

Poche Centre for Indigenous Health

Is transformational change in STI control possible using a program science framework: Insights from the Ending and Impact STI project.



Acknowledgement of Country

The University of Queensland (UQ) acknowledges the Traditional Owners and their custodianship of the lands on which we meet.

We pay our respects to their Ancestors and their descendants, who continue cultural and spiritual connections to Country.

We recognise their valuable contributions to Australian and global society.



Presenters

Professor James Ward

UQ Poche Centre for Indigenous Health - Director

Helena King

UQ Poche Centre for Indigenous - PhD Candidate

Study Site Coordinators: Jethro Romer

UQ Poche Centre for Indigenous – Rockhampton

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Robbie Palm

UQ Poche Centre for Indigenous - Cairns

Cambell May

Katherine West Health Board

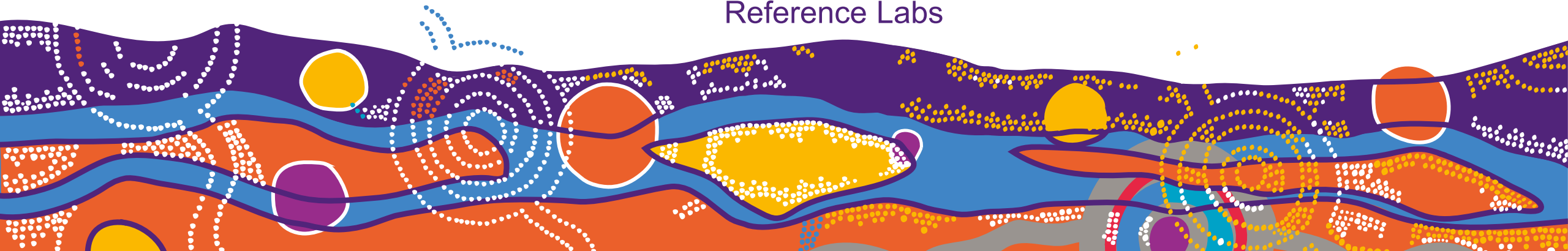
Professor Joanne Bryant:

School of Social Sciences, UNSW

Samantha Webster:

Queensland Public and Environmental Health

Reference Labs



Is transformational change in STI control possible using a multilevel intervention and a program science framework: Insights from the ENDING and IMPACT STI projects that have helped inform the RISE STI study.

Professor James Ward
UQ Poche Centre for Indigenous Health



Acknowledgement of Country

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I pay my respects to their Ancestors and their descendants, who continue cultural and spiritual connections to Country.

I acknowledge all First Nations peoples in room here today and indeed all who work to make a difference for our people.



Acknowledgements

Chief Investigators

Prof James Ward
A/Prof Joanne Bryant
Prof Rebecca Guy
A/Prof Bette Liu
A/Prof David Whiley
Professor Basil Donovan
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Study Team

Dr Salenna Elliott; Mr. Jethro Romer, Dr Aletha Ward, Ms Rani Lawler, Mr Campbell May, Ms Jane Wallace; Mr Robert Palm, Ms Chantelle Coppins, Ms Helena King, Dr Lihong Zhang, Dr Jiahui Qian, Dr Samantha Webster, Soo Jen Low, Sumeet Sandhu, Dr Francesca Azzato

Study Sites and AMS

Central Queensland Region: Nhulundu Health Service Bidgerdii Community Health Service, Blood Borne Virus and Sexual Health Service, Woorabinda Multipurpose Health Service,
Katherine West, Northern Territory
Cairns and Hinterland Region: Mamu Health Service, Wuchopperen Health Service, Gurriny Yealamucka Health Service Aboriginal Corporation, Mulungu Health Service, Apunipima Cape York Health Council Health Care Service, Balance Edmonton Family Practice, Cairns General Practice Medical Centre.

Community Advisors and Community Researchers

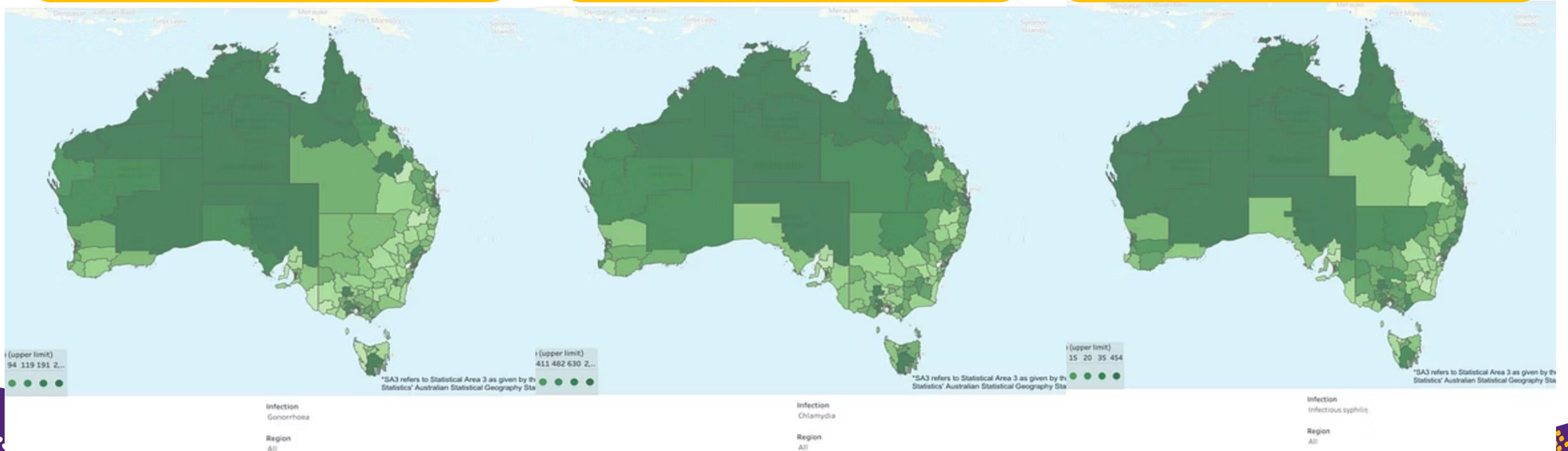


Australian Government
**National Health and
Medical Research Council**

Chlamydia

Gonorrhoea

Infectious syphilis



These images represent the interplay between where Indigenous people live and STI prevalence.

Single interventions have been important evidence but not enough!

GOANNA

Behavioral studies

B Part of It NT

Vaccination study

ATLAS

Surveillance network



STRIVE

Health services research

Young Deadly Free

Health promotion

PoCT

Point of care testing



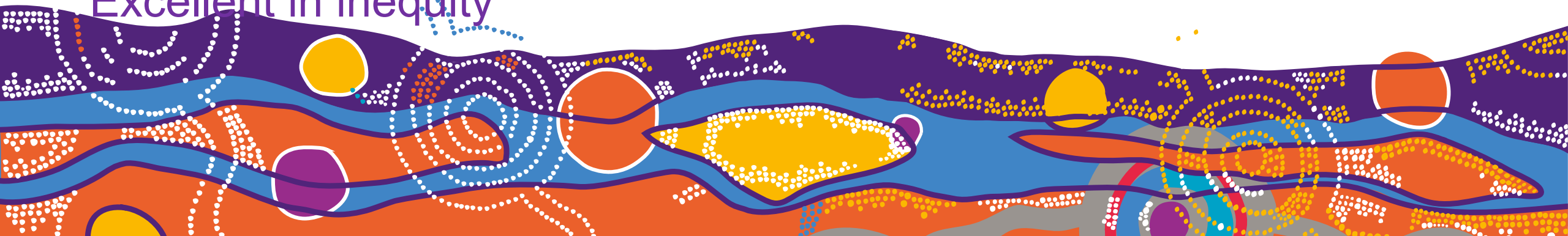
Potency has not been enough with single interventions

Multilevel interventions >2 levels of interventions

Program Science framework – bridges gap between evidence and implementation

PS uses an iterative process whereby empirical and place-based knowledge is incorporated rapidly into programming to optimize service deliver

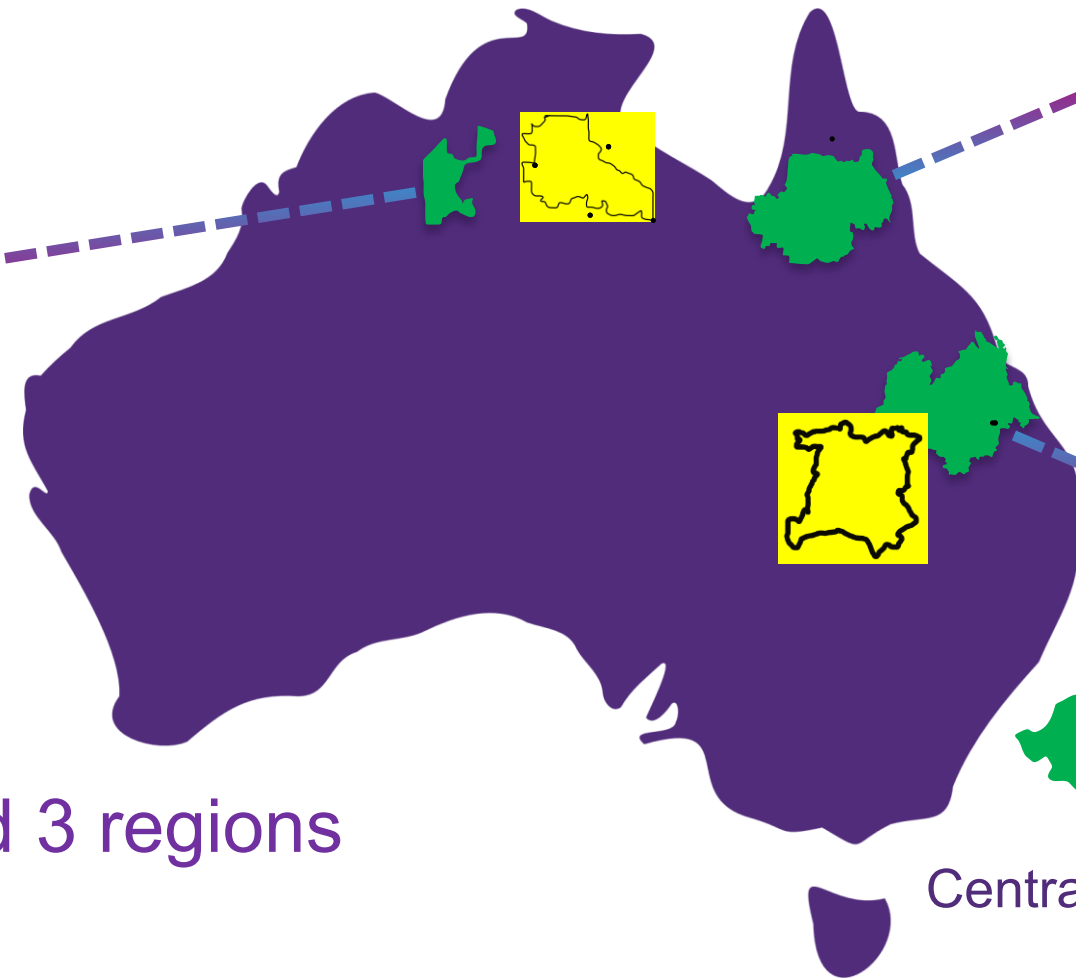
Excellent in inequity



ENDING and IMPACT STUDY SITES and RISE SITES Intervention & Control Sites



Katherine West
region, NT



18 health clinics and 3 regions

Central Queensland

Cairns and Hinterland

Deliberately staged approach comprising 3 phases

Phase 1: Strategic Planning

Identify Priorities: Determine the key areas for action and set high-level goals based on the current state of the epidemic and national strategies.

Map the Epidemic: Use geographical mapping and analysis of transmission dynamics to identify hotspots and understand the spatial distribution of HIV.

Understand the Context: Conduct rapid ethnographic assessments and micro-level appraisals to understand risk clusters within specific populations and contexts.

- **Co-Design Interventions:** with community and health services
- **Develop Delivery Platforms:** Create d infrastructure platforms for delivering interventions.
- **Adapt to Context:** Ensure interventions are context-specific and can be adapted to local regions
- **Engaged Communities:** Implement community engagement and mobilization strategies to ensure the intervention is relevant and accepted.

Phase 3: Program Management and Evaluation

Monitoring and Evaluation Tools: developed tools for field-level monitoring and conduct real-time evaluations to enable responsive adaptation

Data Collection: Collect accurate and timely data at every level of the program.

Evaluate Effectiveness: Assess the effectiveness of interventions when scaled up in real-world settings using appropriate study designs.

Ensure Sustainability: Focus on the sustainable dissemination of effective interventions and evaluate their continued use and impact.

Epidemic appraisal and local mapping to Inform Interventions

SDOH Data

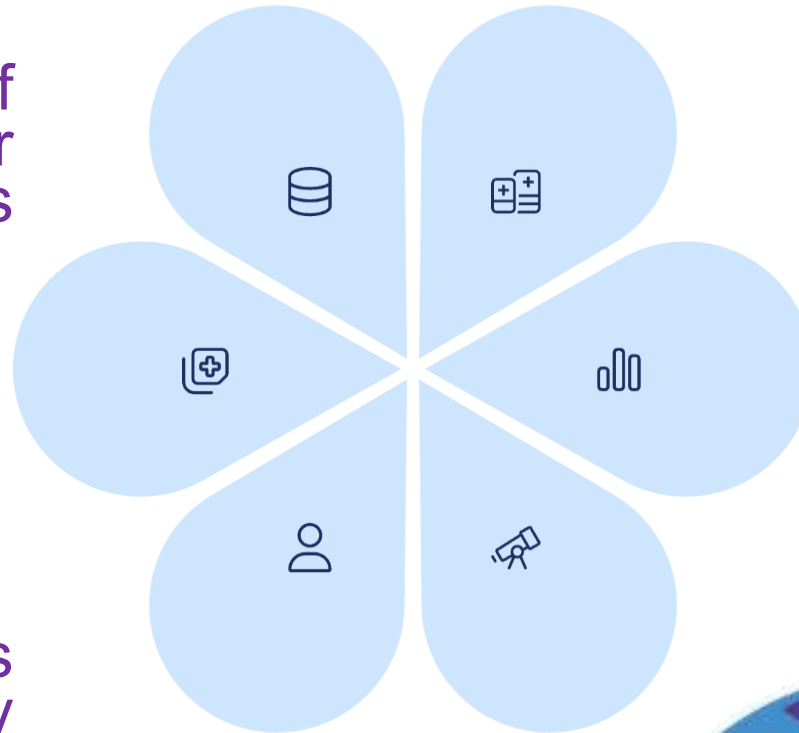
Social determinants of health indicators for communities

Hospital STI Outcomes

Complications and sequelae of untreated infections

Behavioral

Interviews and focus groups mobility relationships, access to care



Health Service Data

Testing rates, treatment times, and service delivery metrics

Notifiable Diseases Data

Regional and population-specific STI notification trends

Genomics Data

NG/Syphilis strain characterization and transmission networks





Individual

- Nudges
- condoms

Community level (access)

- Regional Health promotion campaign
- Community Education

Health Services (management)

- Staff training
- Clinician nudges
- CQI/ATLAS
- Targets
- Point of care

Structural

- Men's clinics
- Men B Vax
- Model of care- longer clinic hours

Study Outcomes

Primary Outcomes:

Decrease in STI prevalence

CT/NG, Syphilis, TV (NT only) by
intervention sites

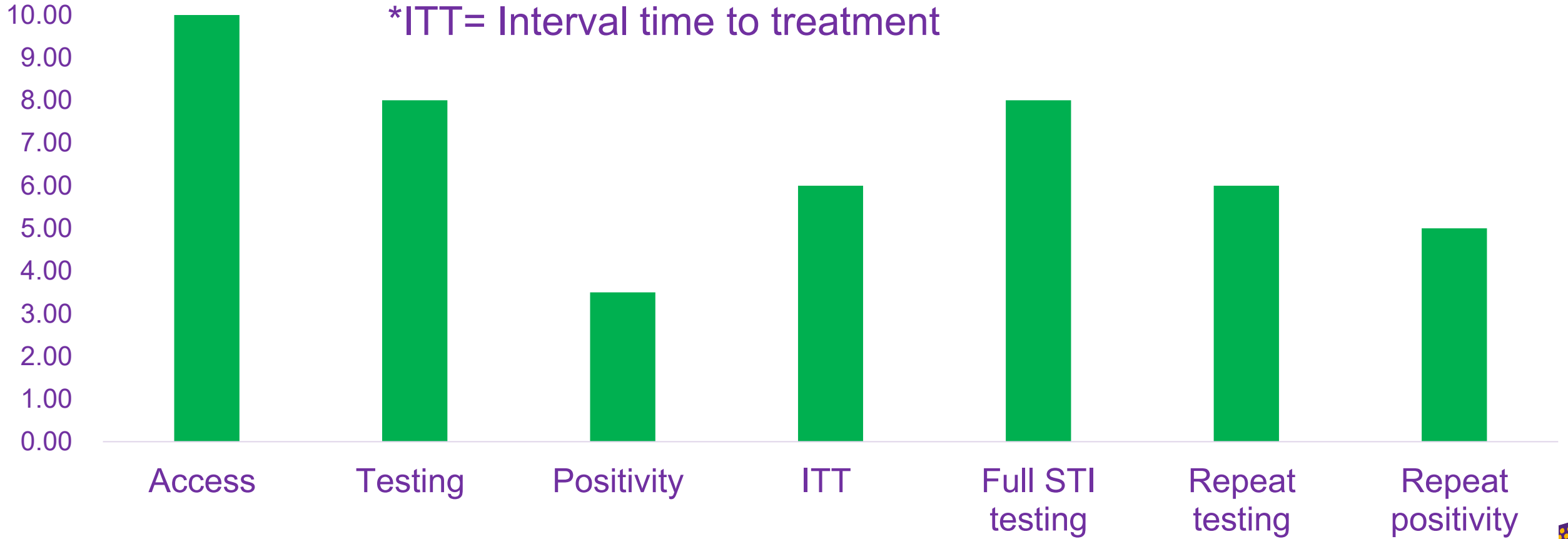
- Region and community level,
Aboriginal status
- Age groups: 15-19, 20-24, 25-29
- Reproductive age group (15-44) for
females

Secondary Outcomes:

- STI Cascade of Care regionally
and at health service level



Secondary Outcome: Improved testing and management STI Cascade of Care



Process Outcomes

	What	How
<i>Reach</i>	Attendance and participation rates at clinics and intervention sites	Measured monthly via clinic attendance data
<i>Dose Delivered vs. Dose Received</i>	Documentation of which interventions were delivered, when, and for how long	Attendance logs, training registers, service delivery adaptations (e.g. extended hours)
<i>Fidelity</i>	Quality and consistency of intervention implementation	Coordinator feedback, audits, service-level reporting
<i>Sustainability</i>	Feasibility of maintaining interventions post-trial	Stakeholder engagement and ongoing resourcing



1

2020-2023

Worked with same communities for four years (interrupted by C-19)
Relationship building, baseline data collection, infrastructure
intervention design

2

2026

Formal intervention phases starting from 2nd quarter 2026
Will run multi-level interventions for next 2 years

3

2027-2029

Finalize data collation and analysis
Publication of findings and knowledge translation

This timeline reflects the long-term commitment required for meaningful community engagement and sustainable health improvements in Indigenous communities.

A new approach to STI control in o communities

- Essentially, we have adopted a Program Science approach to addressing STI epidemics in three regions in Australia
- Program science best suited where inequity exists
- Involves appraisal of local epidemics, understanding where gaps exist in this case in STI control, and then planning and selecting interventions, that are best fit for population, at the right dose and at the right time
- Enables Communities to lead the way
- Implementing and evaluating

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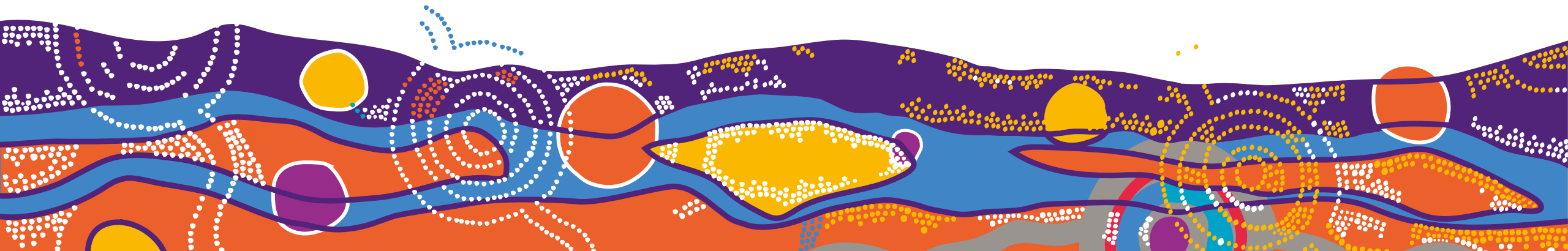
Exploring the effectiveness of multilevel interventions to control STIs and HIV in global populations.

Preliminary findings of a systematic review

Helena King
PhD Scholar

Research Aim

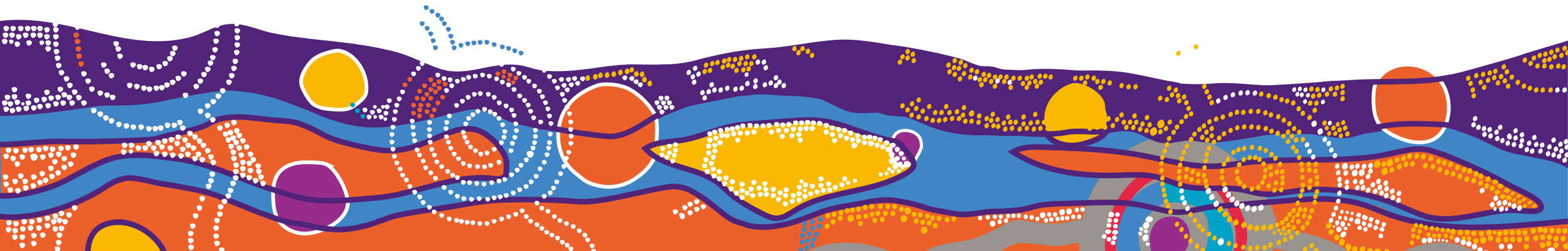
To explore whether multilevel interventions are effective in controlling sexually transmissible infections and HIV in global populations.



Search strategy

- PRISMA checklist and guidelines.
- Search terms piloted.
- Registered in PROSPERO.
- 5 databases searched
- Results exported into Covidence.*
- Reference search (to do).

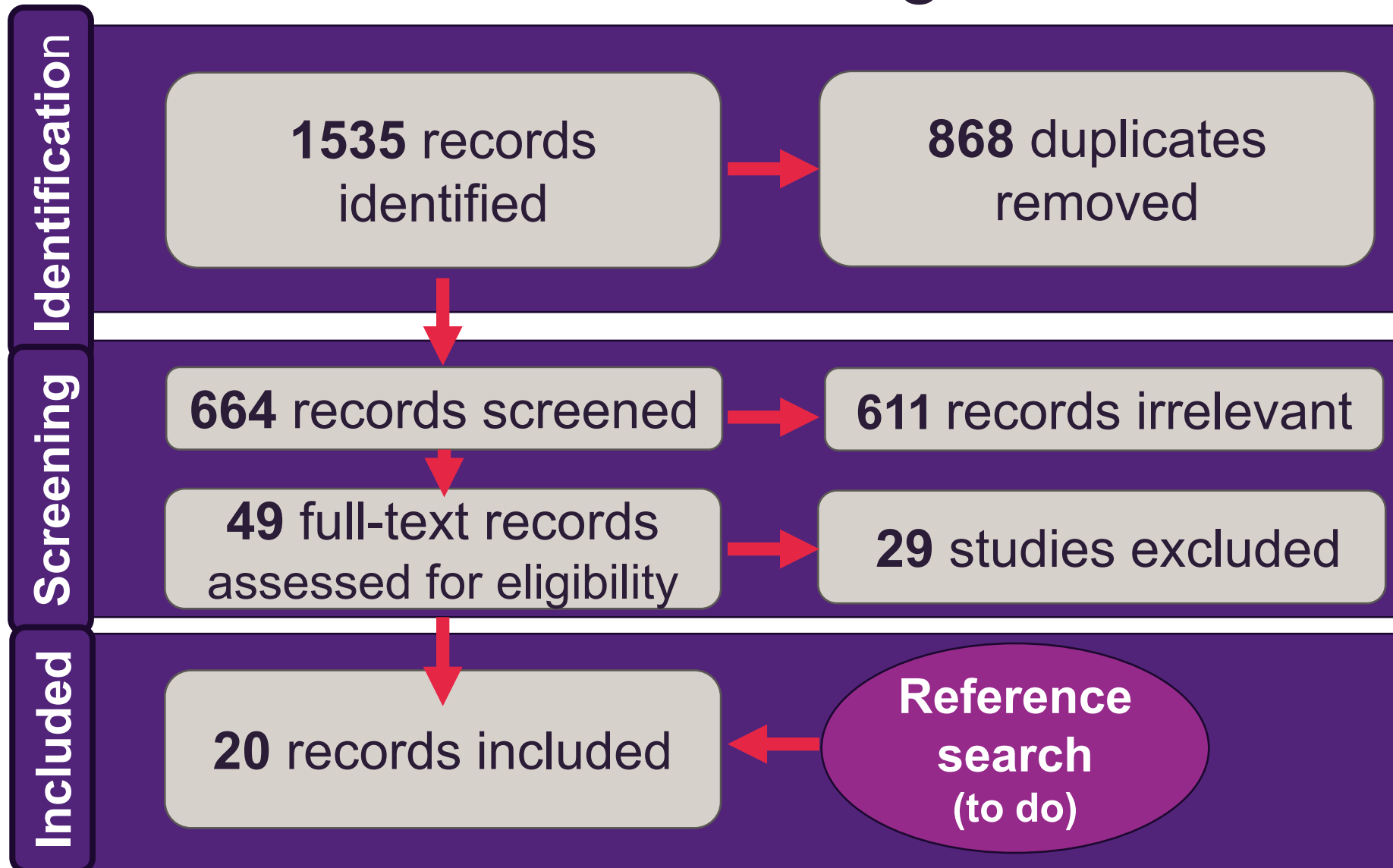
*Veritas Health Innovation, Melbourne



PICOS method

	Inclusion Criteria	Exclusion Criteria
Population	Human subjects, global, STIs, HIV, any language and age	HCV
Intervention	MLI at two or more distinct levels	Single intervention, vaccination
Comparison	Before and after, usual care	
Outcomes	STI/HIV related outcome measures	
Study design	RCTs, quasi-experimental, observational, non-randomised with a control group	Non-empirical, case studies, protocols, clinical trials, grey literature

PRISMA flow diagram



Research Gap

- Studies geographically diverse- none in Australia.
- Only 1 study focused exclusively on STIs, 5 STIs/HIV, rest HIV.
- Participant characteristics varied.
- No study reported on CANZUS Indigenous populations.
- All studies implemented more than 3 levels of intervention.
- Most studies contained an individual level intervention.
- Statistically significant positive outcomes reported in 70% of multilevel studies- yet to analyse data quality.

What's next?

- Risk of Bias, GRADE assessment.
- Narrative synthesis of findings.
- Findings will optimise implementation and evaluation of the larger project.
- Results inform research yarns with health services and community.
- Watch out for publication of final results!

Acknowledgements

Advisory Team: Professor James Ward and A/Professor Judith Dean

Special thanks to Dr. Stephen Harfield

Research team: Dr. Aletha Ward, Chantelle Coppens, Robert Palm, Jane Wallace, Jethro Romer, Campbell May.

With thanks to Dr. James Fowler, Dr. Saira Sanjida, Dr. Stuart Leske, A/Prof Alex King.



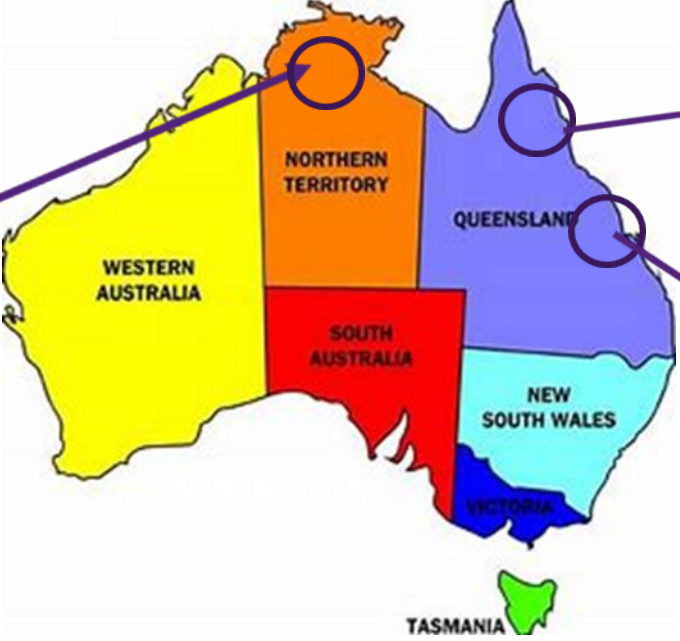
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Community Led Co-Design in Practice: An Example of Best Practice

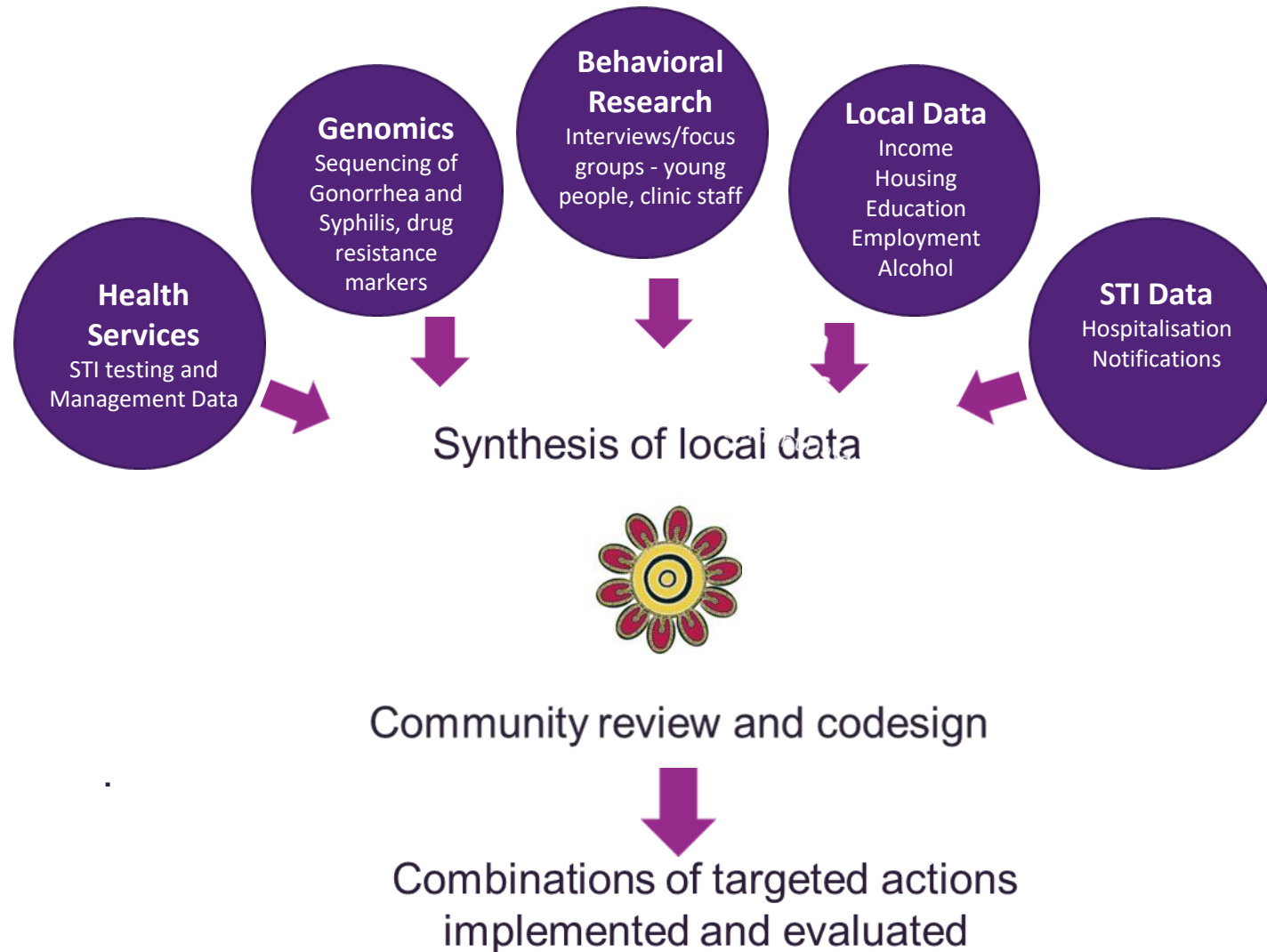
Jethro Romer
Campbell May
Chantelle Coppens



ENDING STI & IMPACT STI

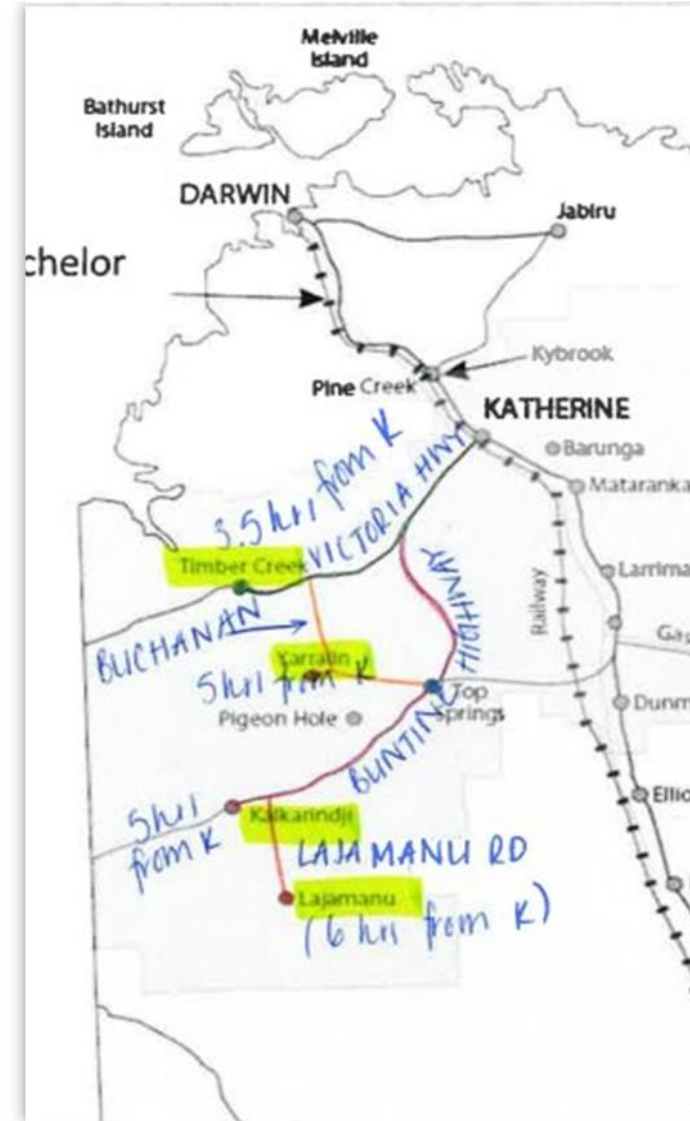


Study Overview



Katherine West Health Board

- (KWHB) – Aboriginal Community Controlled Health Organisation
- 162,000 square kilometre (about the size of Tasmania)
- 7 remote communities + over 60 outstations
- Governed by elected Board of Directors – ensures community control



The Synergy Project

- Synergy Project
- Name chosen by KWHB Board
- Board and advisors guide how new projects are introduced and how they are known in community.





Considerations

- Weekly plan can change quickly
- Travel – long distances, tough roads, and two days of travel.
- Limited Infrastructure – reception is not always a given
- Language – “no hard Kardiya words”
- Men's and Women's business
- Weather – wet season restricts access, maintaining relationships over months out of community.

Engagement Structure

- KWHB Board Directors
- Nominated leaders and the voice for community-control in their communities
- Director of Community Engagement
- Staff – esp. local staff
- Community members





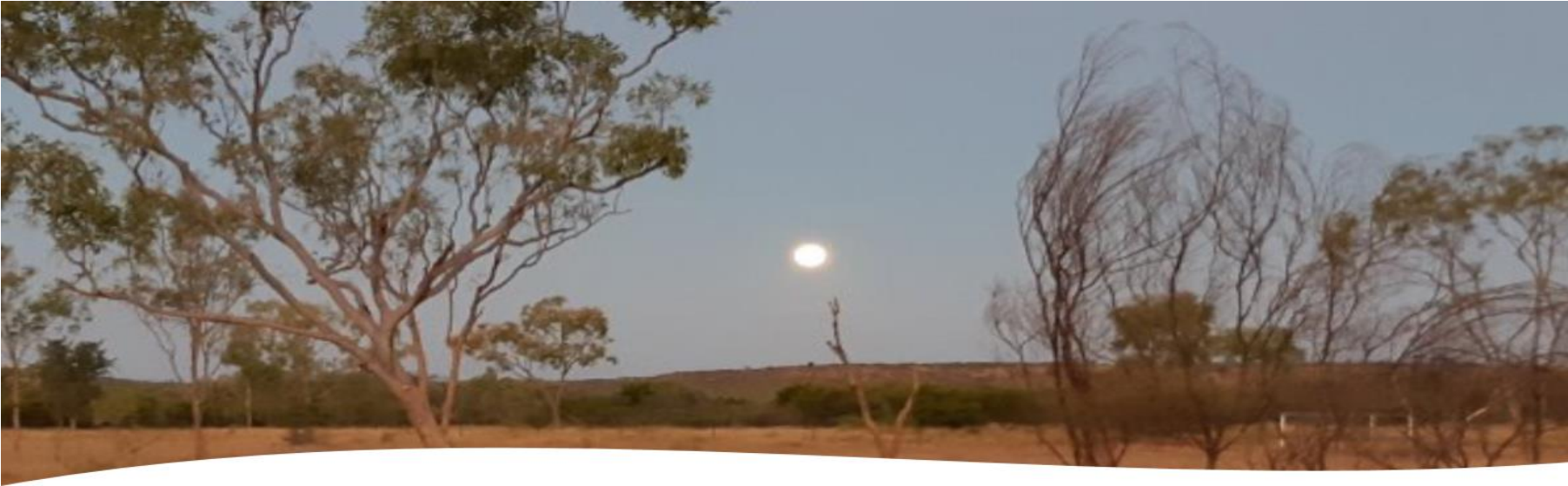
Engagement

- Take the time to build strong community relationships
- More listening, less talking
- Being reliable, being honest
- Learning the “right way” as determined by the community
- Encouraging self-determination within Synergy (but not over-promising)
- Figuring out the community plan for Synergy and then helping them realise it



Advisors Ideas

- Men and women's Health Fourm days
- Self-care kits handed to encourage screening/testing
- Later clinic hours for after work and discreet visits for men and women seperately
- Educational resources
- Separate waiting areas for men and women



What we're Doing Now

- Finalising community initiative stage
- Key priority: education resources using language that is clear for community
- Clinic guide: first clinic visits can feel unknown and intimidating.
- Advisors designing wording and stories for animations and comics
- Resources with input from men and women from more communities in the region

Central Queensland



Ending
STIS



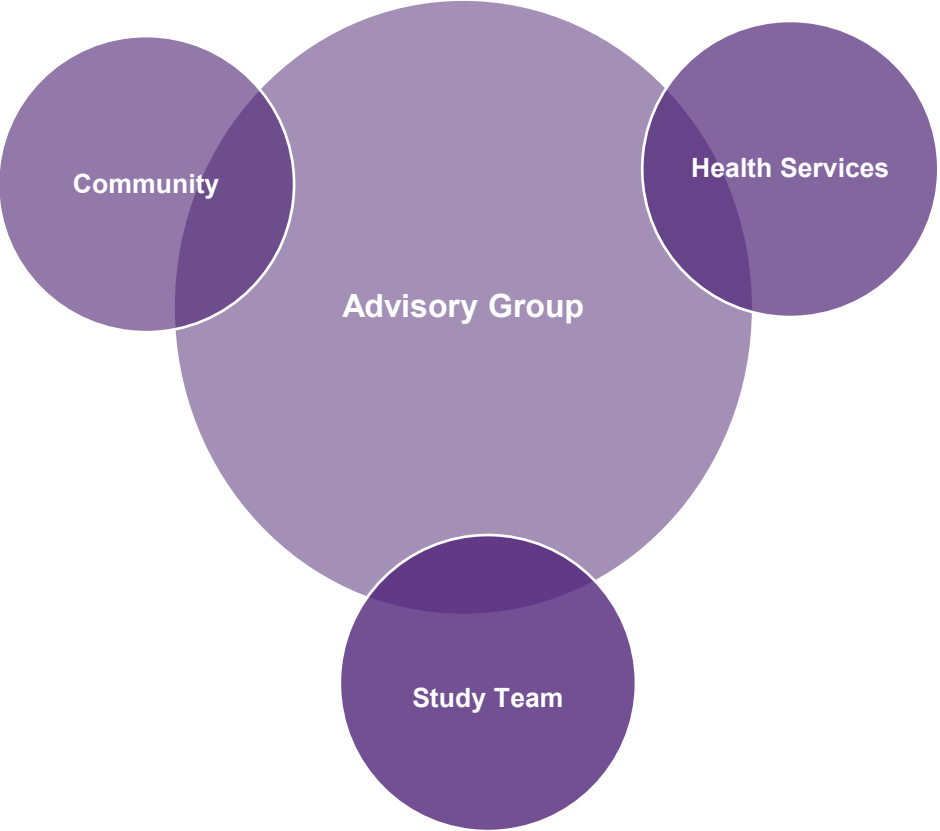
A framework for transformation



Ending
STIs



Co-Design Process



Partnerships for Change



Moving Forward Together

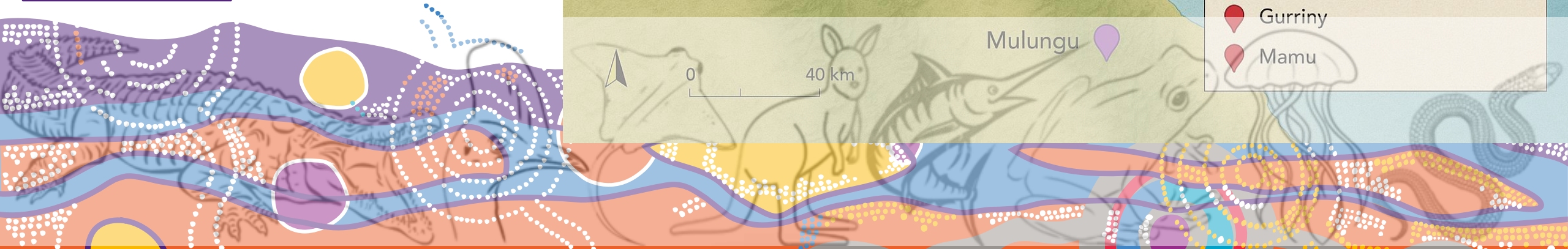
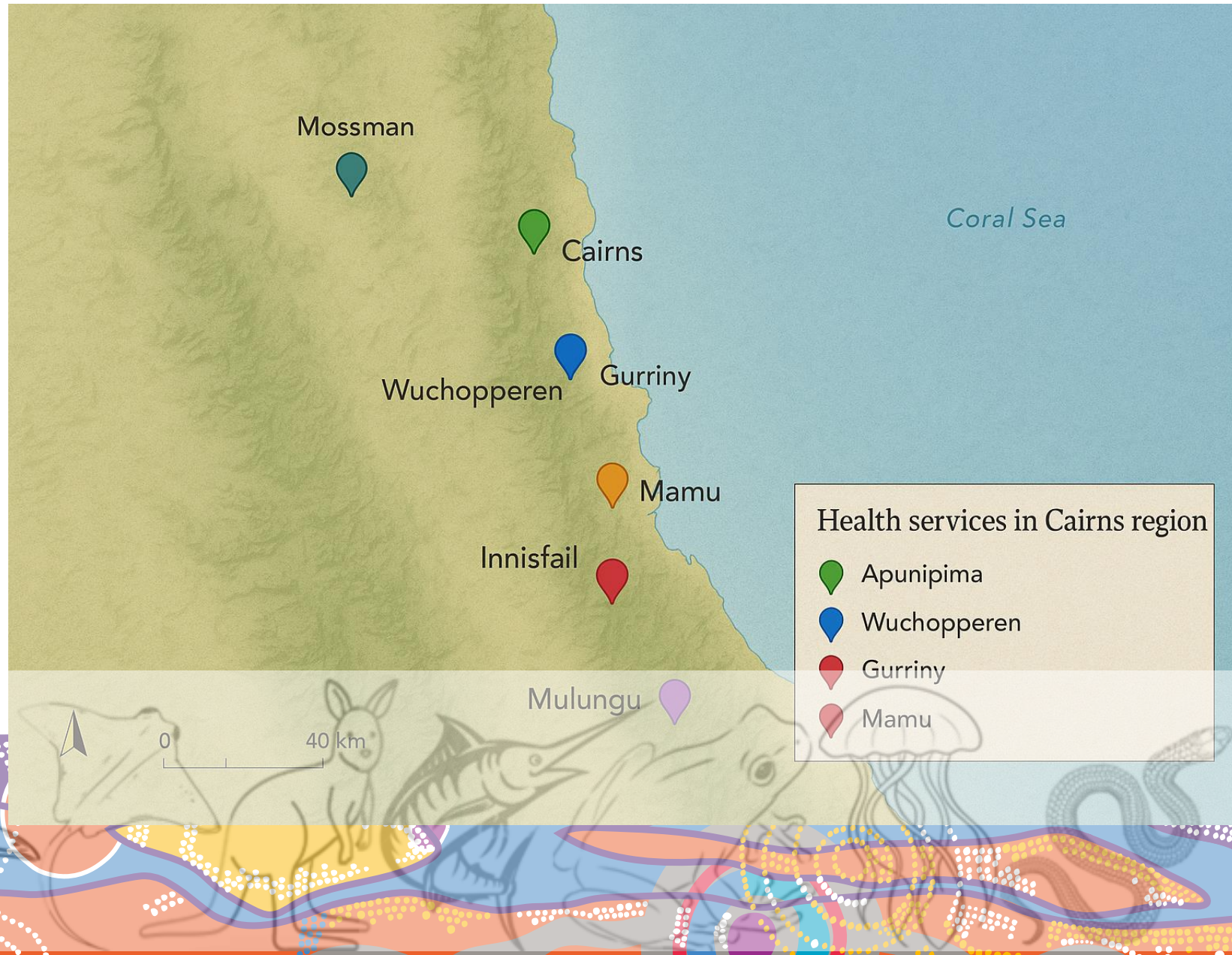


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Cairns and Hinterland Region Far North Queensland



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The artwork is a representation of the Aboriginal and Torres Strait Islander communities in the Cairns and Hinterland catchment area and their involvement in the IMPACT-STI research project.

The circles that resemble cells symbolise the community groups and the DNA strand structures connecting them show the networking them. The whole DNA and cell feature in the foreground depicts the process of using genome sequencing as a tool to track the spread of certain strains of STIs. The background showcases the different landscapes that the people of the catchment area identify with.

This connection between, health, people and Country highlights the importance placed on taking holistic approaches to Indigenous health, relationships and research.





Yarning about the
**IMPACT-STI
STUDY**

Location/Region

Cairns City & Coastal Regions

Tully Region

Tully Gorge to Ravenshoe

Northern Tablelands (Mareeba)

Traditional Owner Group(s)

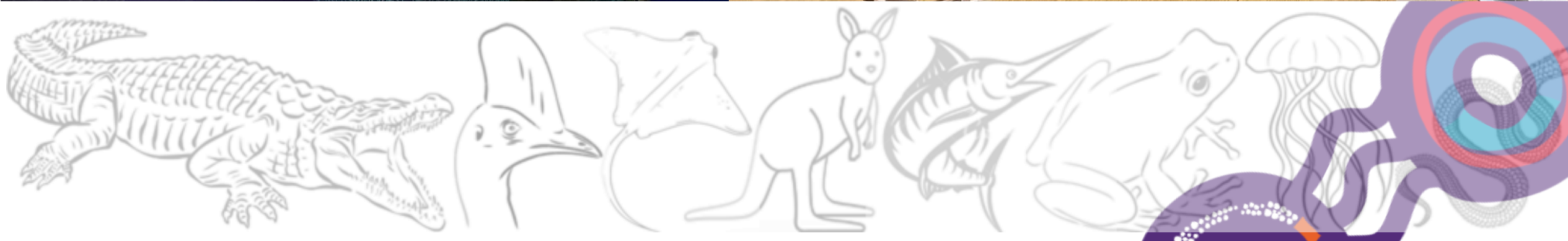
Dawul Wuru (Yirrganydji), Djabugay, Gunggandji, Yidinji (multiple clans)

Gulngay

Jirrbal (Wabubadda)

Djabugay, Muluridji





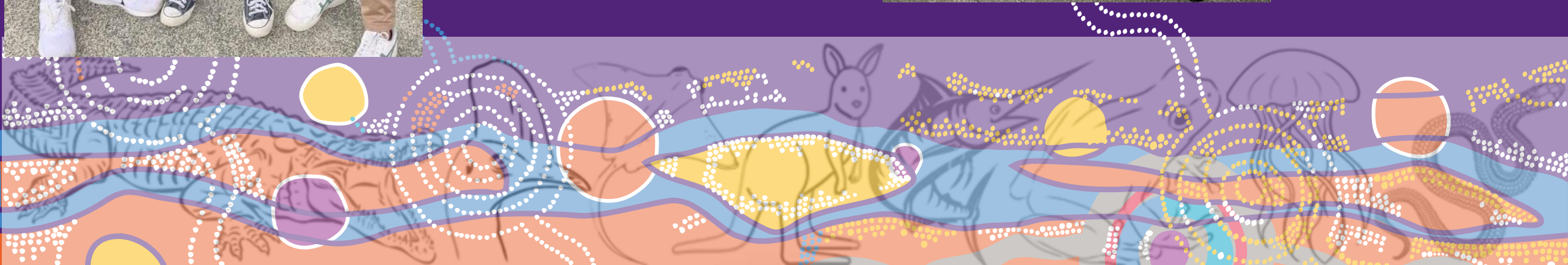
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AUSTRALIA









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Conclusion



Tailored approach

Time and Flexibility

Co-Design



Professor James Ward
UQ Poche Centre for Indigenous Health

Joanne Bryant
School of Social Sciences, UNSW Sydney

Samantha Webster
Public and Environmental Health Reference Laboratory
(PEHRL), Queensland Health



Epidemic appraisal + collating determinants and local mapping to Inform Intervention

SDOH Data

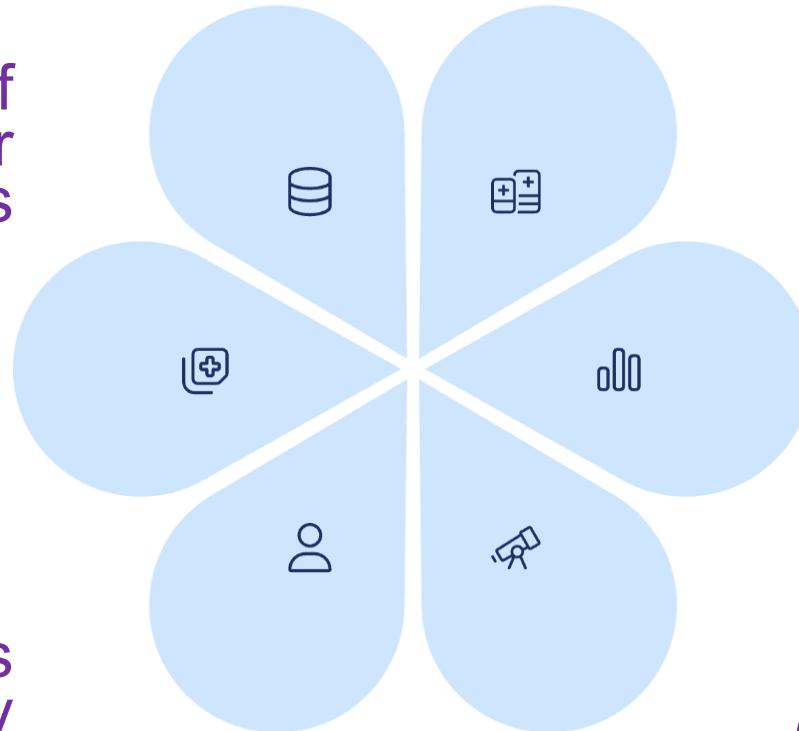
Social determinants of
health indicators for
communities

Hospital STI Outcomes

Complications and
sequelae of untreated
infections

Behavioral

Interviews and focus
groups mobility
relationships, access to
care



Health Service Data

Testing rates, treatment
times, and service
delivery metrics

Notifiable Diseases Data

Regional and
population-specific STI
notification trends

Genomics Data

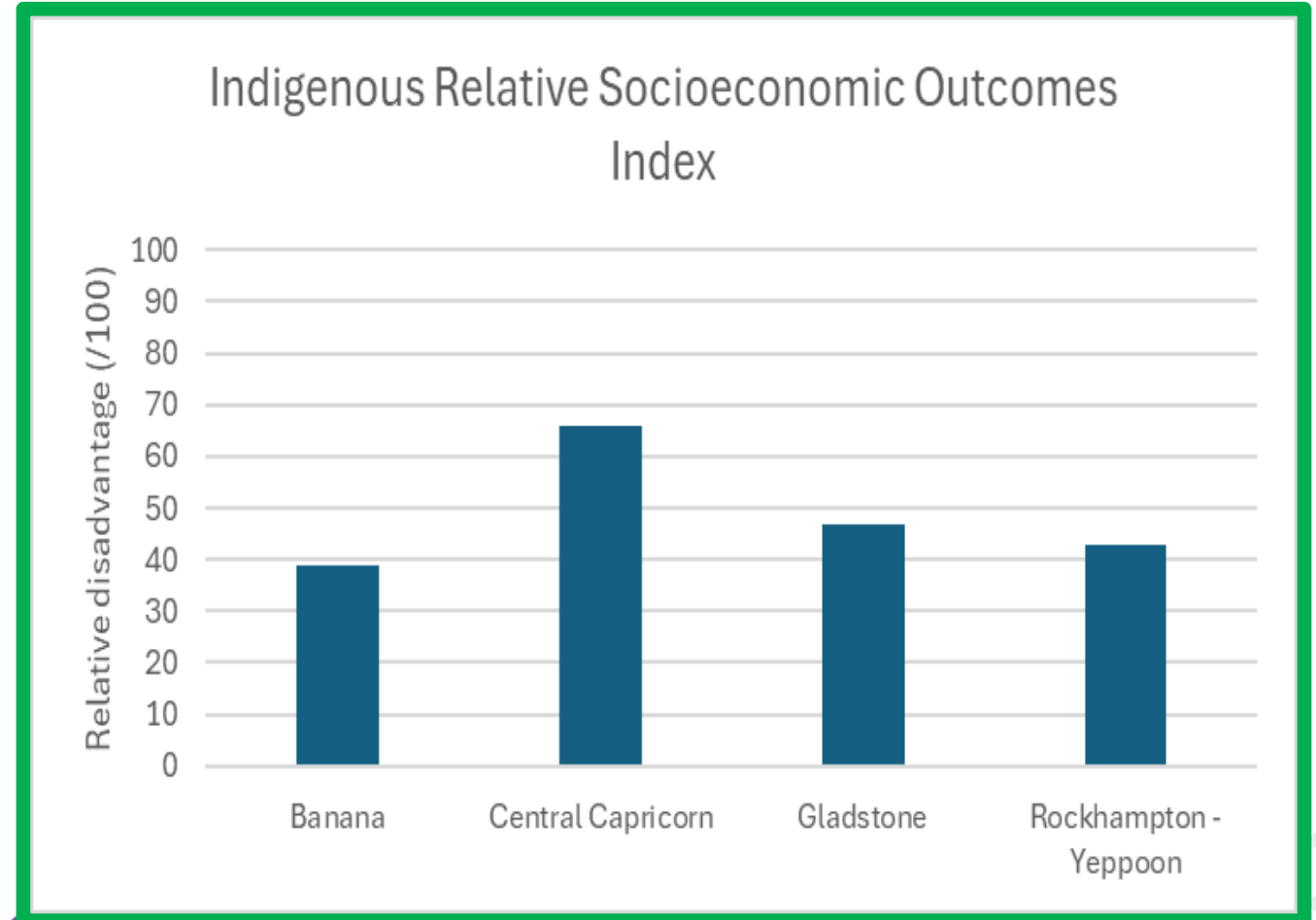
NG/Syphilis strain
characterization and
transmission networks



Mapped regionally

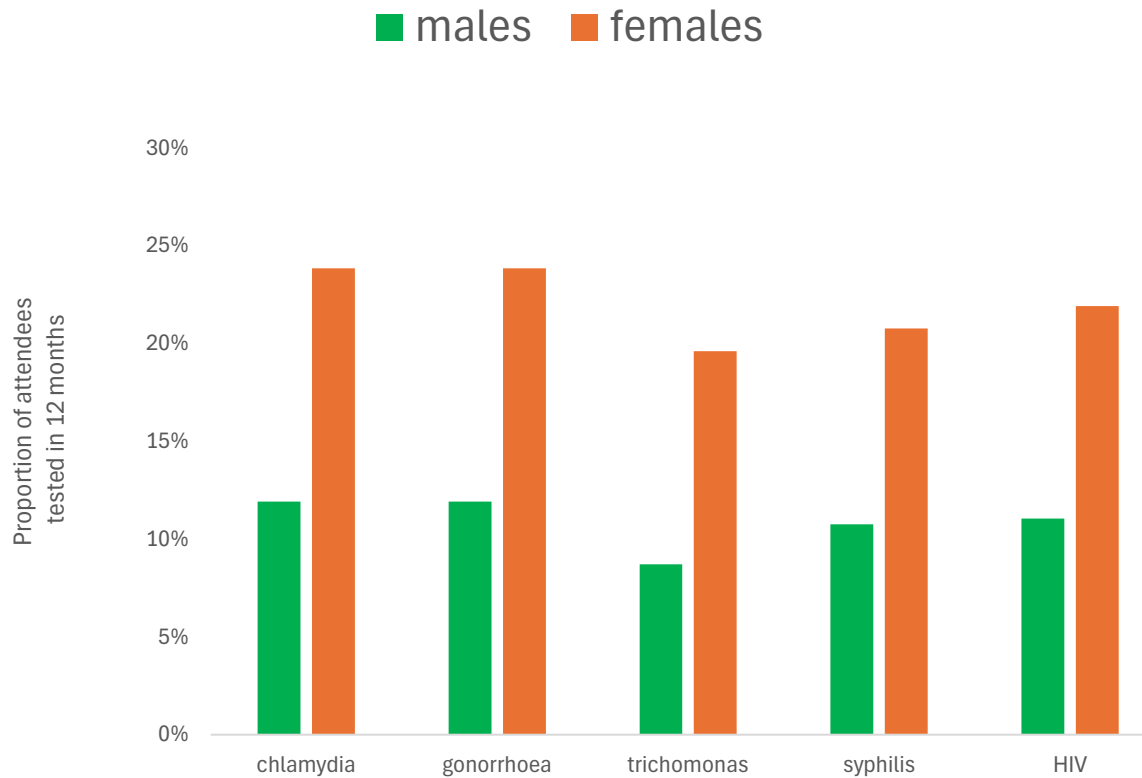
- The conditions in which people live and work affect their health
- **Protective of health**
- connection to language and culture
- family and community
- connection to country

- **Risk to health**
- low income
- poor housing
- unemployment
- limited education
- racism and discrimination
- lack of access to healthcare



Testing for STIs in health service clients aged 15-29 years derived from EMR

Testing coverage by sex (Jul 2023-Jun 2024)



Trichomonas

- 7,494 tests for trichomonas were completed during 1 July 2023–31 December 2023, of which 4% were positive (n=307).
- In the previous 12 months, **January 2023–December 2023**, of the 8,402 clients tested at least once for trichomonas, 451 were positive at least once, giving a 12-month period positivity rate of 5%. Males had a 12-month period positivity rate of 2% (n = 71) and females 7% (n = 380).

Syphilis

- 8,053 tests for syphilis were completed during 1 July 2023–31 December 2023, of which 7% were reactive (n=595).
- In the previous 12 months, **January 2023–December 2023**, of the 9,036 clients tested at least once for syphilis, 792 were reactive at least once, giving a 12-month period reactivity rate of 9%. Males had a 12-month period reactivity rate of 10% (n = 332) and females 8% (n = 460).

Figure 7.3.7 describes testing and positivity by age for each of the four STIs addressed in this section.

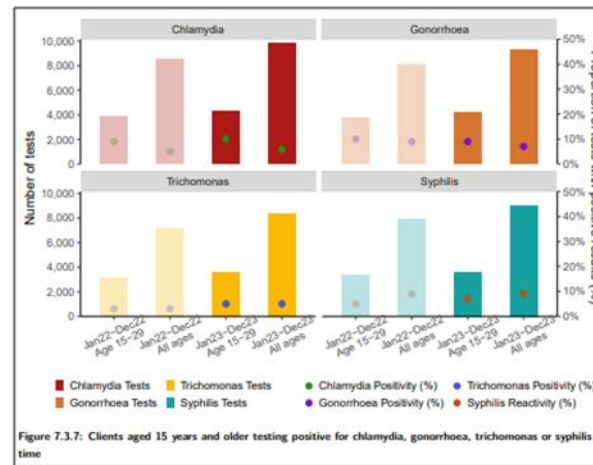
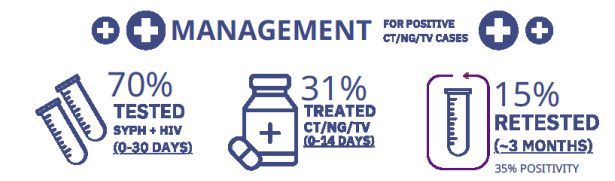
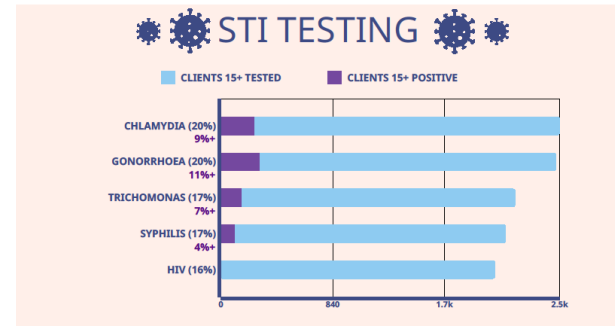
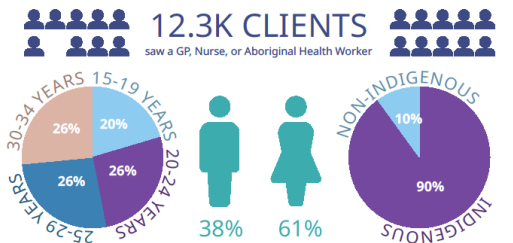


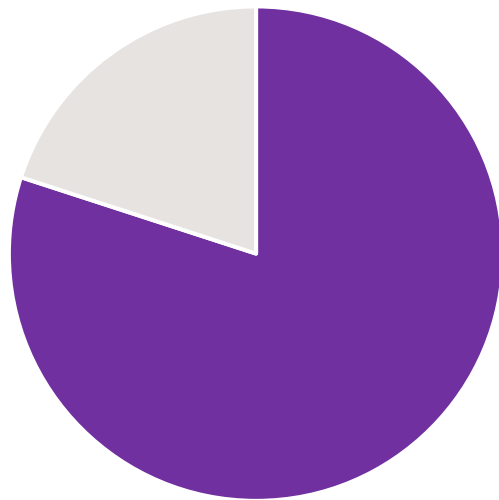
Figure 7.3.7: Clients aged 15 years and older testing positive for chlamydia, gonorrhoea, trichomonas or syphilis by time

SEXUALLY TRANSMISSIBLE INFECTIONS MANAGEMENT FOR CLIENTS AGED 15-34 YEARS 2023 (JAN-JUNE) ATLAS



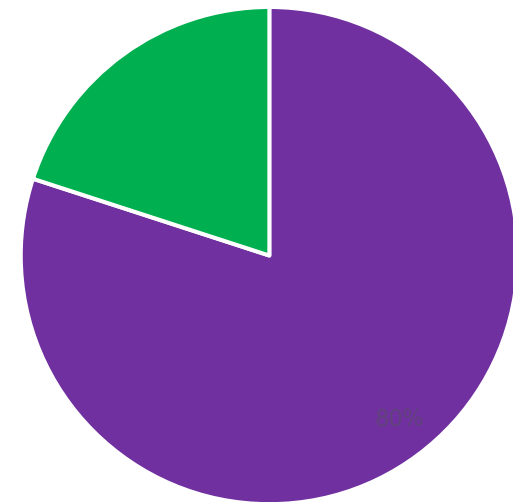
PID, ectopic pregnancies in Aboriginal & Torres Strait Islander people aged 15-29 years (2012-2022)

Ectopic Pregnancies by
Indigenous Status 2012 -2022



- Aboriginal and Torres Strait Islander
- Non Indigenous

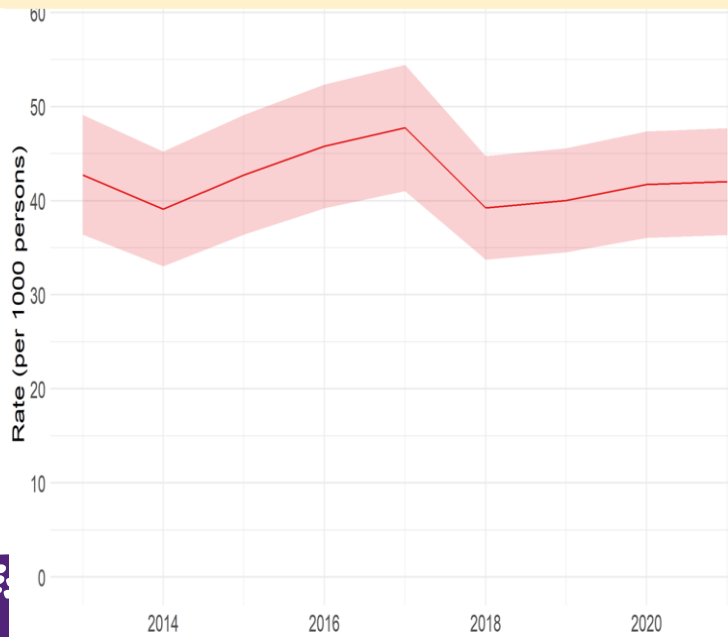
PID notifications by Indigenous
status 2012-2022



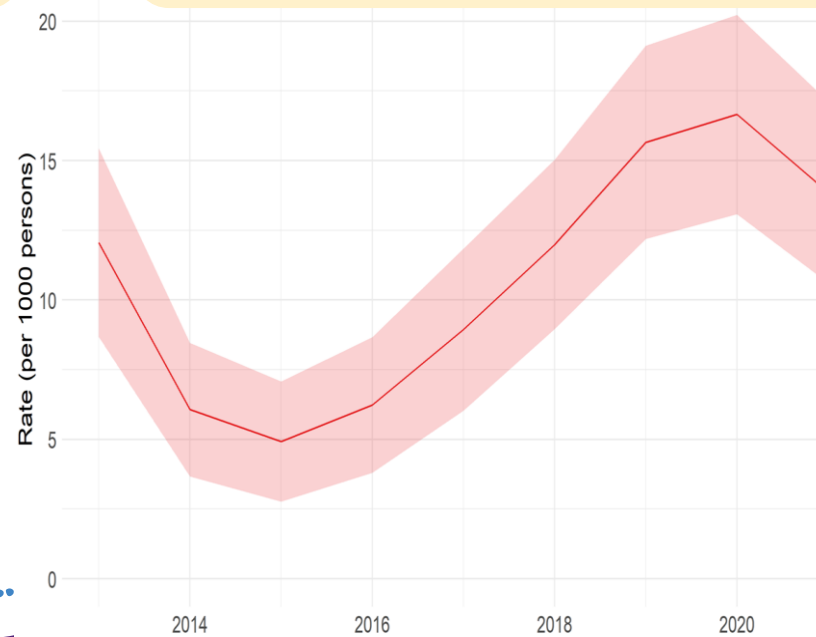
- Aboriginal and Torres Strait Islander
- Non Indigenous

STI notification rates in each region by Aboriginal and Torres Strait Islander status, aged 15-29 years, 2012-2022

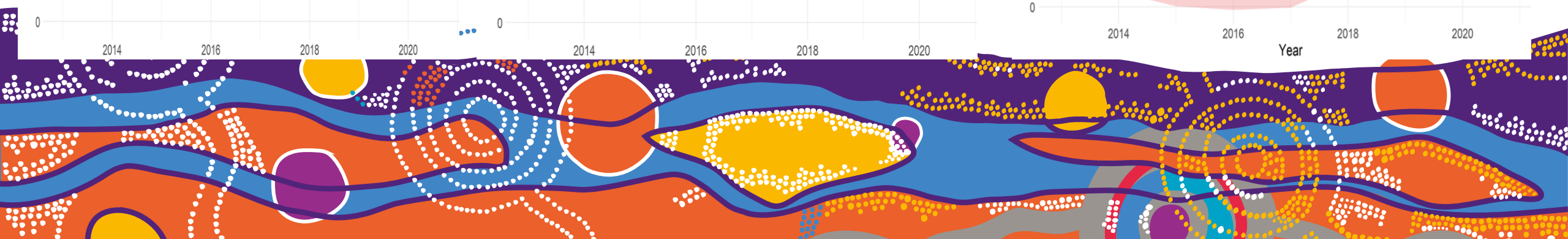
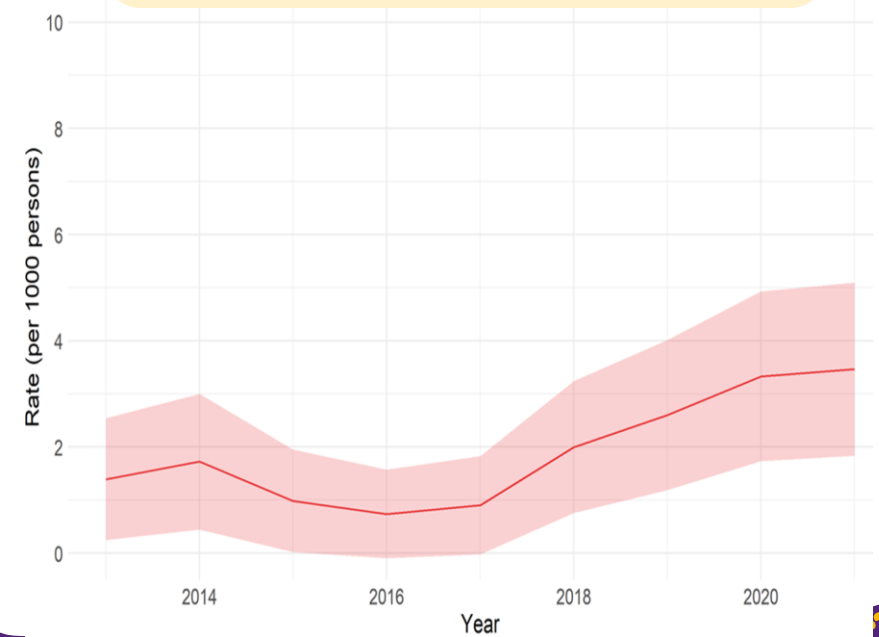
Chlamydia



Gonorrhoea

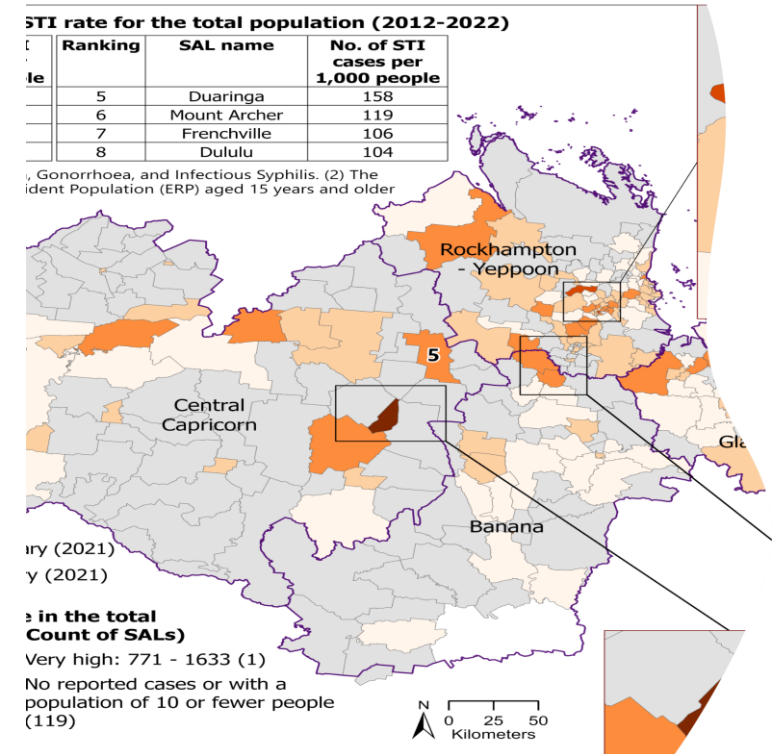


Syphilis



Mapped most of this data at the local level within each region to inform interventions

To help shape interventions
Guide potency
Right areas
Right populations
Provided to community engagement groups for interpretation and local contextual information



Poche Centre
for Indigenous Health

Social research to inform optimal interventions

Joanne Bryant
School of Social Sciences
UNSW Sydney



Team

UNSW, Social Sciences

Joanne Bryant

Kacey Martin

Kye Bancroft-Gardner

Max Hopwood

University of Queensland

Salenna Elliot

Jethro Romer

Rani Lawler

Aims

Gain foundational information about social factors that underlie the STI epidemics in Central Queensland and Katherine West regions.

- What are local values and beliefs among Aboriginal young people about STIs, sex and relationships?
- How can sexual health services better meet the needs of Aboriginal young people? What are staff and young people's perspectives about sexual health services?

Method...

Study 1: Local values and beliefs

- Peer researcher method: 6-8 community researchers (Bell et al 2021)
- 2 days training in research ethics, qualitative interviewing
- Third person interviewing (eg 'young people like us')

Study 2: Sexual health service provision

- Ethnographic participant observation within clinic settings: clinic space, arrangements and interactions (Browne et al 2018)
- Interviews with clinic staff and clients

Method...

Study 1: Local values and beliefs

- Peer researcher method: 6-8 community researchers (Bell et al 2021)
- 2 days training in research ethics, qualitative interviewing
- Third person interviewing (eg 'young people like us')

Central Queensland:
N= 6 peer researchers
N=26 young people
(Supplement with researcher-led interviews and focus groups)

Katherine West:
Rain, access, timeline

Study 2: Sexual health service provision

- Ethnographic participant observation within clinic settings: clinic space, arrangements and interactions (Browne et al 2018)
- Interviews with clinic staff and clients

Method...

Study 1: Local values and beliefs

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Study 2: Sexual health service provision

- Ethnographic participant observation within clinic settings: clinic space, arrangements and interactions (Browne et al 2018)
- Interviews with clinic staff and patients

Central Queensland n=7 staff

Katherine West n=6 staff

Supplement with two scoping reviews

Review of qualitative literature in remote Aboriginal communities in Australia: Attitudes, values about sex and relationships

Robyn Horwitz, Joanne Bryant

Centre for Social Research in Health
School of Social Sciences
UNSW Sydney
NSW 2052
Australia

June 2024



Enhancing Healthcare Services for Indigenous populations: Review of Observational Research in Clinic Settings

Kacey Martin, Joanne Bryant

School of Social Sciences,
UNSW Sydney
NSW 2052
Australia

June 2024



Values and beliefs: Silence

- Avoid discussion about STIs, sex and relationships
- only the safe and fun aspects
- Seen as apathy or indifference about STIs

Most black fellas won't [talk about sex] but white fellas do. Justin, M, 22

I think the fun things are more spoken about than like the embarrassing things or the bad things. Like, you know, if you're sort of in an abusive relationship ... that's not a conversation that you sort of have with people and I think that's definitely not spoken about. Leonie, F, 19

That's never a subject that [young people talk about]." – Max, M, 24

I feel like they don't really worry about it within our communities. You know, wouldn't think that they will catch it until it does happen to them. Kylie, F, 30

Values and beliefs: Shame

- Avoidance driven by shame
- Shame is gendered
- Impacts: condom access, clinic visits
- Racist stereotypes have deep impact on communities

*“Our parents and our Elders - that’s the people we don’t want to discuss that topic about... Embarrassment. That’s the number one reason why I wouldn’t talk to my parents about sex. **I’d be too shamed about that stuff.**” Max, M, 24*

“I don't think they will go into the shops and buy that directly for themselves because of them being shamed kind of thing.” – Phoebe, F, 24

It’s never been a super big deal in our family, like we’ve never really had issues in shame and being shameful about stuff.” – Leonie, F, 19

*“I reckon people get shame because they don’t want to be seen going into the clinics... **There are heaps of reasons, but yeah, it’s mostly shame.**” – Lachlan, M, 21*

Values and beliefs: young people want to talk about sex

- improve sexual health knowledge
- build capacity to communicate
- Whole of family, whole of community responsibility

*"I reckon **encourage more with parents [to] talk to their kids**, educate them more and not be too embarrassed to go talk to your kids about safe sex. Yeah, I reckon educate the parents more. You know, sex is not a terrible thing. It's bound to happen...Delilah, F, 25*

*I think [we need to] get the families involved because I think a lot of parents might be ignorant to what their kids are doing. So, **somehow raising the attention to families like as a collective**. So, like parents could be, "Oh, yeah. Maybe we should have a talk with them about this," for example. Rose, F, 20*

Values and beliefs: what else did we ask?

- Who young people talk to about sex: friends; same-sex friends; not parents or other adults
- What counts as a good partner and relationship: love, trust, honesty, commitment, boundaries, consent, privacy
- Main risks and worries: pregnancy, gossip, reputation, cheating partners, abuse, coercion

Sexual health services: Young people's preferences

- Don't know
- Preference for Aboriginal community-controlled services
- Specialist sexual health services
- Choice=self-determination

I think [young Indigenous people] just feel more safe around their own people. We've all been shamed and we all feel that similar cultural thing. I know some people have had negative experiences of not being understood, just not feeling as safe and comfortable in like a normal GP setting..” – Phoebe, F, 24

They are a [sexual] health place in CQ. They came to school multiple times in my senior year and they told us that you can come in for free. I know when they said that, a lot of the seniors went. And there wasn't really a stigma, there was no shame around it.” – Kristie, F, 18

Sexual health services: Staff views on how to improve

- Extend opening hours
- Provide food
- Accommodate families
- Honour flexibility
- **Aboriginal male clinic staff**
- **Mobile screening**
- **Identify young leaders**

*I think there is a **lack of male staff** in the clinics. So, I think there's a barrier to men accessing the service because they don't want to see women and yeah, the cultural business around that. That definitely is the number one, like for men in particular I feel. (Staff 3)*

Ideas for intervention

1. Community-level education to shift sense of shame
2. Enhance *welcoming* environments
3. Whole of community education: adults, parents, older people
4. Incentivise Aboriginal male staff recruitment and retention

Ending STI - Ideas for Action from the Social Research Theme

Max Hopwood, Joanne Bryant
School of Social Sciences,
UNSW Sydney
NSW 2052
Australia



June 2024

Overview The 'Ideas for Action' presented below are derived from four sources:

1. Interviews conducted with 26 young people (50% female and 50% male) aged 16-25 years from Central Queensland
2. Interviews with 13 sexual health and health promotion workers, comprising eight staff from clinics in Katherine West (Northern Territory) and five staff from Central Queensland clinics
3. Literature Review: *Enhancing healthcare services for Indigenous populations: Review of Observational Research in Clinic Settings*
4. Literature Review: *Review of qualitative literature in remote Aboriginal communities in Australia: Attitudes, values about sex and relationships.*

Findings of the two data sets and the main themes evident in literature reviews were triangulated to identify nine interventions to improve young people's engagement with sexual health services, to reduce experiences of shame around sexual practice and sexual health, and to increase sexual health literacy, and rates of testing and treatment.

Ideas for Action

Structural Cultural

1. Design a campaign to undermine shame and to increase positivity about sex and relationships
2. Develop STI prevention and healthy relationships resources in multiple languages

Clinical

3. Consider additional ways to enhance 'welcoming environments' in clinics
4. Convene youth advisory groups

Community

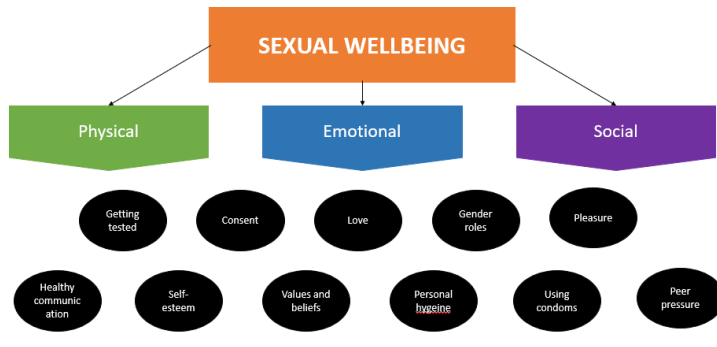
5. Education campaign targeted as adult community members (parents, older relatives and Elders) to update their sexual health knowledge and build their capacities to talk with young people about sex in positive and supportive ways
6. Increase mobile outreach to enhance STI testing and health promotion

Individual

7. Consider peer education and peer support approaches
8. Incentivize Aboriginal male staff and staff retention
9. Provide low-cost incentives to engage young people with health services

Thank you

Activity: Where do these fit?



The ENDING-STIs Project



Lead Researcher:
Professor James Ward (Pitjantjatjara/Nukunu)

Aims:
Reduce STIs and improve sexual health in Central QLD

Approach:
Indigenous-lead
Community control
Community collaboration

Types of Data:
Health service data
Quantitative Surveys
Qualitative Interviews
Observational Research
and more...



Who are you?

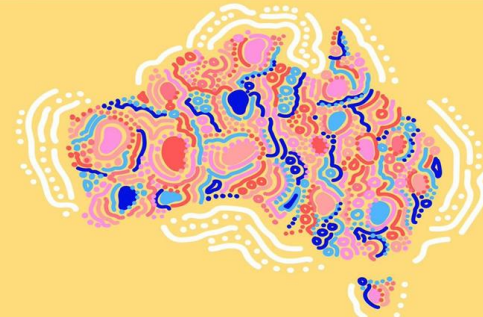
DISCUSS:
What's your name?
How old are you?
What made you want to join the project?

ACTIVITY: TWO TRUTHS, ONE LIE

- Tell us three facts about yourself – two that are true and one that's a lie!
- The group will try and guess the lie.



Acknowledgment of Country



Activity: Final Quiz



Remember:

This is just an activity to help us revise what we've covered

You will score your own quiz, we aren't marking you 😊

Why are community researchers important?

INCLUSION

It is important to include community members in research that is about them.

Your connections to community help to create a safe and positive environment.

CONNECTION



KNOWLEDGE

You have valuable knowledge about your communities and lived experience.

It's an opportunity to build skills, learn about research and get work experience.

OPPORTUNITY



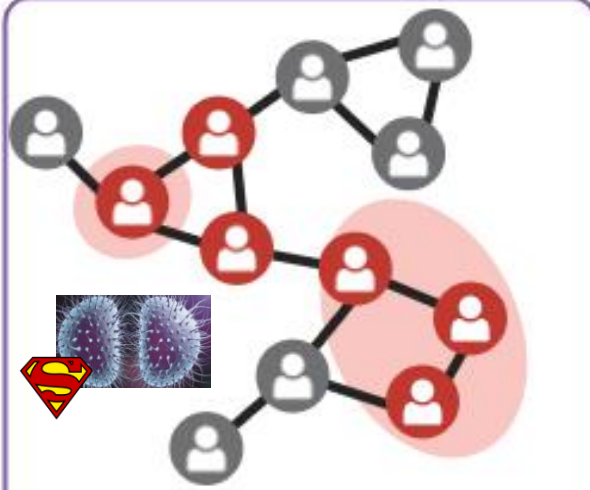
Preliminary genomic data for Impact & Ending

Samantha Webster¹, Francesca Azzato^{2,3}, Mitchell Sullivan¹, Shivani Pasricha², Amy Jennison¹

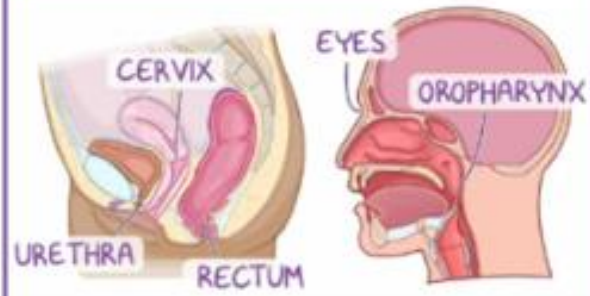
¹ Public and Environmental Health Reference Laboratory (PEHRL), Queensland Health

² Peter Doherty Institute for Infection and Immunity, University of Melbourne

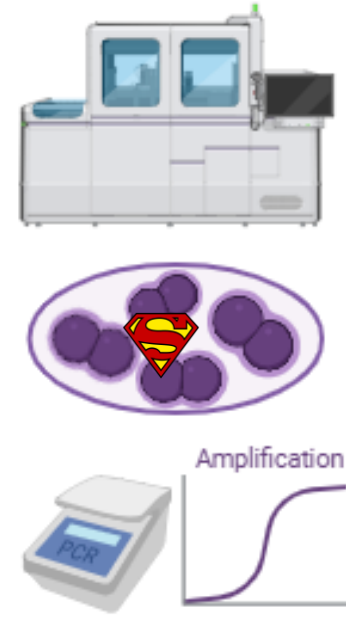
³ Victorian Infectious Diseases Reference Laboratory, Peter Doherty Institute for Infection & Immunity



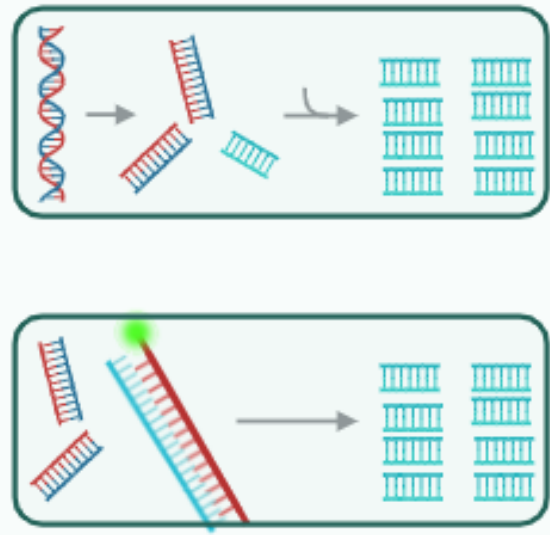
STI Clinic



Local Lab



New Methods



A complex block containing two petri dishes (one with a Superman logo), a circular genome map of *N. gono* with various regions labeled (L1, L2, LCR, E1-E7), and a sequencing machine with a callout showing DNA sequences.

QLD Reference Lab

Reporting

SPECIMEN: Swab Rectal
 Organism 1: Neisseria gonorrhoeae
 Antibiotic: 1. Penicillin
 2. Ceftriaxone
 3. Ciprofloxacin
 4. Azithromycin



National Notifiable Diseases Surveillance System



Scheme

Basis

Genes

MLST

Multi-Locus Sequence Typing

housekeeping genes

7

NG-MAST

Multi-Antigen Sequence Typing

variable gene regions in outer membrane proteins

2

rplF

species determining gene

1

NG-STAR

Sequence Typing for Antimicrobial Resistance

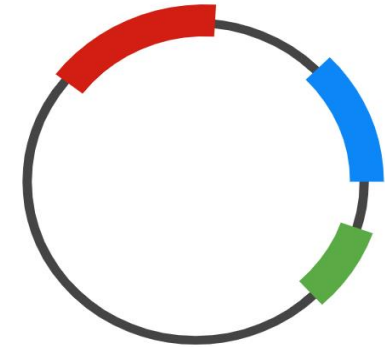
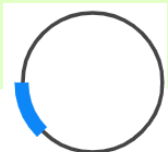
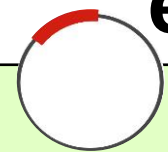
AMR genes

7

PPNG

Plasmid presence

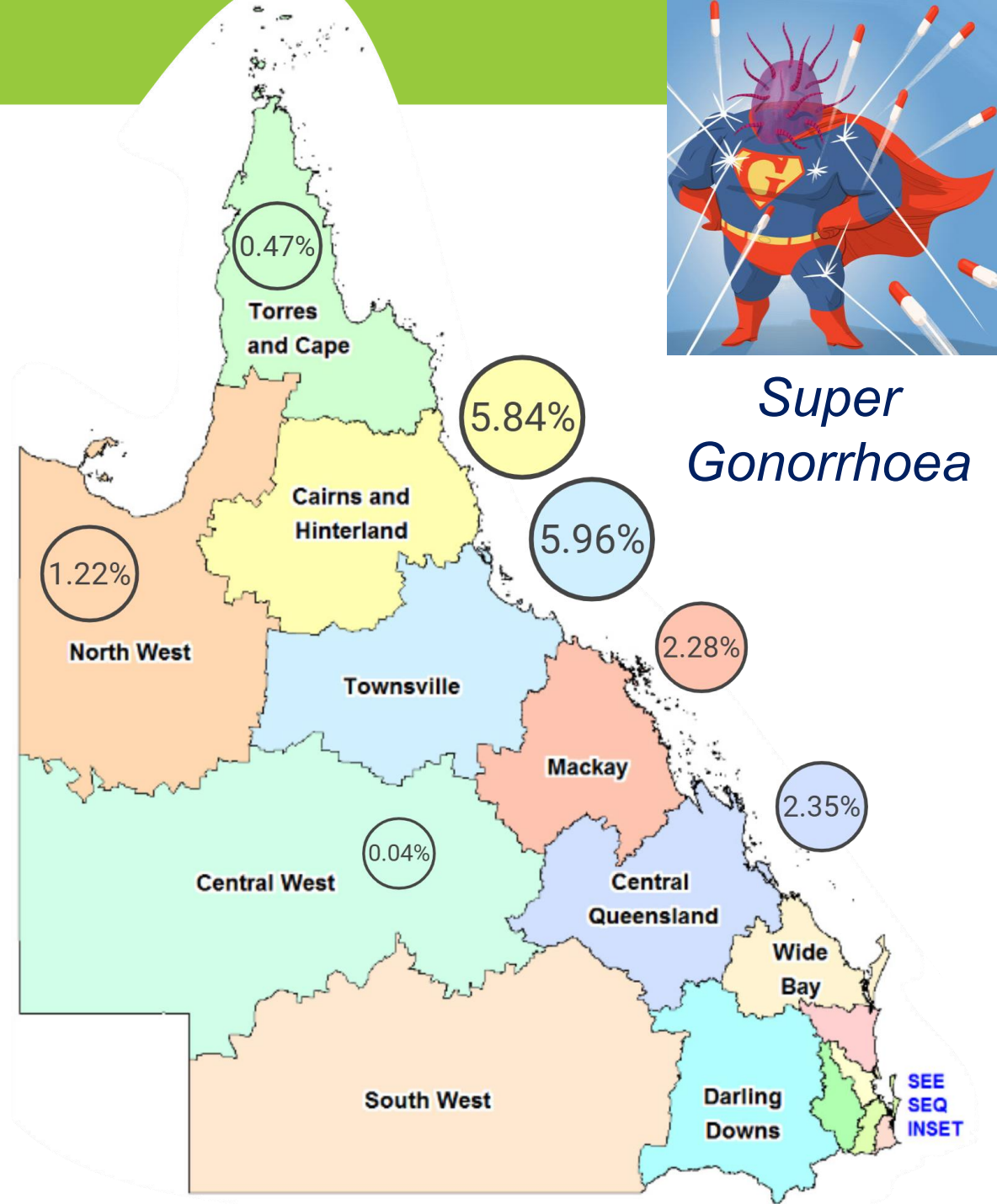
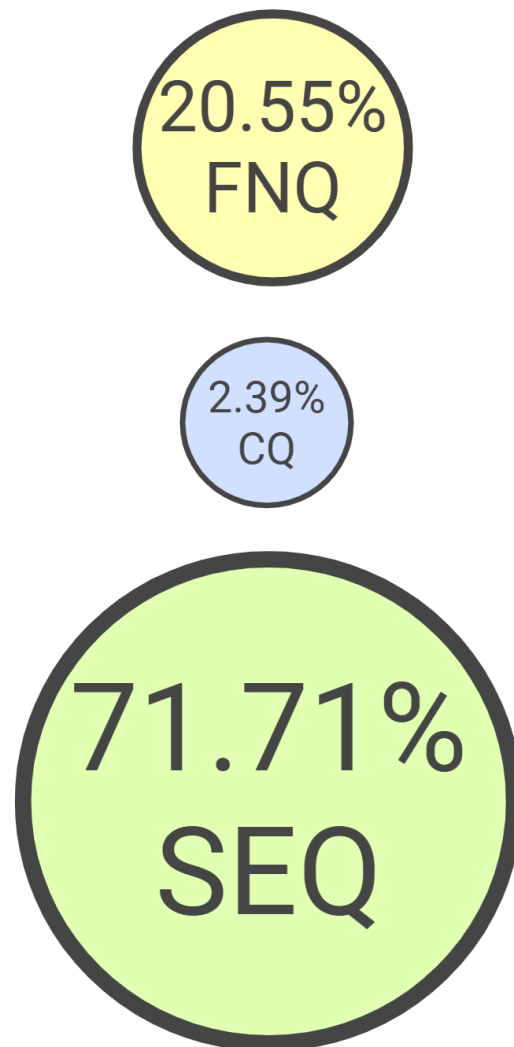
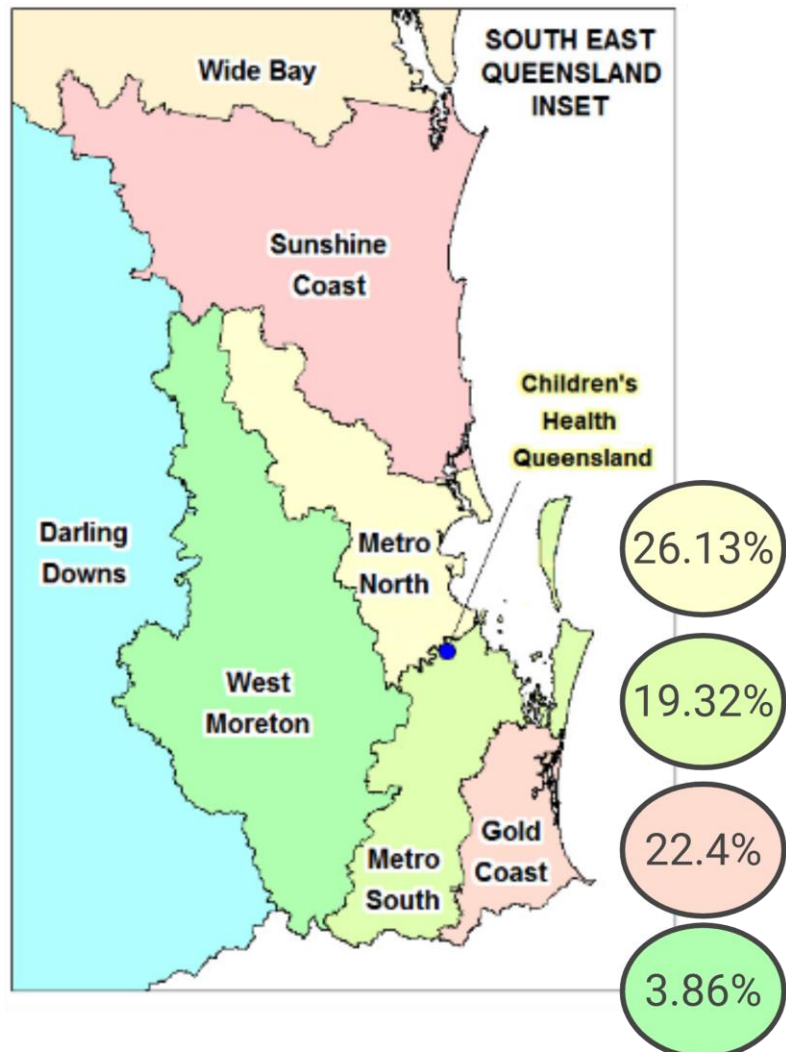
1



How can genomics help us understand STIs?

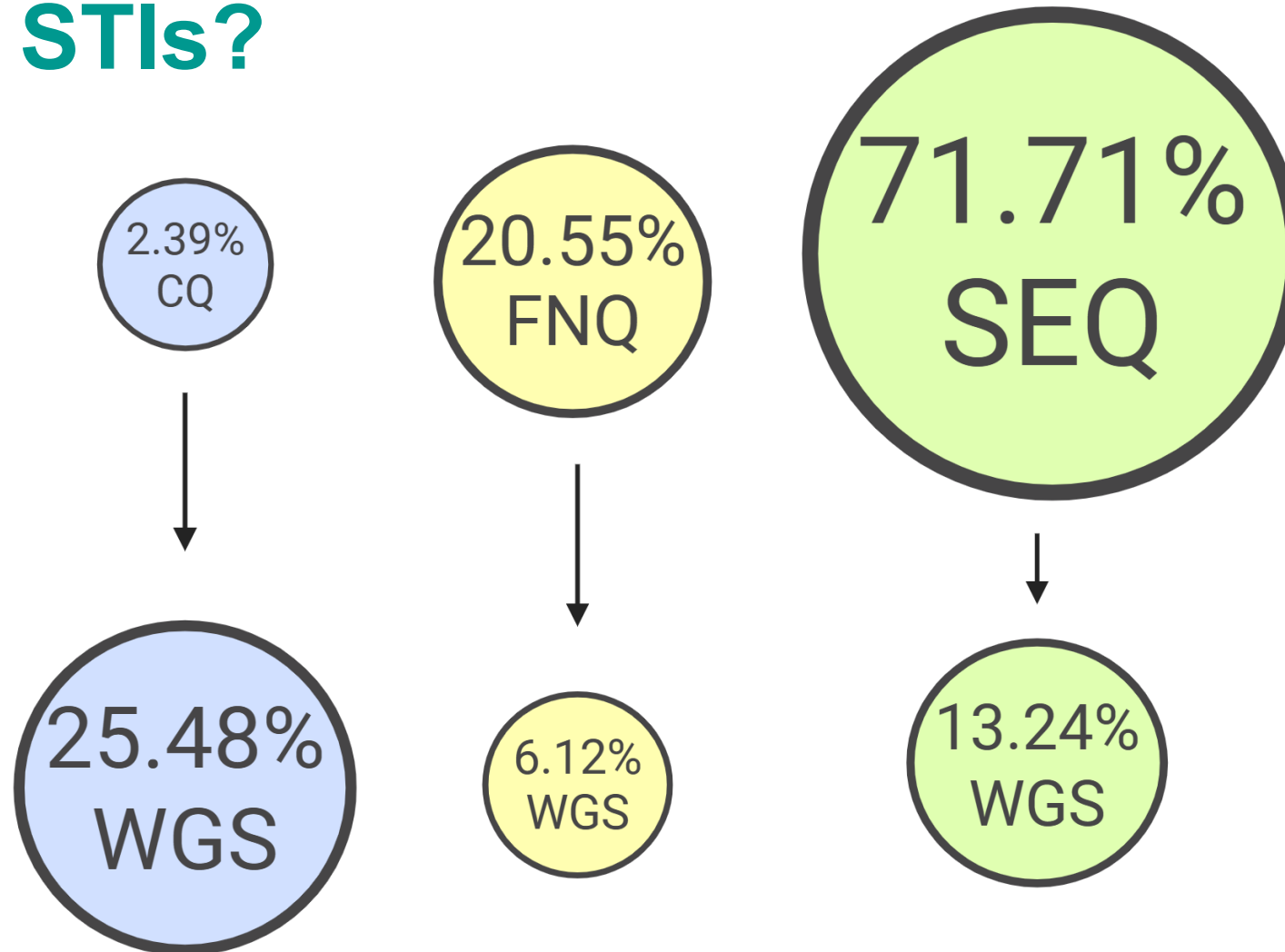


Super Gonorrhoea



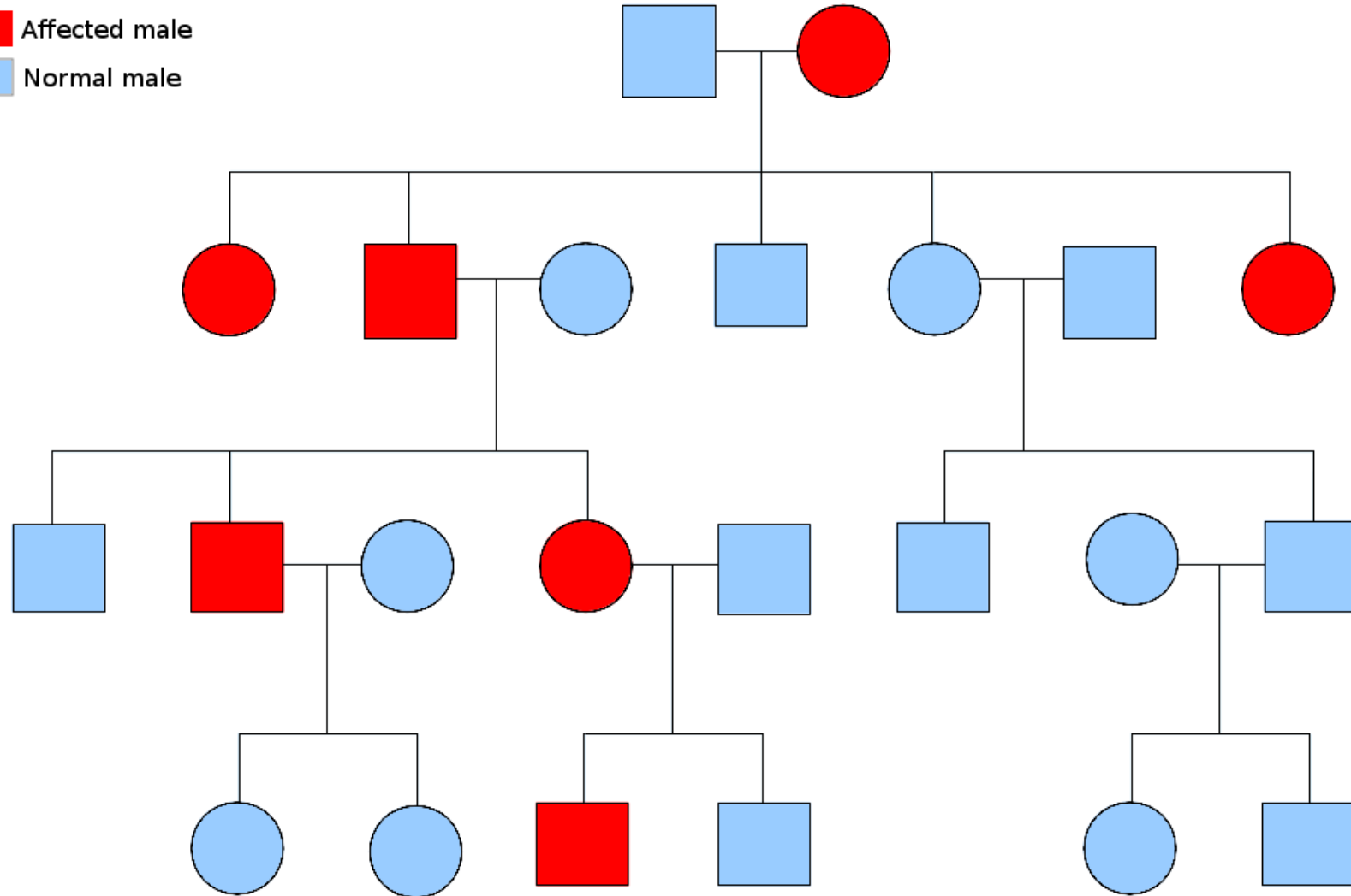
SEE SEQ INSET

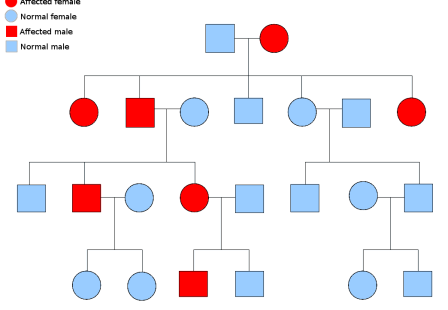
How can genomics help us understand STIs?



*Super
Gonorrhoea*

- Affected female
- Normal female
- Affected male
- Normal male

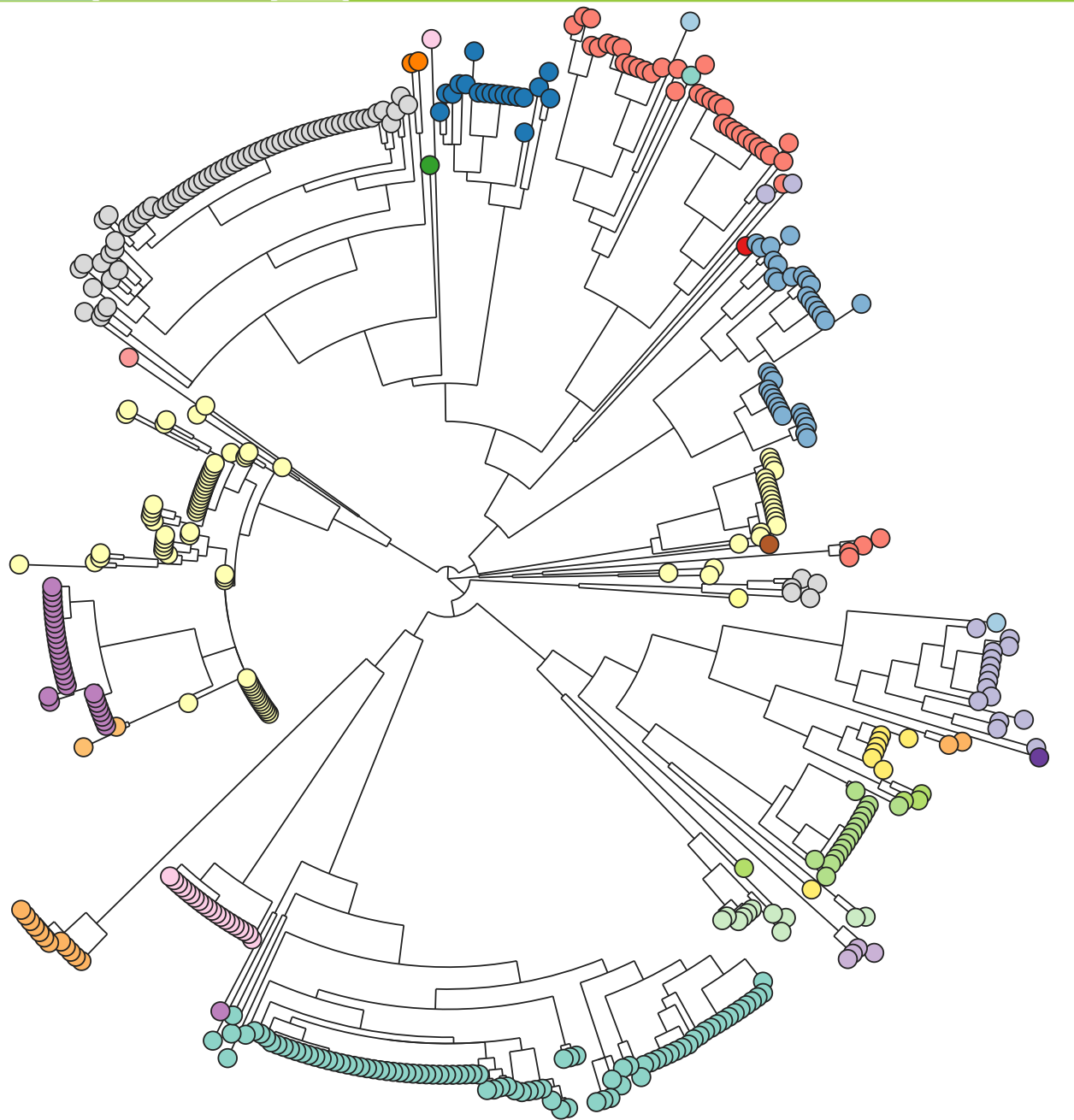


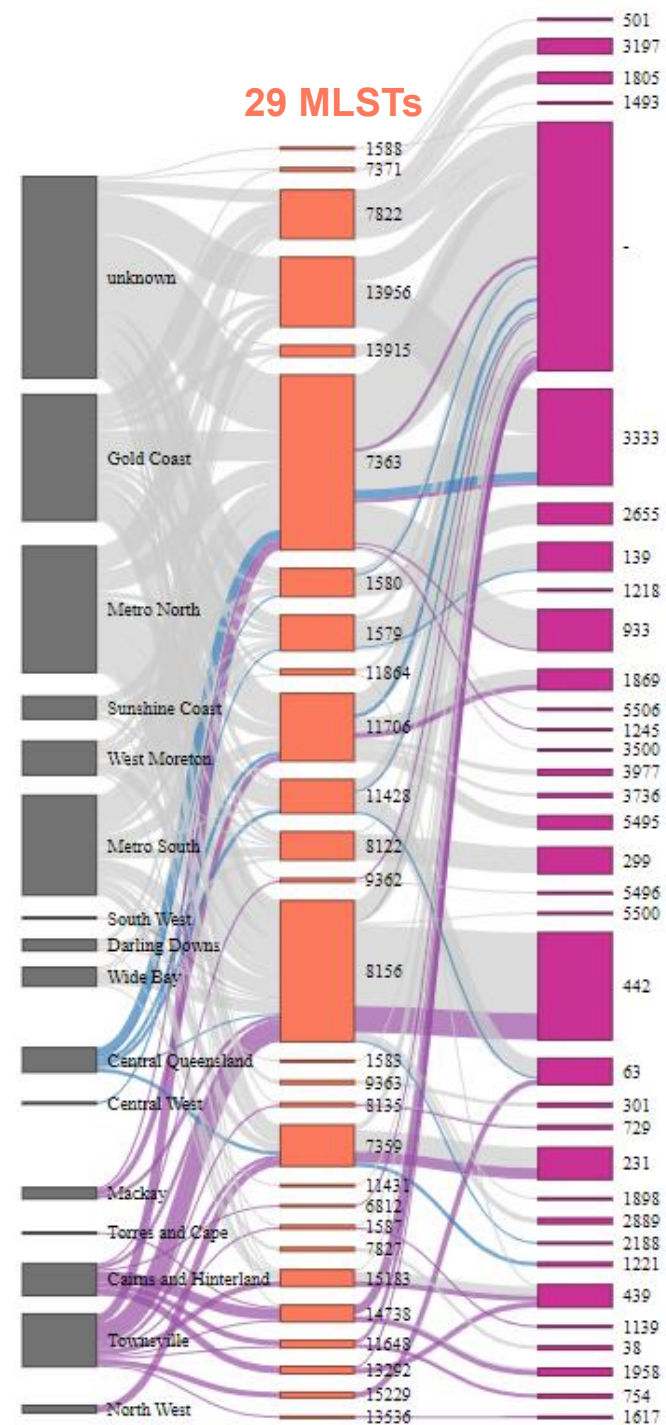


Our dataset

N=471

- 37 MLSTs
- 35* Ng STARs
- 50 Ng MASTs

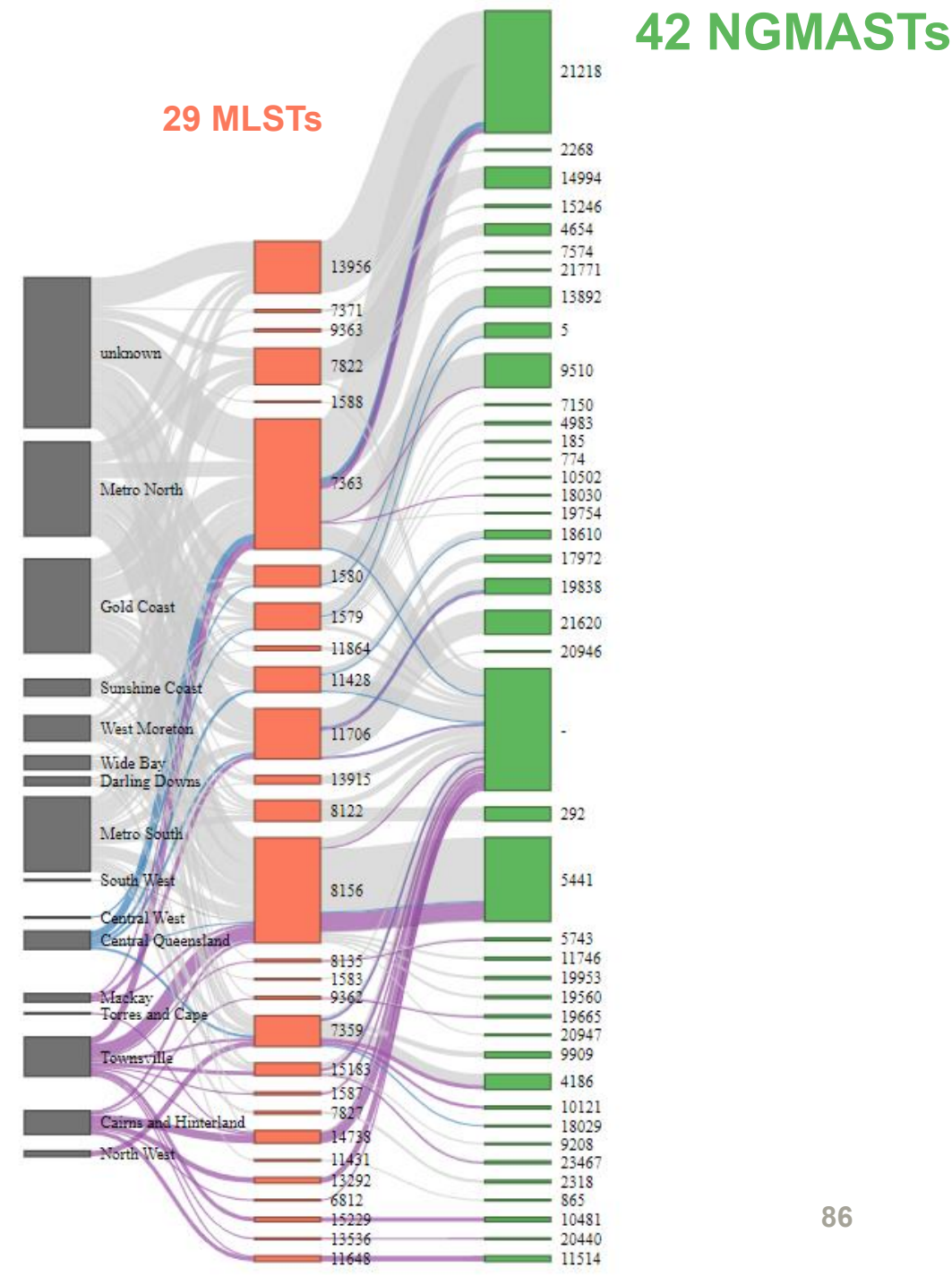




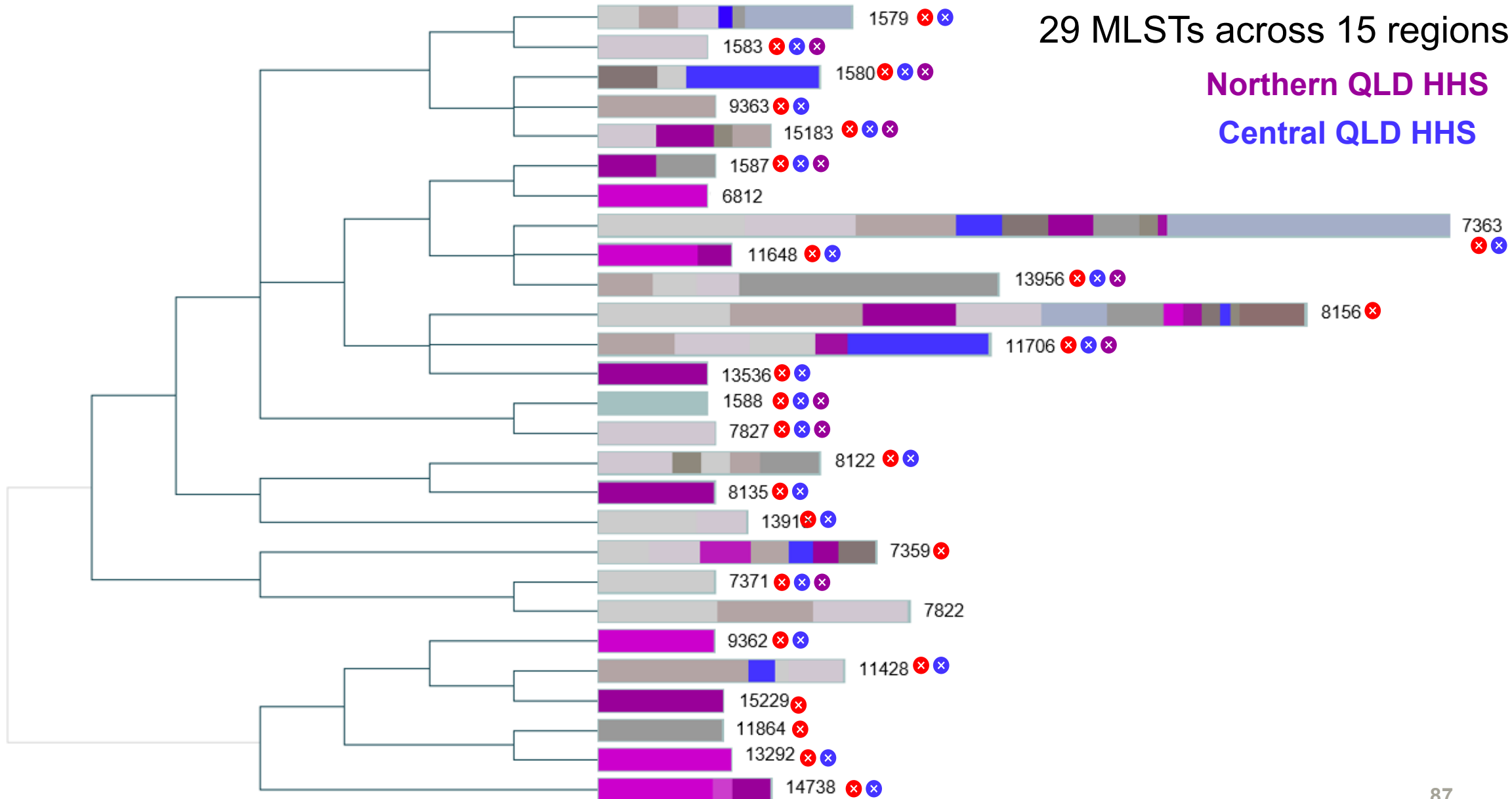
34 NGSTARs

n = 411

Northern QLD
HHS
Central QLD
HHS

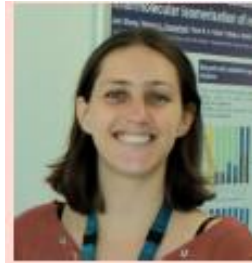


42 NGMASTs



Public and Environmental Health Reference Laboratory (PEHRL) - Queensland Health

With thanks to...



Samantha Webster

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David Whiley

George Taiaroa

Shivani Parischa

Franca Azzato

James Ward



**NHMRC ACCREDITED
RESEARCH TRANSLATION
CENTRE**



Panel discussion and questions

Professor James Ward
UQ Poche Centre for Indigenous Health

Joanne Bryant
School of Social Sciences, UNSW Sydney

Robbie Palmer
UQ Poche Centre for Indigenous Health



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