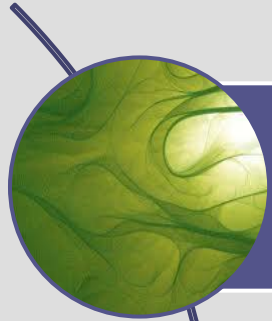


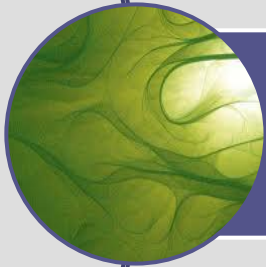
USE OF LINKED DATA TO INFORM SERVICE PLANNING, MANAGEMENT, MONITORING AND EVALUATION AND RESEARCH

Statistical Analysis and Linkage Team,
Health Statistics Branch,
Queensland Department of Health

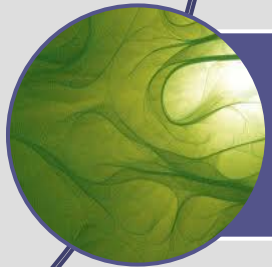
Presentation outline



What is data linkage



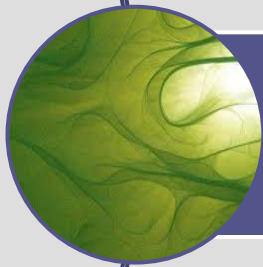
Uses of linked data



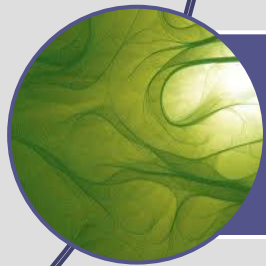
How to access data



What is data linkage

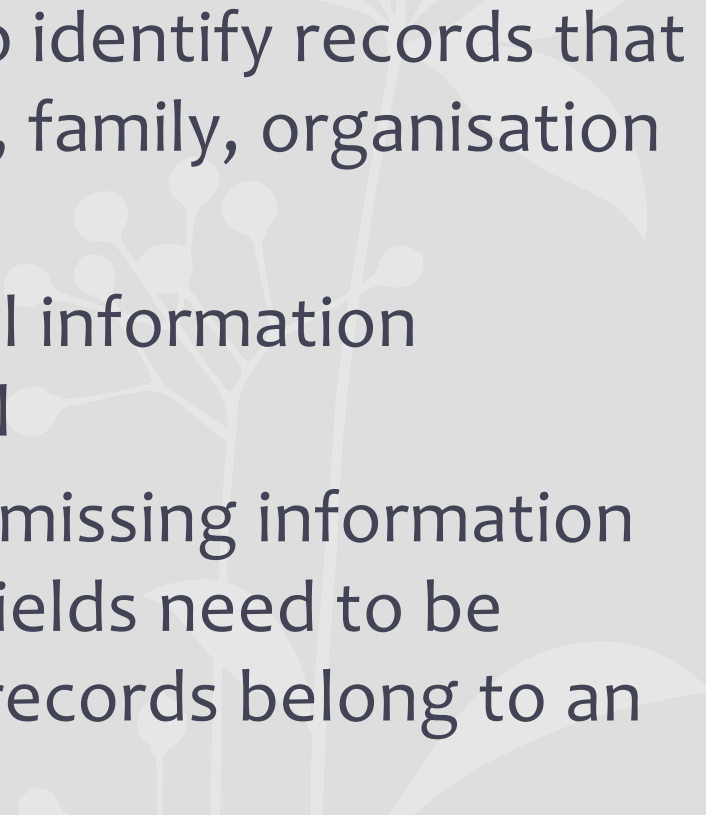


Uses of linked data



How to access data

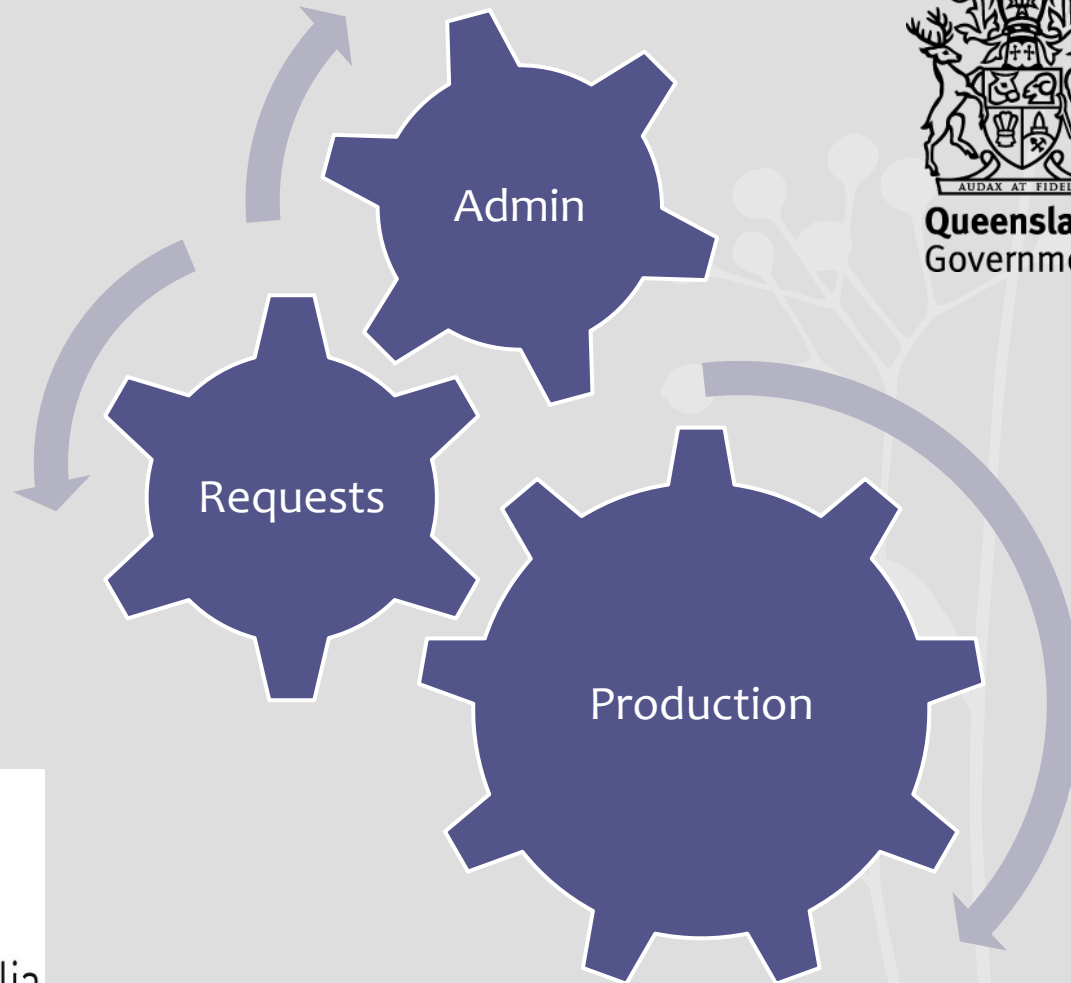
What is data linkage?

- **Data linkage** is a process used to identify records that refer to the same entity (person, family, organisation etc.).
 - **Deterministic linkage** – identical information available to identify an individual
 - **Probabilistic linkage** – errors or missing information in some or all records; multiple fields need to be considered to determine if two records belong to an individual
- 

Data linkage process

- Uses algorithms or purpose built software to compare multiple fields including name, address, date of birth, and sex to determine if two records belong to an individual
- When the linkage software is unable to make a decision about whether two records are a match or not, manual clerical review is used to evaluate these 'uncertain' matches
- Following clerical review, a further quality checking process is undertaken to try to reduce false positive and false negative matches

The linkage team (funded as part of NCRIS initiative)



NCRIS

National Research
Infrastructure for Australia

An Australian Government Initiative

Production team

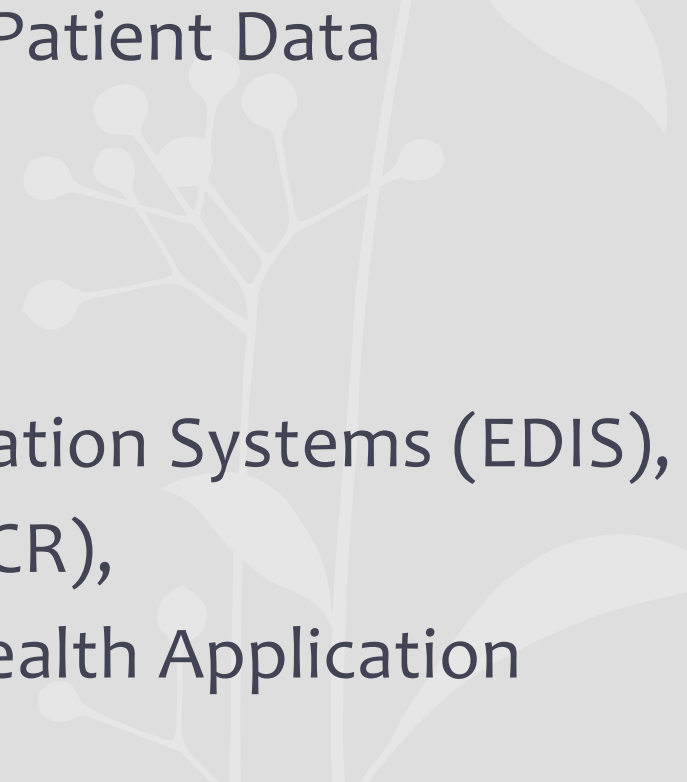
- Using ChoiceMaker and a custom built product (PPMS) to systematically link core health datasets – hospital admissions, perinatal data, birth registration and death registration data to make a Master Linkage File (MLF).
- Data linked from 2007/08 through to the latest available data.
- ED, elective surgery waiting list, NOCS, VIVAS and QAS data to be incorporated next.

Requests team

- Link data for research and departmental requests
- 4 senior linkage officers disseminate data linked within the MLF and custom link additional data as required using a commercial linkage application (LinkageWiz)
- Data have been provided for approx. 40 research projects being conducted within universities, hospitals or government departments and 100 projects being conducted by hospital or administrative government staff that are related to planning, managing, monitoring, or evaluating health services.

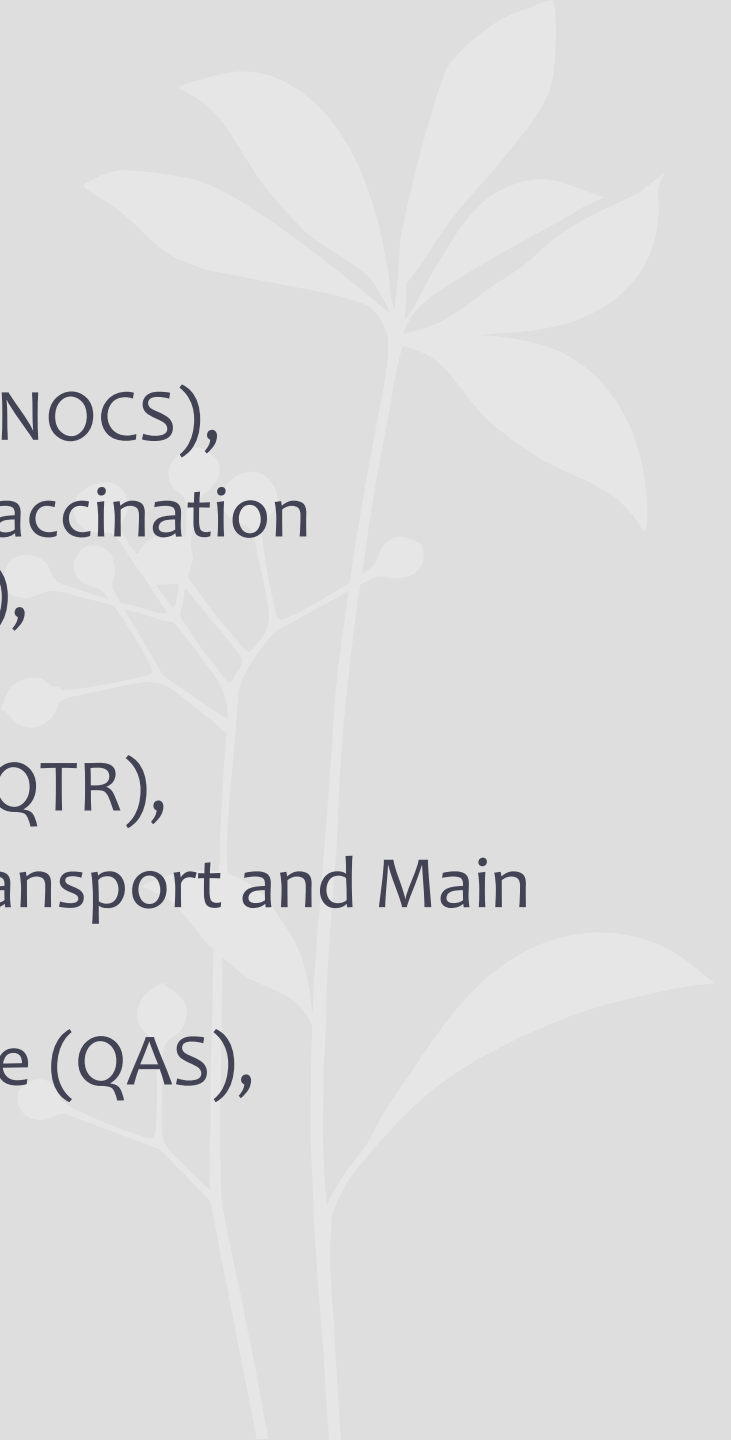
Requests team

Sources linked:

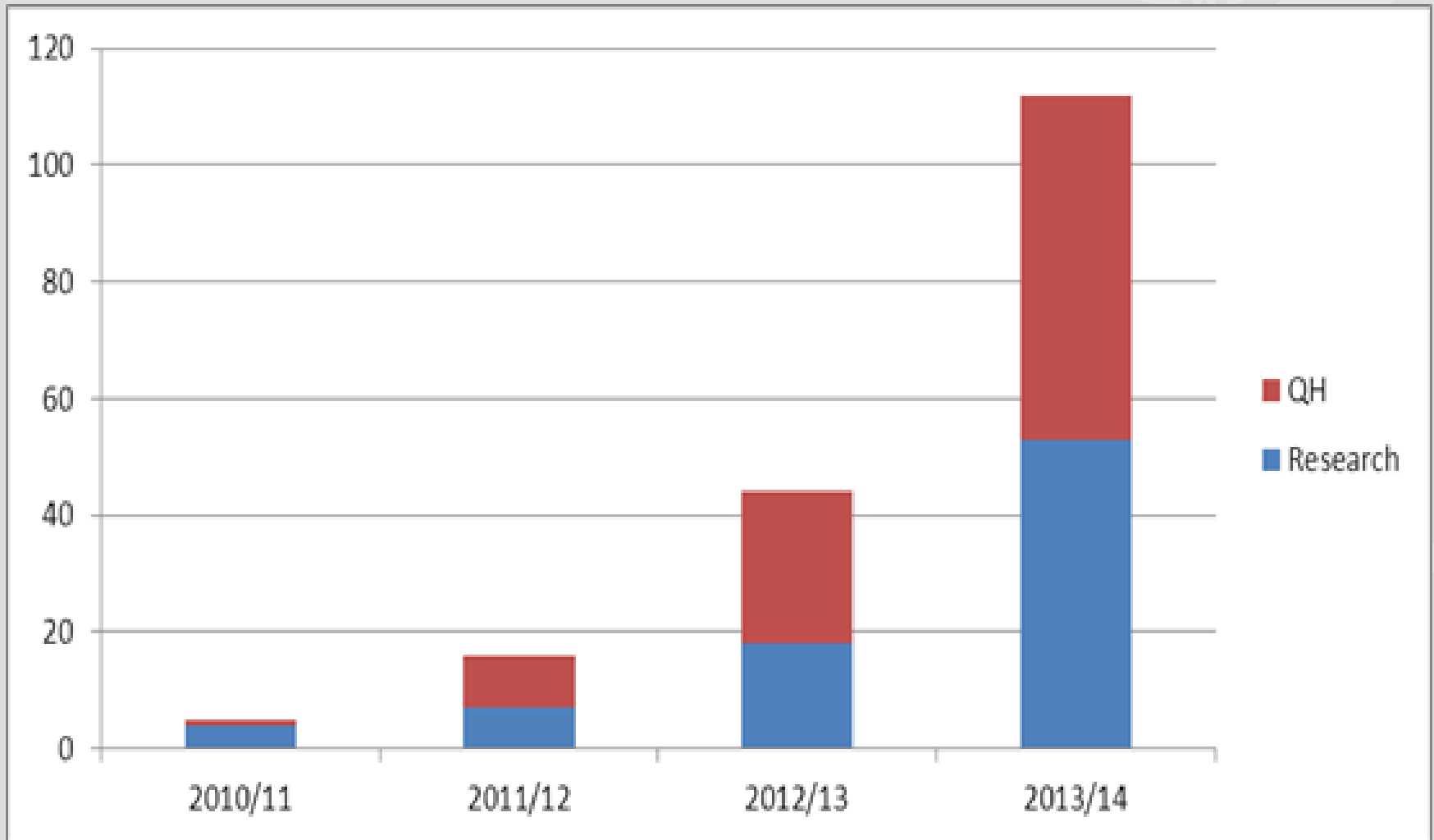
- Queensland Hospital Admitted Patient Data Collection (QHAPDC),
 - Perinatal Data Collection (PDC),
 - Birth and Death Registration,
 - Emergency Department Information Systems (EDIS),
 - Queensland Cancer Registry (QCR),
 - Consumer Integrated Mental Health Application (CIMHA),
- 

Requests team

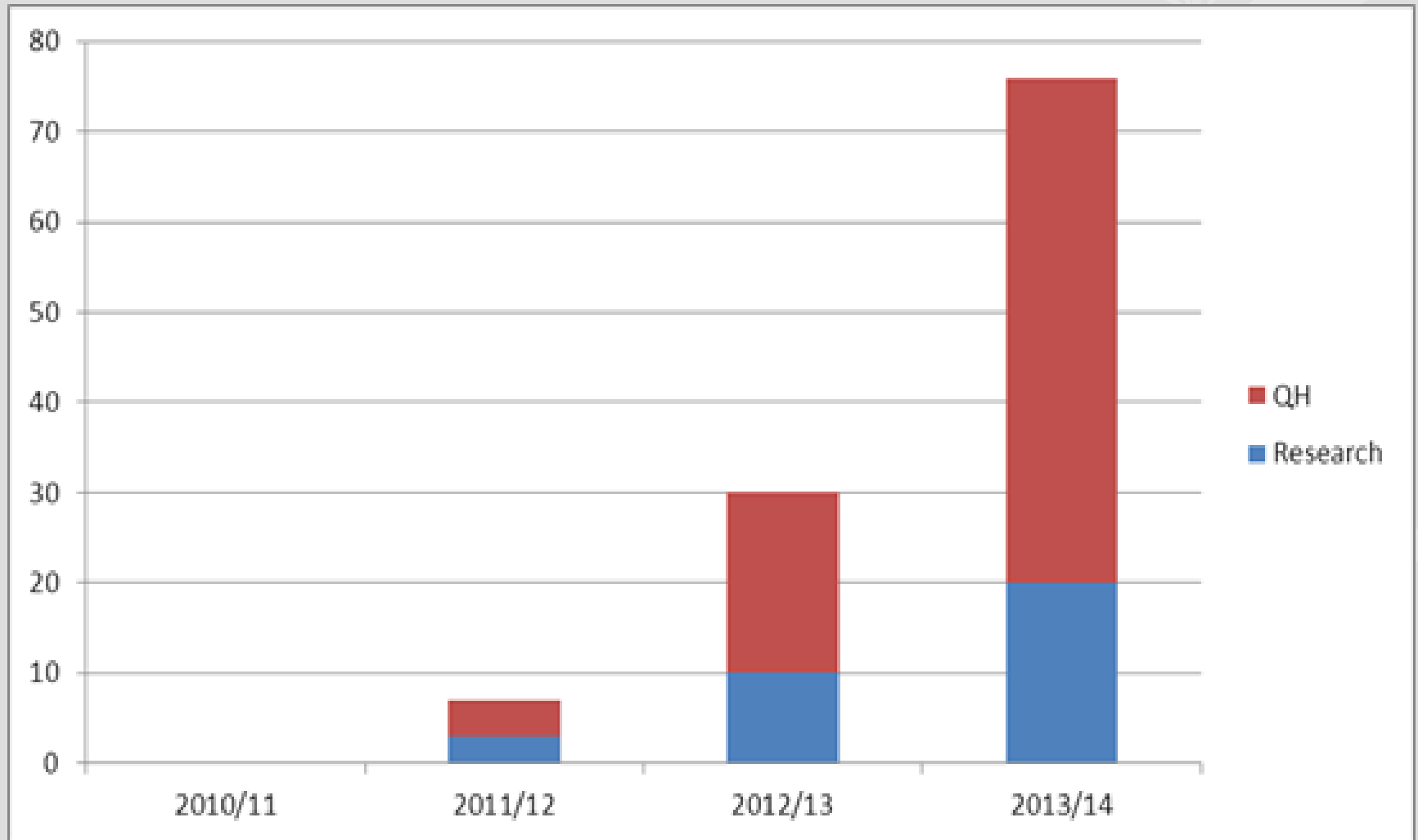
Sources linked (cont.):

- Notifiable Conditions System (NOCS),
 - Vaccination Information and Vaccination Administration System (VIVAS),
 - Pap Smear Register (PSR),
 - Queensland Trauma Registry (QTR),
 - Queensland Department of Transport and Main Roads (TMR),
 - Queensland Ambulance Service (QAS),
 - Correctional Services and
 - AUSLAB
- 

Requests team – new requests

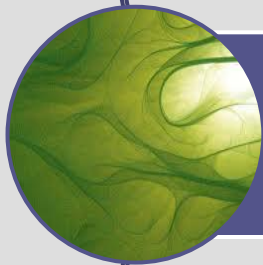


Requests team – Completed requests

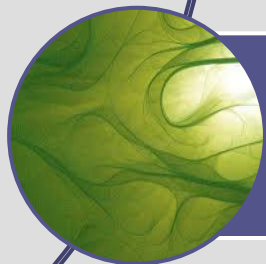




What is data linkage



Uses of linked data



How to access data

The value of data linkage


- Data linkage is a way to make better use of the large amount of administrative data already collected by the government and other agencies that currently sits in silos. Data linkage expands the scope of uses for these data collections to allow greater insight and can reduce the need for costly additional collection of information.
- Data linkage allows for efficiencies to be realised, thus saving money. For example, it allows for better targeting of services, improvements in allocation and recuperation of funds, and improved accuracy in estimates of patient needs to allow improved service planning.

The value of data linkage

- By linking existing administrative data clinicians and researchers have been able to achieve a better understanding of service use and requirements and patient outcomes for various types of health services.
- Data linkage can also allow investigation of relationships between health and other areas such as education, homelessness and encounters with the justice system. Use of linked data can provide insight into policy and research questions that cannot be addressed by existing data sources in isolation.

Examples of QH and other QA projects:

- Discharge planning evaluation (CARU)
- Health purchasing and pay for performance indicators (HCQ)
- Patient safety Key Performance Indicators (PSU)
- Patients using mental health services (MHU)
- Comorbid conditions for cancer patients (QCCAT)
- National Emergency Access Target evaluation KPIs (PSU)
- Queensland's contribution to the Dr Foster Quality Investigator System for international performance benchmarking (Metro North HHS)

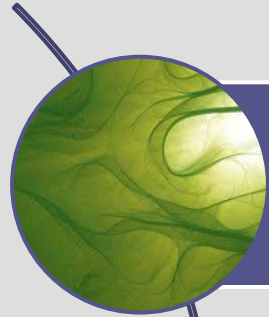
- 
- Evaluation of outcomes of clinical improvement programs (various)
 - removing deceased patients from elective surgery and outpatient waiting lists (e.g Wait Time Guarantee project) (CARU and Health Renewal Task Force)
 - hospital-based clinical registries and associated programs (various)
 - Audit of Surgical Mortality (Royal Australasian College of Surgeons)
 - Development of policy relating to bariatric surgery and end of life care plans (Strategic Policy and Planning Units)
 - Development of care plans for patients with multiple morbidities (Clinical Access and Redesign Unit)

- Evaluation of patient flow from emergency departments to in-patient wards (Planning Unit)

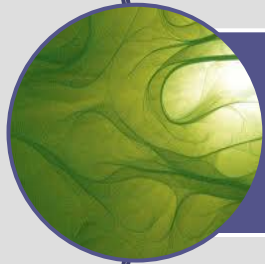
Evaluation and management of costs for service use:

- Patients eligible for Department of Veterans Affairs compensation
- High cost insurance claims
- Patients from PNG





What is data linkage



Uses of linked data



How to access data

Access to linked data

- Requests for linked data must be made in accordance with Queensland Health's data release protocols.
- Privacy and confidentiality of all administrative data are covered by legislation.
- Linkage of data for requests occurs in a secure environment and no patient identifying details are released to those requesting linkage services.
- All requests must be approved by the data custodian for each data collection being linked and research requests must have ethics approval in addition to data custodian and Director-General approval.

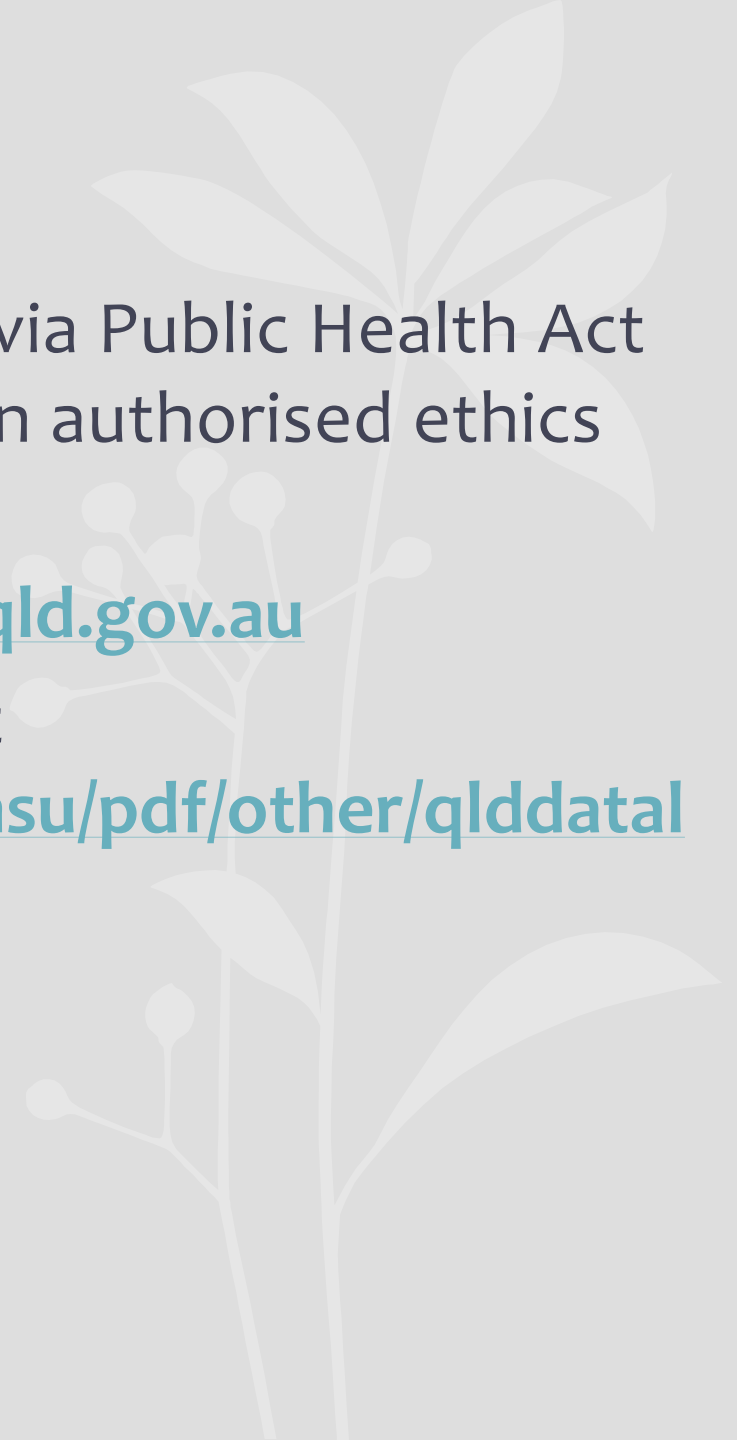
Access to linked data

- Potentially identifiable linked (and unlinked) data are available to Queensland Health employees for planning, monitoring, management and evaluation of services on request.
- Contact hlthstat@health.qld.gov.au



Access to linked data

- For research, data are available via Public Health Act application and approval from an authorised ethics committee
- Contact HSBresearch@health.qld.gov.au
- See Data Linkage Framework at <http://www.health.qld.gov.au/hsu/pdf/other/qlddataalinkframework.pdf>



Access to linked data

- Other useful links:
 - Decision tree to determine process required to request data -
<http://qheps.health.qld.gov.au/hsu/pdf/dt.pdf>
 - List of relevant data custodian contact details –
http://www.health.qld.gov.au/ohmr/documents/regu/data_custodian_list.pdf
 - Office of Health and Medical Research -
<http://www.health.qld.gov.au/ohmr/default.asp>