

Centre for Health Record Linkage (CHReL)

*‘A new resource for
health services research and evaluation’*

Isa Dinh B.HIM, M.CDM



Overview

1. The CHeReL
2. Master Linkage Key (MLK)
3. CHeReL services
4. Data Linkage Methods

The CHReL

With data custodian and ethical approval

- was established to create and maintain a record linkage system for health and human services in NSW and the ACT
- created a Master Linkage Key, consisting of 'pointers' to records for specific people in health-related datasets
- provide a mechanism for accessing linked data for
 - ◆ research, planning and evaluation of health services
- ... for the public benefit

Master Linkage Key (MLK)

- Is a repository of linked records using demographic data from health-related datasets
- Does not hold any health information
- CHeReL assigns each linked record a CHeReL person number and each project a project person number
- Currently consists of ~19.4million records (~6.1million people)

CHeReL services

1. Extracts from the MLK

e.g. subset hospitalisation records linked to cancer records

2. Link MLK extract with study / administrative dataset(s)

e.g. MLK extract of linked hospitalisation records to recruited study cohort

3. Link 2 or more non-MLK datasets

e.g. recruited study cohort to an administrative dataset

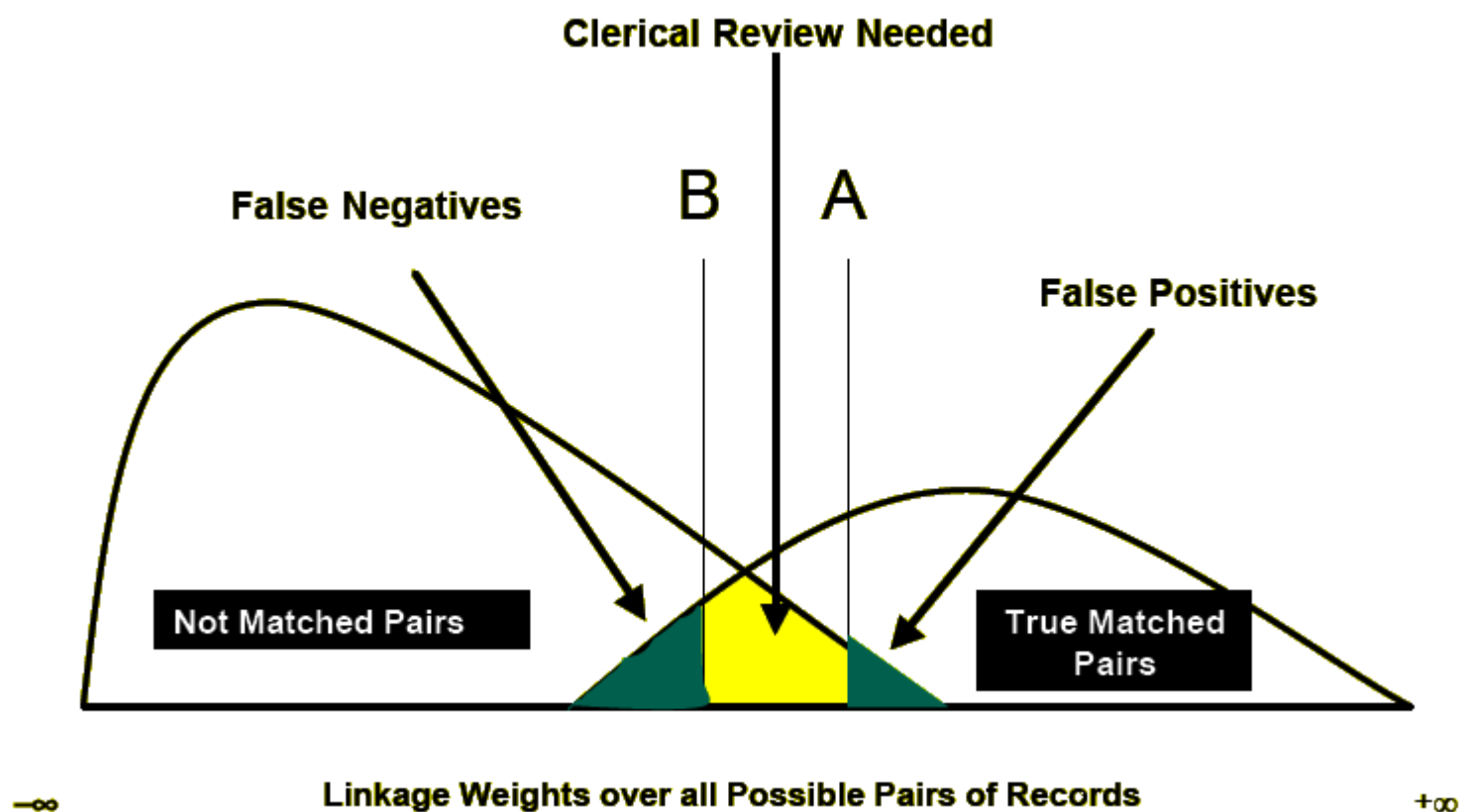
4. De-duplication of administrative datasets

e.g. internal linkage of records contained in one dataset

Data linkage methods

- Probabilistic linkage
 - ◆ ChoiceMaker software
 - ◆ Name, date of birth, sex, address (identifiers)
- Clerical reviews by Record Linkage Officers
- Extensive Quality Assurance process
- Maintain
 - ◆ False positive link rate of $\leq 0.5\%$
 - ◆ False negative link rate of $<0.1\%$

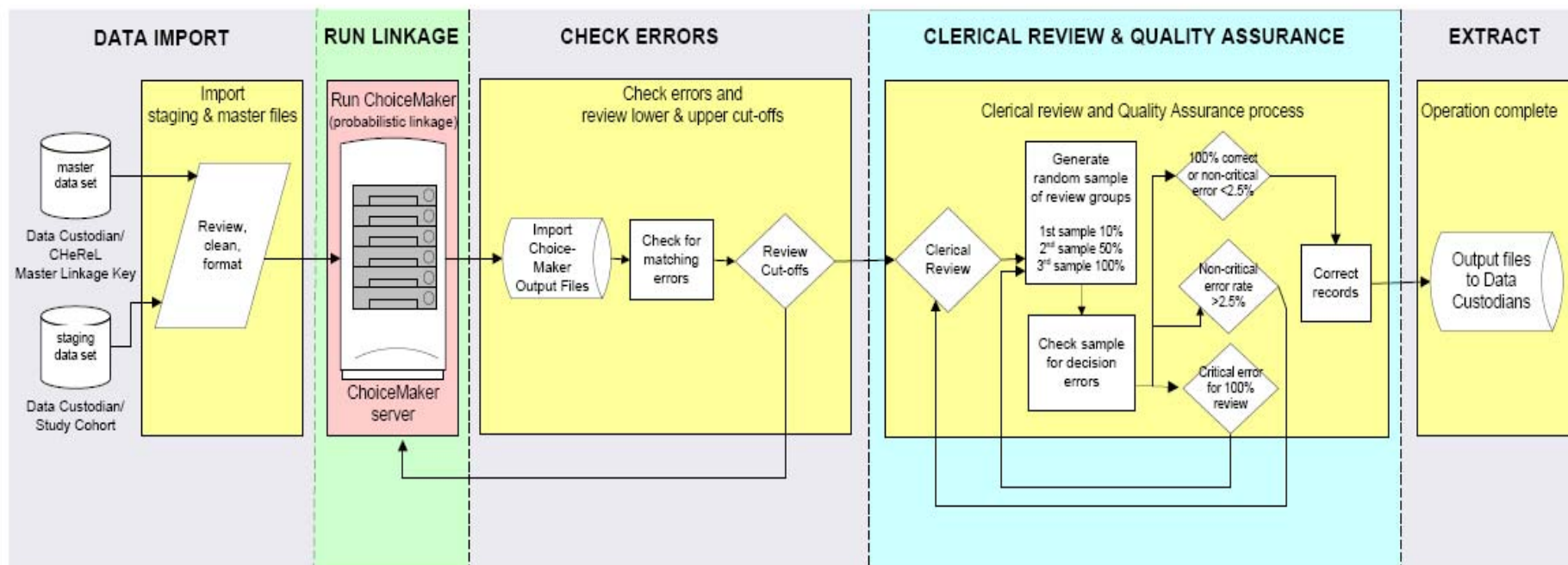
Clerical Review



CHeReL - Data Linkage Technical High Level Process Flow

Manual Process

Automated Process



How it works (1)

Data custodian



CHeReL

Cancer register

a1 + name+address+DOB+sex+...
b2 + name+address+DOB+sex+...

Hospital data

c3 + name+address+DOB+sex+...
d4 + name+address+DOB+sex+...
e5 + name+address+DOB+sex+...

Death registrations

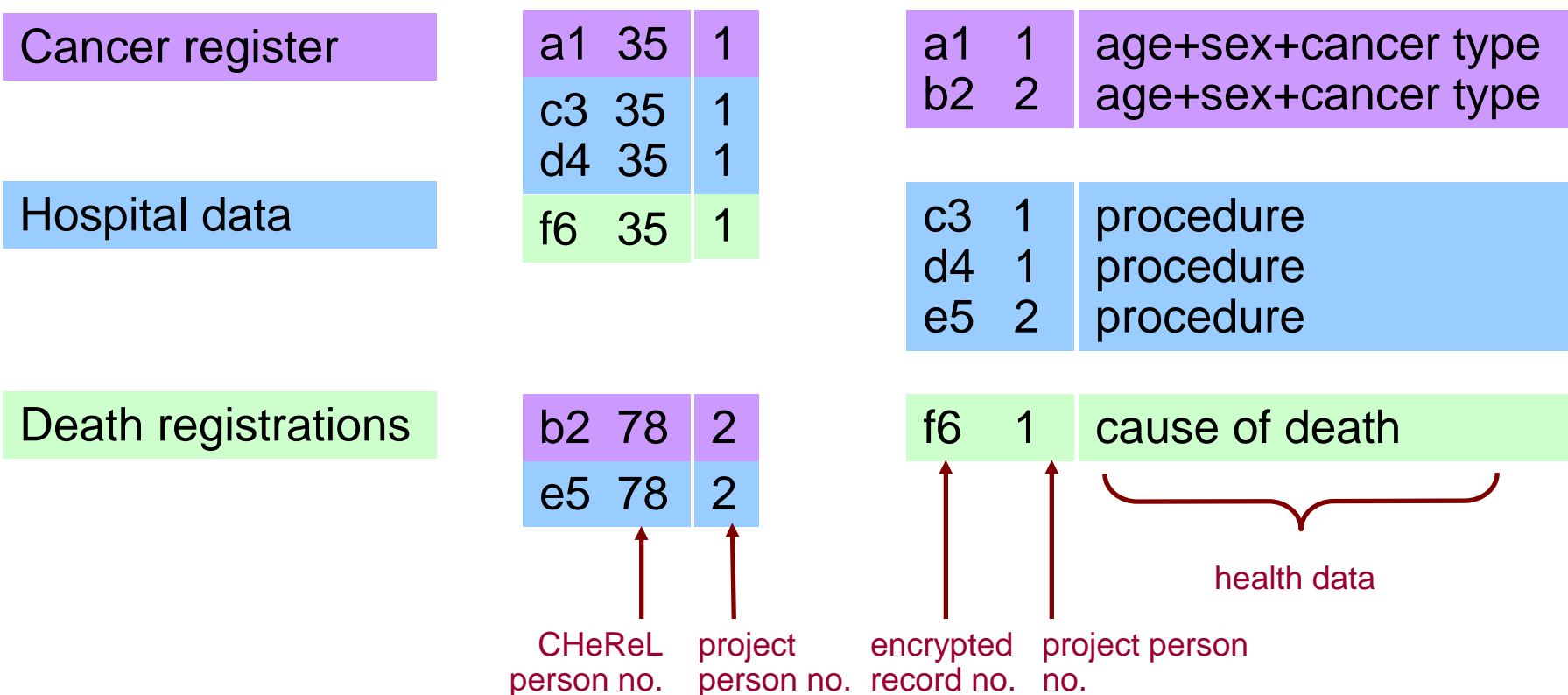
f6 + name+address+DOB+sex+...

↑
encrypted
record no.

identifiers

How it works (2)

Data custodian → CHeReL → Data custodian



How it works (3)

Data custodian

1 age+sex+cancer type
2 age+sex+cancer type

1 procedure
1 procedure
2 procedure

1 cause of death



Researcher



1 age+sex+cancer type

1 procedure
1 procedure

1 cause of death



2 age+sex+cancer type

2 procedure



project
person no.

health data



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- Lee Taylor, Glenda Lawrence, Katie Irvine, Kim Lim, Michael Smith, Anita Bobba, CHeReL Record Linkage Officers and Staff
- Funding organisations
- NSW Health and Cancer Institute NSW
- Members of CHeReL Management Committee and Community Advisory Committee

Further Information

- Website www.cherel.org.au
- CD-ROM available on request
- Email cherel@cancerinstitute.org.au
- Telephone (02) 8374 3515

References

- ChoiceMaker (2007). *ChoiceMaker Product*. Available at: <http://www.choicemaker.com/content/products/index.php3> (accessed 20 March 2008).
- Centre for Health Record Linkage (2008). *CHeReL Quality Assurance in Record Linkage*. Centre for Health Record Linkage, Sydney. Available at: <http://www.cherel.org.au/downloads.html> (accessed 13 August 2008).
- Kelman, C.W., Bass, A.J. & Holman, C.D.J. (2002). Research use of linked health data - a best practice protocol. *Australian and New Zealand Journal of Public Health* 26(3): 251-255.