the latest Microsoft technology



Innovation Centre History

Established August 2002

- ◉ ~ \$1m annual investment
- ◉ 58 proposals submitted from 41 different government agencies
- ◉ 22 projects funded to date across 6 funding rounds
- ◉ Close to \$1m invested in health-related projects



How does it Work?

Government agencies submit proposals via:
www.nzinnovationcentre.net.nz



The Steering Committee evaluates the proposals



Certified partners and Microsoft work with the agency to deliver successful projects



Outcomes

Clinical Decision Support

- ⦿ Answering Clinical Cost Questions
- ⦿ Making better Clinical Guesses



LabIntelligence Innovation Centre Project

NT – Pro BNP Regression Analysis

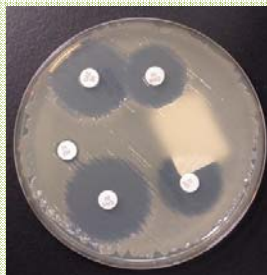
- ⦿ Advanced mathematical models
- ⦿ Learning how and where to use these tools

Antimicrobial Susceptibility

- ⦿ Speed of delivery
- ⦿ Ease of use



LabIntelligence Scenario One Antimicrobial Susceptibility



Results take time
Empirical treatment
Good data makes for a better guess
Microbiology labs must publish summarised results.



Summary of Antimicrobial Susceptibility Test Results: 2003/2004



Department of Clinical Microbiology, LabPlus, Auckland Hospital
 For more information visit the HINZ website: www.hinz.org.nz
 For more information visit the LabPlus website: www.labplus.co.nz

Table 1. Susceptibility of Gram-positive bacteria: - % susceptible

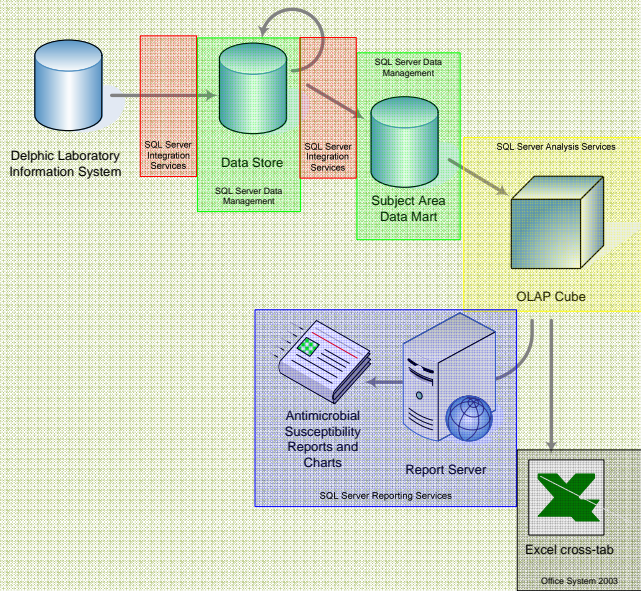
Organism (Number tested)	Penicillin	Erythromycin	Flucloxacillin	Clindamycin	Tetracycline	Doxycycline	Vancomycin
<i>Staphylococcus aureus</i> methicillin-susceptible (7286)	15	92	100	100			99
<i>Staphylococcus aureus</i> methicillin-resistant (1354)	R	43	R	94			86
<i>Staphylococcus epidermidis</i> (1627)	0	53	32	39			90
<i>Cocci</i> <i>negativa</i> <i>staphylococci</i> other than <i>S.aureus</i> (1021)	13	93	39	83			96
<i>Staphylococcus pneumoniae</i> ** (987)	65	78			78		
<i>Staphylococcus pyogenes</i> (1707)	100	98			80		
<i>Streptococcus agalactiae</i> *** (1693)	100	93			72		
<i>Streptococcus mitis</i> (254)	96	94			61		
<i>Citrobacter faecalis</i> (1334)							100
<i>Enterococcus faecium</i> (88)							16

[R] usually or always resistant. [S] usually or always susceptible.
 * 2355/2354 (51% / 2358/2357) of *S. pneumoniae* tested had intermediate level resistance. Penicillin in both cases should be adequate to treat infections caused by *S. pneumoniae* for which methicillin resistance is proved to confer the resistance in the central nervous system.
 ** 12% of MRSA isolates are VZPP 3 type type. For further information on MRSA susceptibility patterns and epidemiology visit the HINZ website: www.hinz.org.nz
 *** In a recent study we tested for susceptibility to 1100 *S. agalactiae* isolates, 13% (144) were resistant to erythromycin, 2 infections or 0.2% demonstrated inducible clindamycin resistance.
 R: Fluoroquinolone resistant *Staphylococci* are also included in susceptibility testing of all other pathogens tested.

Antimicrobial Susceptibility Report



The Solution



Reporting Outcomes

- ◉ On-demand access over any web connection
- ◉ Multiple presentation formats - HTML, MHTML, PDF, XML, CSV, TIFF, and Excel
- ◉ Relational (DB), multidimensional (OLAP), and XML data sources
- ◉ Free-form report layout – multiple data sources and presentation styles on a single report
- ◉ Parameters and drill down support out of the box
- ◉ Server based reporting processing – snapshots, subscriptions



Clinical benefits

Generation of unit-specific susceptibility reports

- ◉ “High antibiotic user” units eg Haematology, Transplant services
- ◉ Assistance in developing antibiotic protocols

Yearly review of data for hospital-wide report

- ◉ Ability to review data more regularly

Monitor antibiotic resistance trends per organism

Early recognition of nosocomial outbreaks

- ◉ Trend of new resistance pattern e.g. GRSA





The future for LabPlus

- Move to Production**
 - Antimicrobial Susceptibility Scenario
 - Analysis Models
 - Reports – Billing, Process Improvement
- LabIntelligence futures**
 - 21 scenarios identified (2 attempted)
- LabExtra Projects**
 - Low volume Analyser data
 - Integration with other Database






The future for you?

Interested in what we have done?

Use Sysmex Delphic?

Interested in the Innovation Centre?




simplhealth

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