Stronger Together: Advancing Early Detection and Care in Hip Dysplasia

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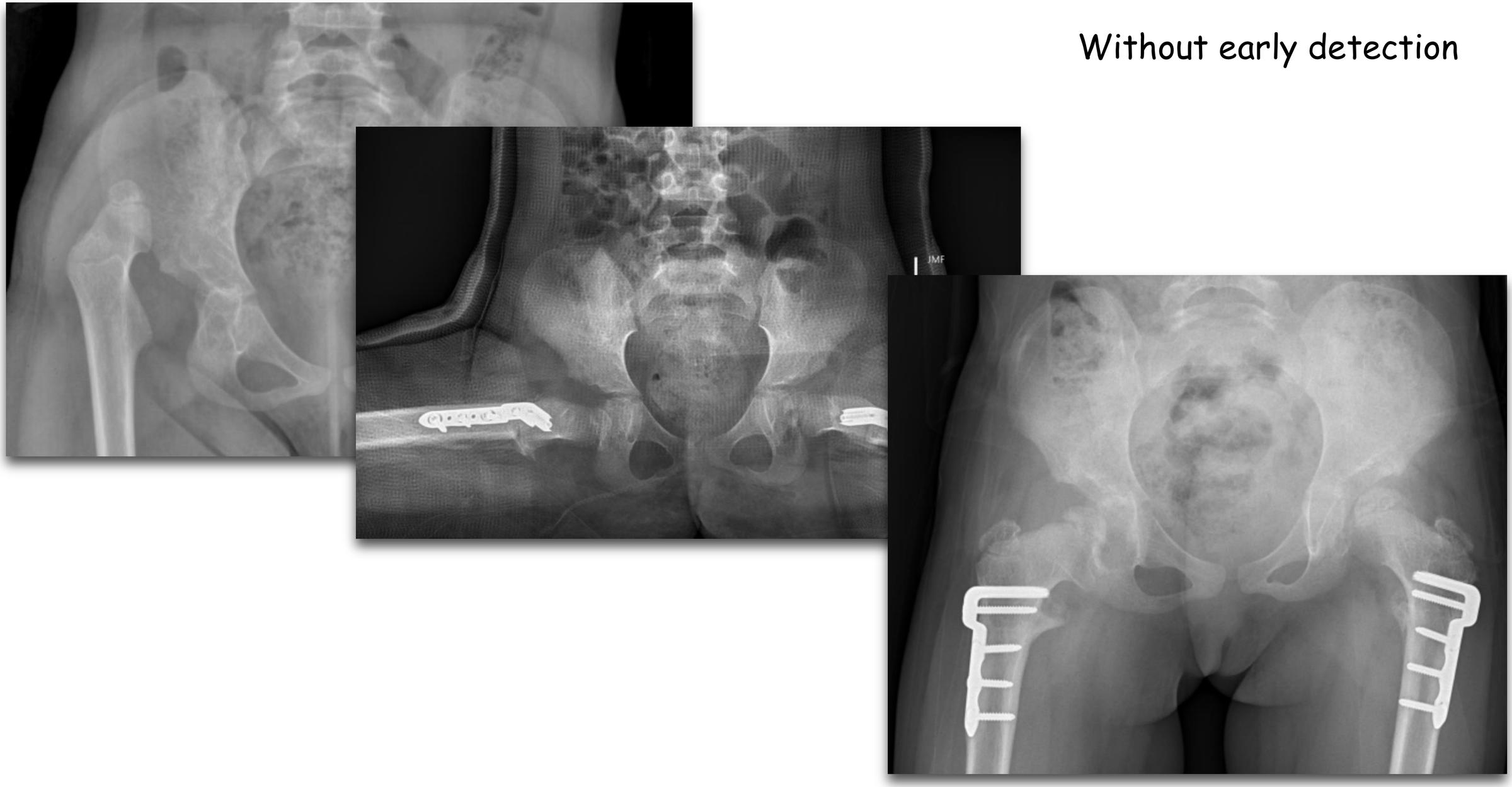
Melbourne
Australia

What is Hip Dysplasia?

It is the most common musculoskeletal birth condition

- Affects 1 in 100 babies
- More frequent in girls
- Highly associated with swaddling, breech and FH
- Usually simple to treat—if detected early

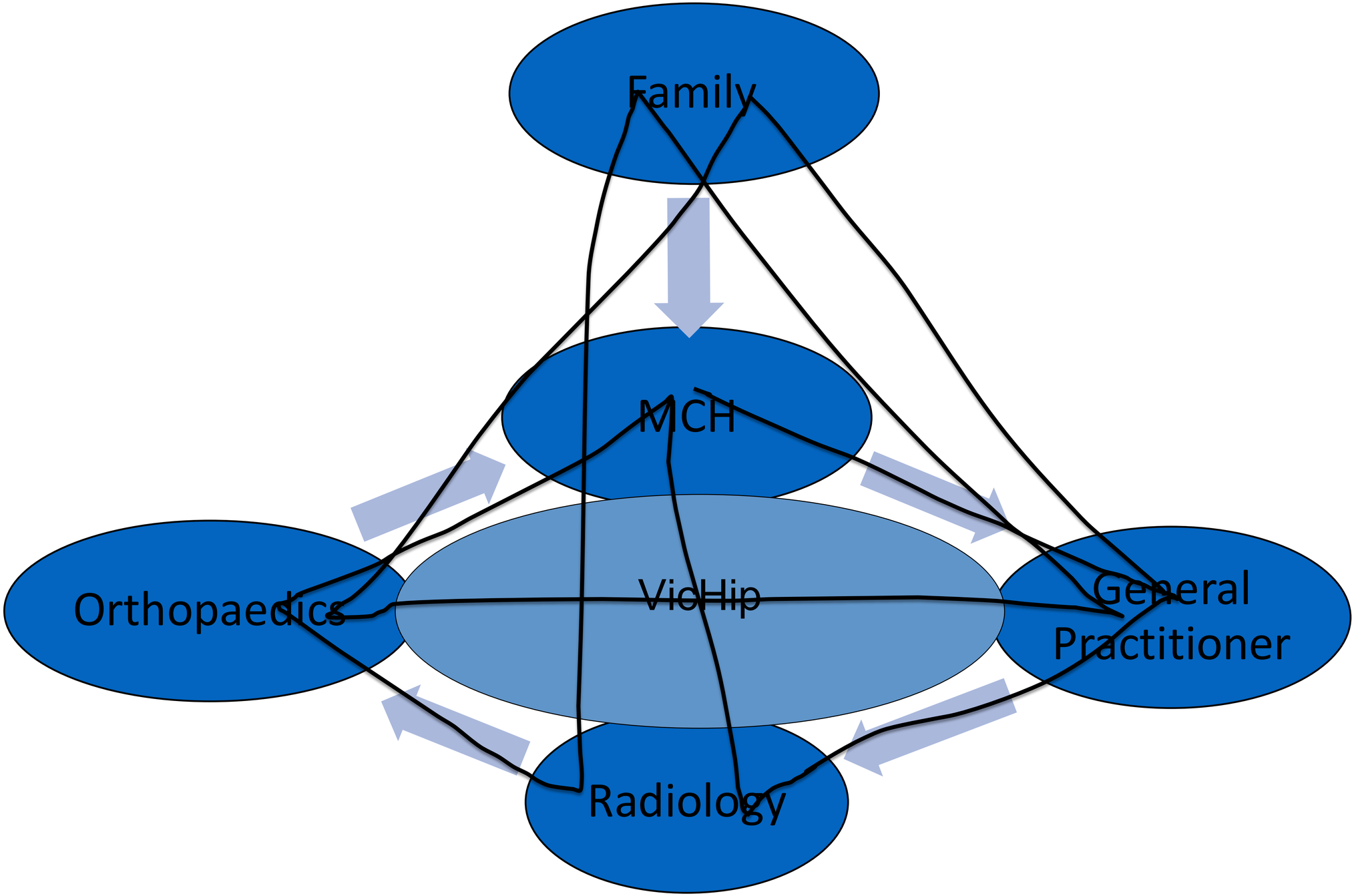
Without early detection



The Power of Collaboration

"Stronger Together" means data + care + communication

Every early detection begins with **you**


Family
MCH
Orthopaedics
VicHip
General Practitioner
Radiology

Introducing VicHip

The Victorian Hip Dysplasia Registry

- Funded by the Medical Research Future Fund

A whole-of-state prospective, continuous registry collecting patient data and outcomes

Links with GenV to enable whole-of-population insight into early musculoskeletal development

murdoch children's research institute

Search search

VicHip

Victorian hip dysplasia registry

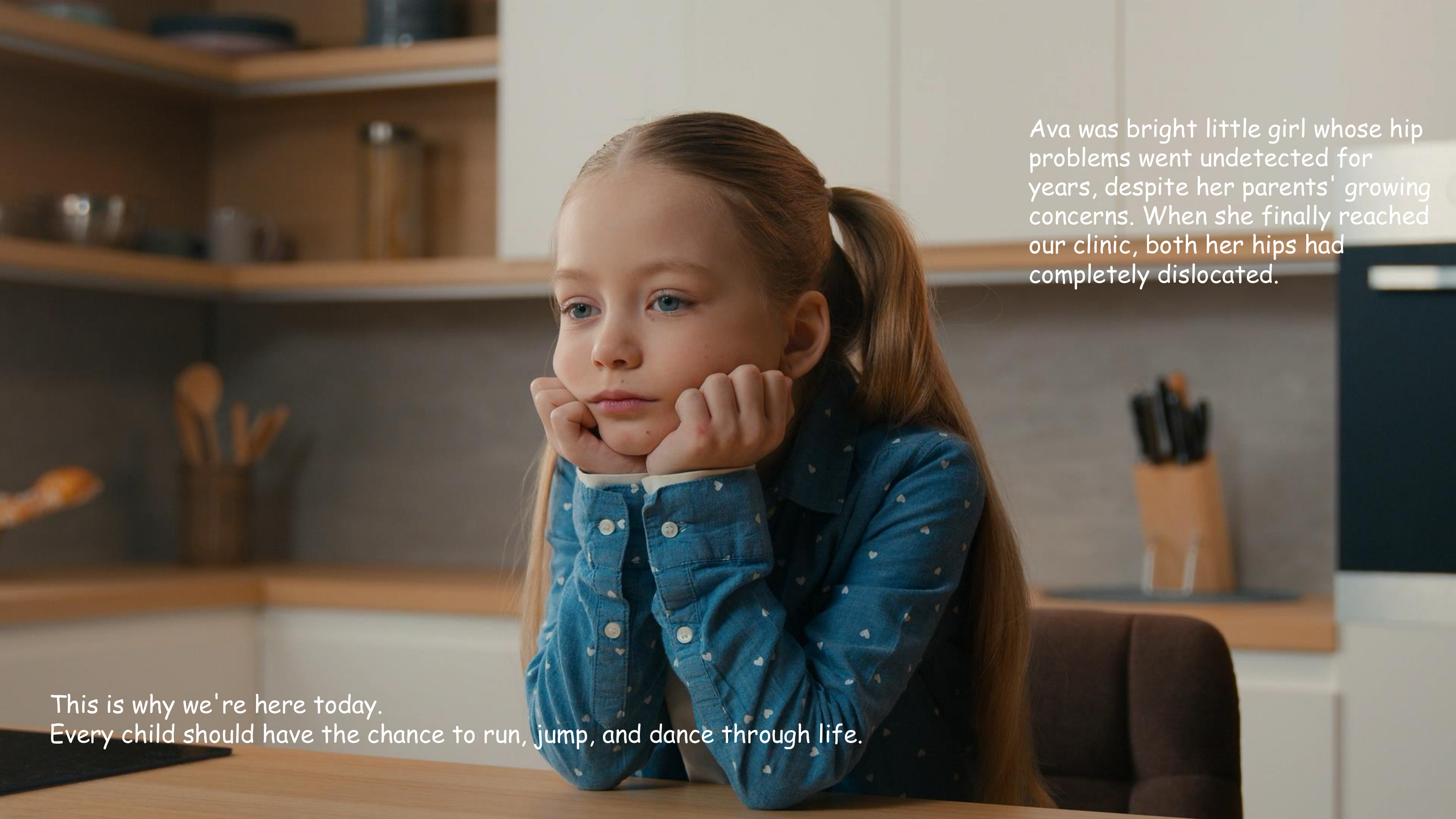
Our mission is to help patients get the best possible outcomes in their health journey with hip dysplasia.

Welcome to our community!

We are a passionate group of families, researchers and hip health experts dedicated to improving the care and treatment of hip dysplasia.

Want to join VicHip? It's easy to take part!

Learn more for parents or health professionals



Ava was bright little girl whose hip problems went undetected for years, despite her parents' growing concerns. When she finally reached our clinic, both her hips had completely dislocated.

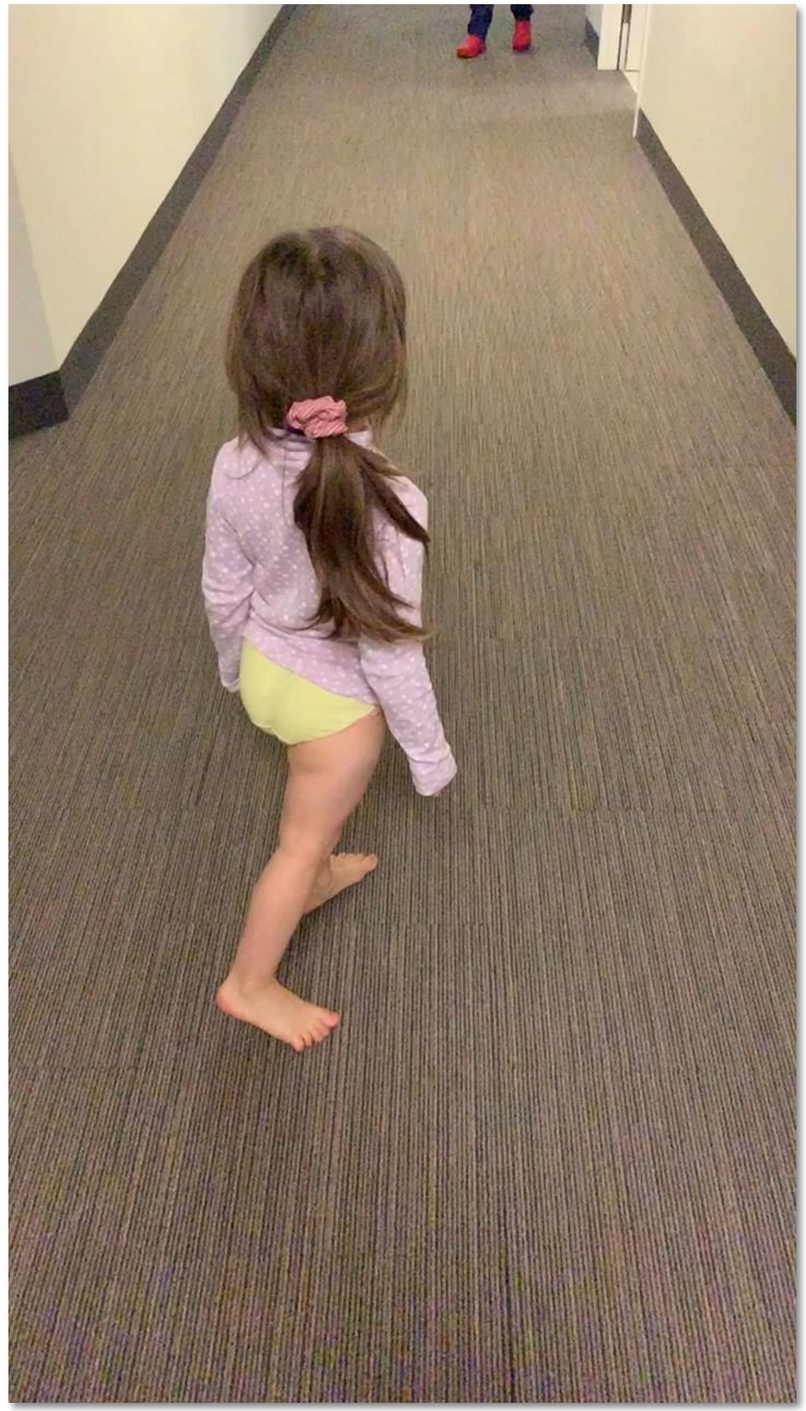
This is why we're here today.
Every child should have the chance to run, jump, and dance through life.

How did we get to this?

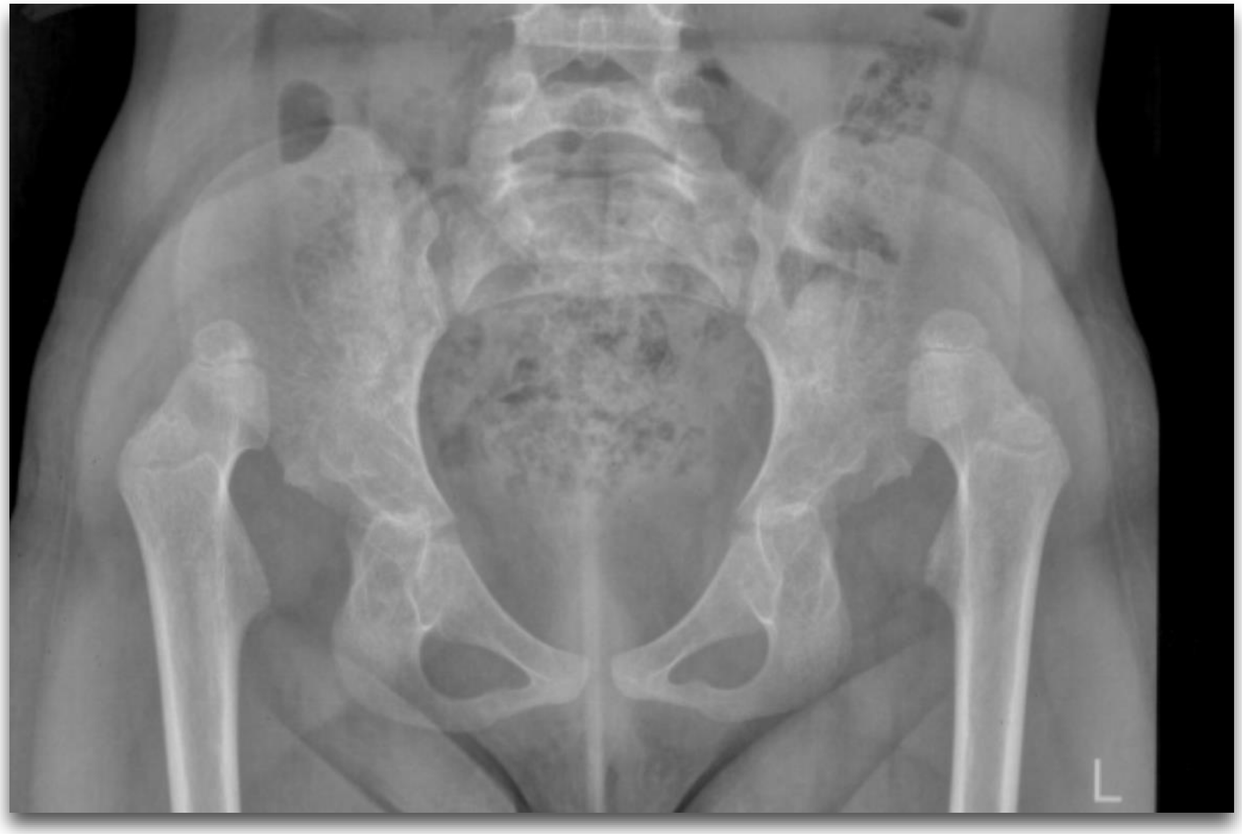
How do we as surgeons decide what is the best treatment for her?

- Use experience?
- Use evidence ?
- Use the force?

In reality we use all and none at the same time



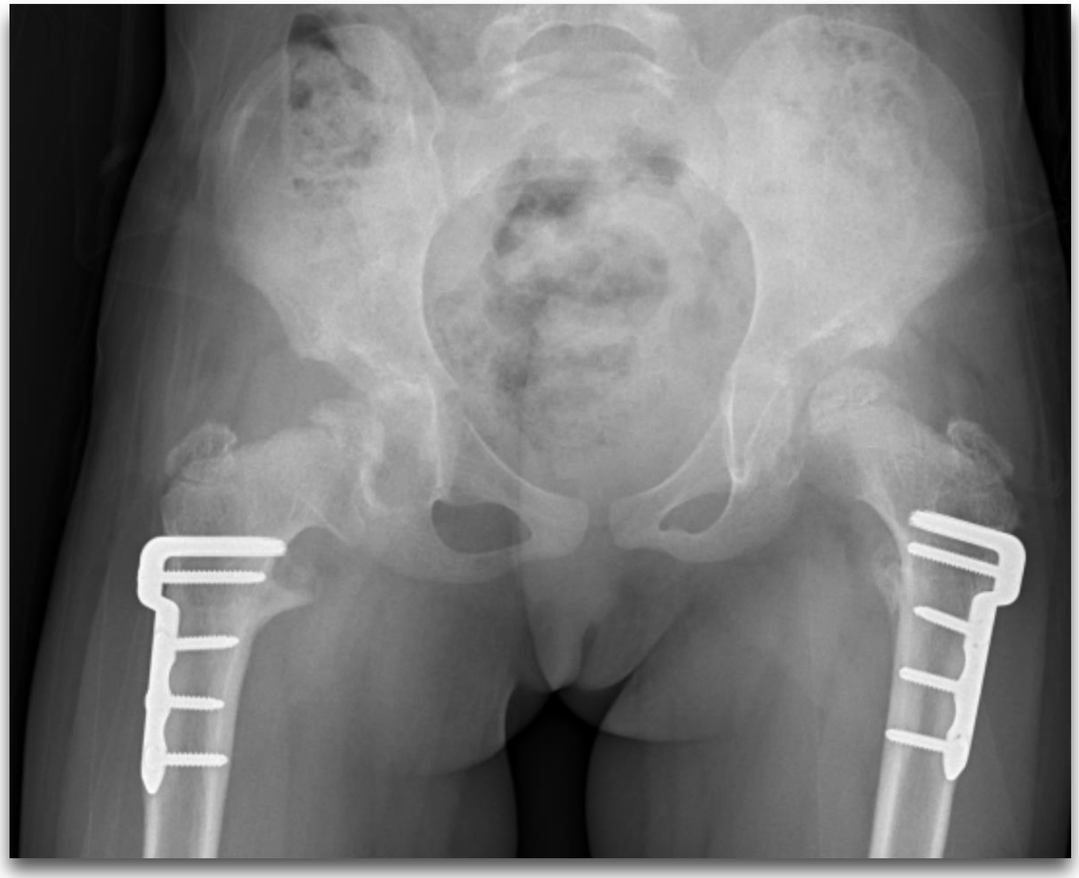
So why don't we really know what is the best treatment?



- Variation
- Natural history
- Growth

The critical questions:

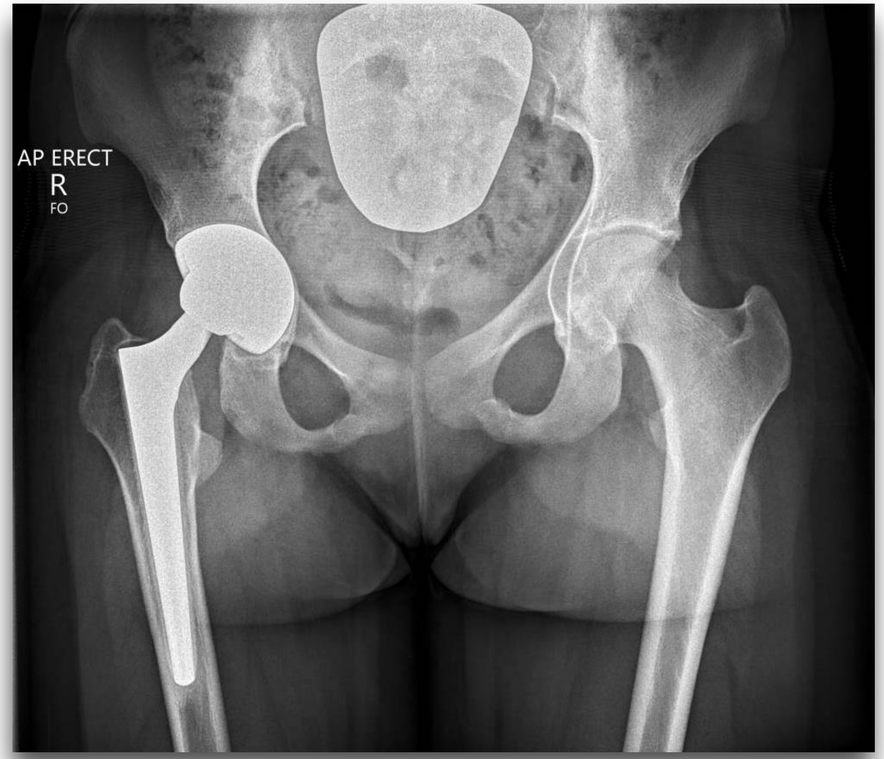
- How many children like Ava are we missing?
- How can we prevent this?
- What is the best management now?



Currently, Australia lacks a comprehensive system to track what happens to children with orthopaedic conditions as they grow into adults. We're flying blind when families need answers most.

And don’t for a moment think you are out of it!

One in five adults have undiagnosed hip dysplasia
50% of hip replacements in young adults are due to that dysplasia



Why a Registry?

- Clinical data registries focus on patients who share a common problem
- The primary purpose is to monitor outcomes and report on the quality of care
- They use observational study methods to collect uniform data
- Drive improvements in the appropriateness of care
- Feeds clinical outcomes and family experience back to services
- Conducts nested studies

Without vs. With Registries

Without Registries:

- Decisions based on limited experience
- No systematic long-term tracking
- Families left with uncertainty
- Missed opportunities for early intervention

With Registries:

- Evidence-based treatment decisions
- 25-year follow-up capability
- Clear guidance for families
- Proven intervention effectiveness

"Registries transform valuable insights into scientific knowledge by asking the right research questions and tracking what truly matters to families."

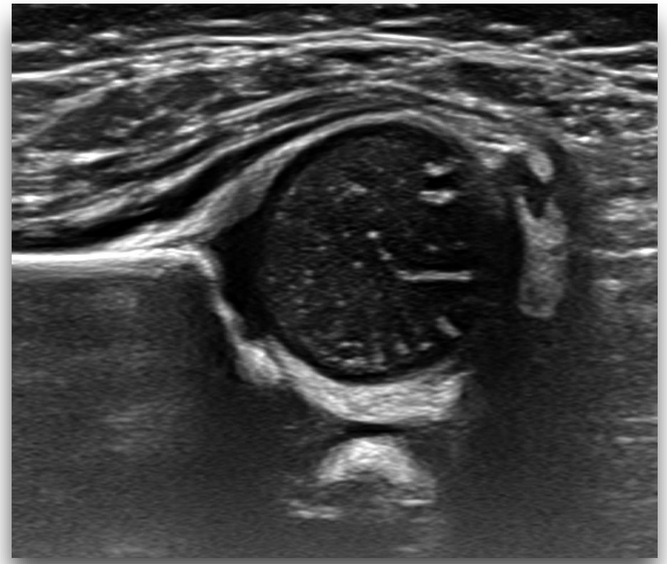
Why It Matters to MCH Practice

- Registry data informs prevention strategies and referral feedback loops
- MCH assessments remain the cornerstone for early detection; registry data identifies missed detection patterns
- Allows us to advocate for you with evidence

Data Collection & Management

What We Collect:

- Medical records and hospital data
- Ultrasounds and X-rays
- Treatment details and costs
- Patient-reported outcomes
- Health literacy
- Experience of care



- Long-term outcome data - essential for paediatric research

Relevance to MCH Practice

- Your assessments → inform registry trends
- Your referrals → trigger confirmation scans
- Your feedback → shapes family experience

Experience of Care: Family Voices

Emotional Strain and Anxiety
Parents often feel overwhelmed and anxious after their child's diagnosis, facing emotional stress and uncertainty about next steps.

Confusion in Processes
Referral procedures and result interpretation can be confusing, making clear communication vital to ease parental concerns.

Equity in Imaging Access
Regional differences in access to imaging highlight the need for equitable healthcare for all families.

Need for Practical Support
Plain language and hands-on brace support help families navigate care and feel more confident at appointments.

What Families Told Us

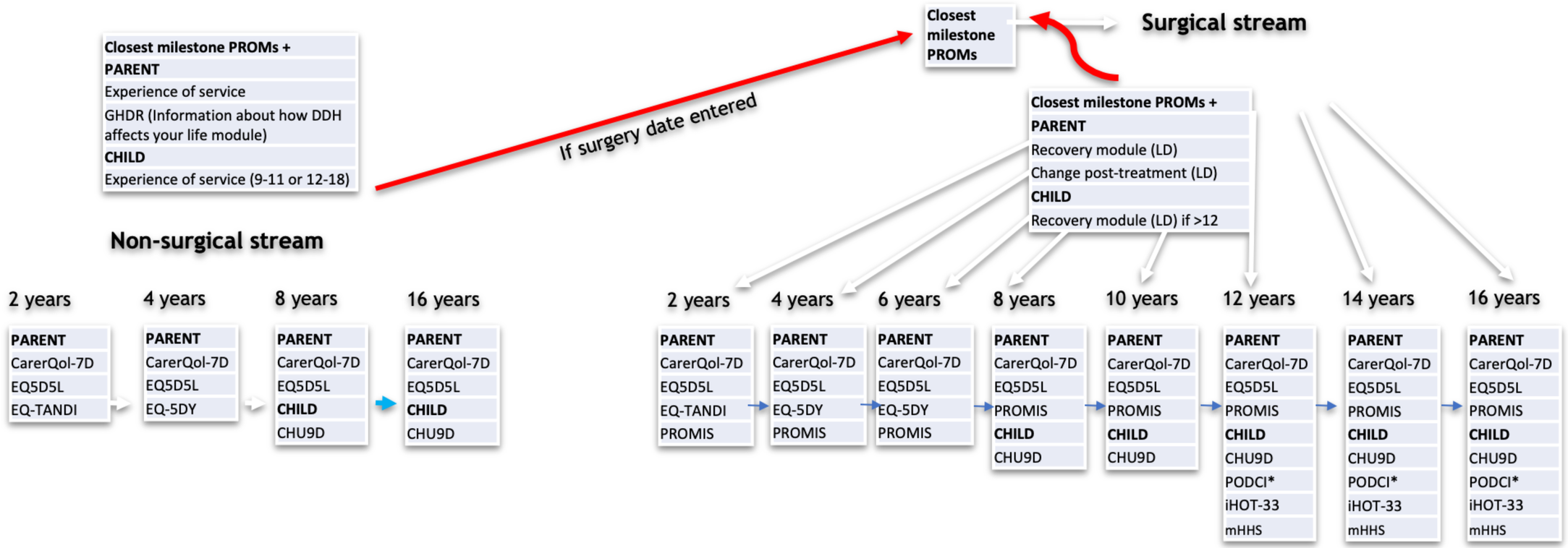
The top three messages for MCH nurses from families

- Lead with calm, plain-language reassurance at diagnosis; validate emotions and normalise common concerns.
- Deliver practical, first-week brace coaching (feeding, sleeping, clothing, car seats) using standard checklists and QR-video resources.
- Coordinate closely with ortho/imaging teams so advice is consistent, and provide a clear “who to call” pathway for follow-up questions.

Clinician–Family Partnership

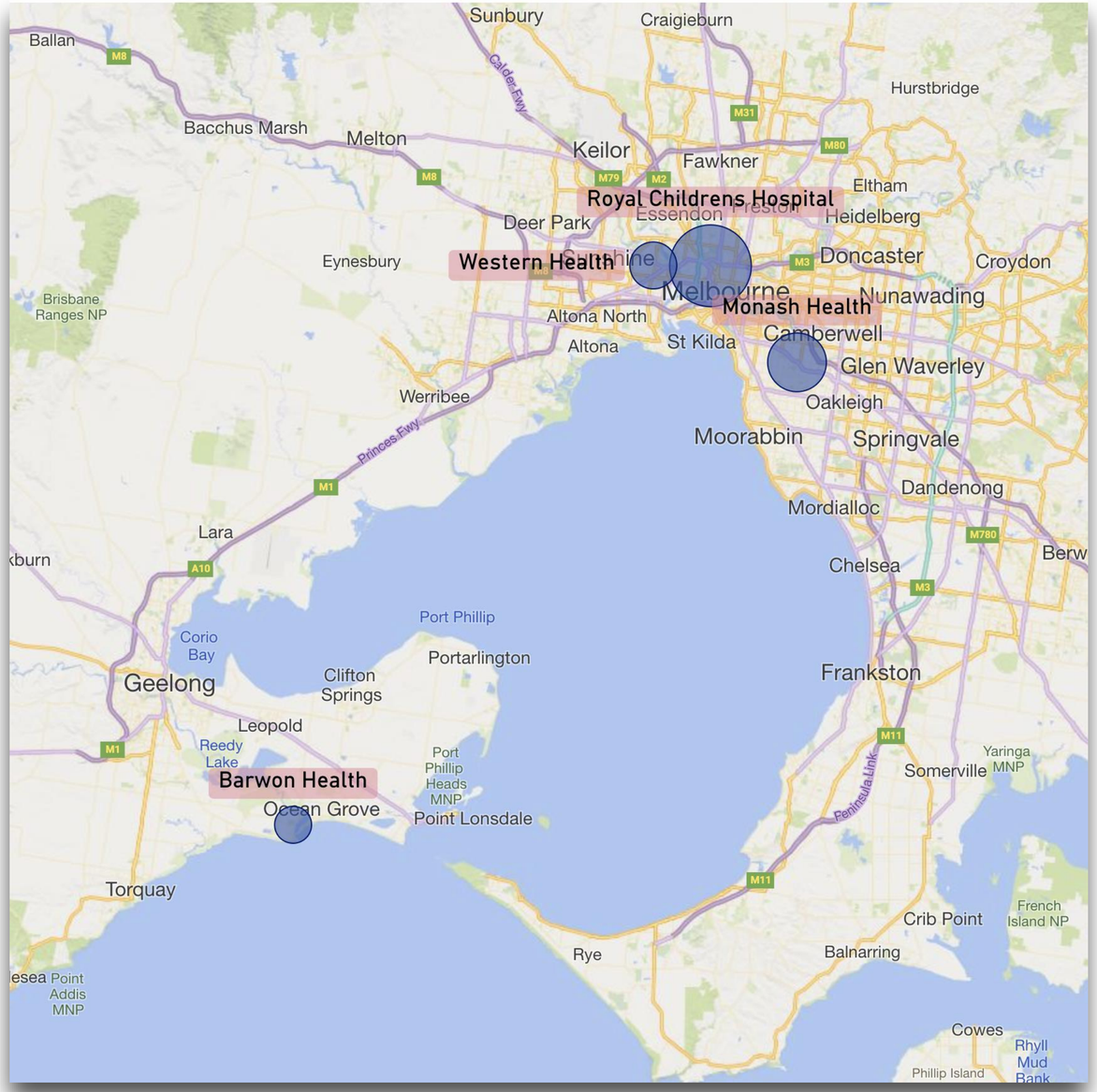
- PROMs guide research and care improvement by reflecting real family experiences
  - MCH can translate registry and survey insights into better parent education at community level.

PROM's Delivered



Data Snapshot: Where We Are

- About 1500 Victorian infants affected annually (~1.5% of births) .
- Detection typically occurs under 6 months, but late detection remains stable over decades .
- Geographic variation and socioeconomic disparities identified in registry-linked studies .


Sunbury
Craigieburn
Ballan
Hurstbridge
Bacchus Marsh
Melton
Keilor
Fawkner
Eltham
Royal Childrens Hospital
Deer Park
Essendon
Heidelberg
Eynesbury
Western Health
Doncaster
Croydon
Brisbane Ranges NP
Melbourne
Monash Health
Nunawading
Altona North
Camberwell
Altona
St Kilda
Glen Waverley
Werribee
Oakleigh
Moorabbin
Springvale
Dandenong
Mordialloc
Lara
Chelsea
Port Phillip
Corio Bay
Portarlington
Frankston
Clifton Springs
Geelong
Leopold
Reedy Lake
Barwon Health
Port Phillip Heads MNP
Somerville
Yaringa MNP
Ocean Grove
Point Lonsdale
Torquay
Crib Point
French Island NP
Rye
Balnarring
Point Addis MNP
Cowes
Rhyll
Mud Bank
Phillip Island


murdoch children's research institute
vichip
Victorian hip dysplasia registry
GHDR
The Royal Children's Hospital Melbourne
Western Health
Barwon Health
Monash Health
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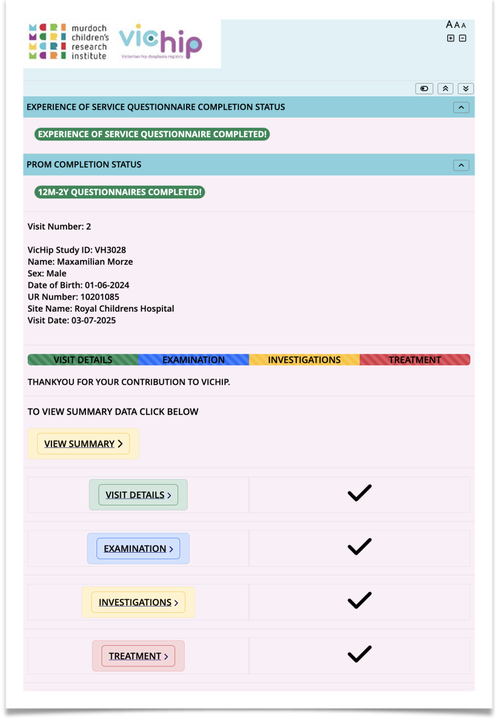
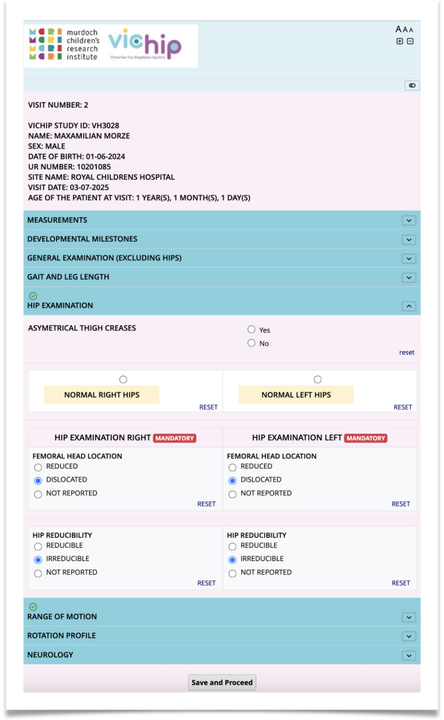
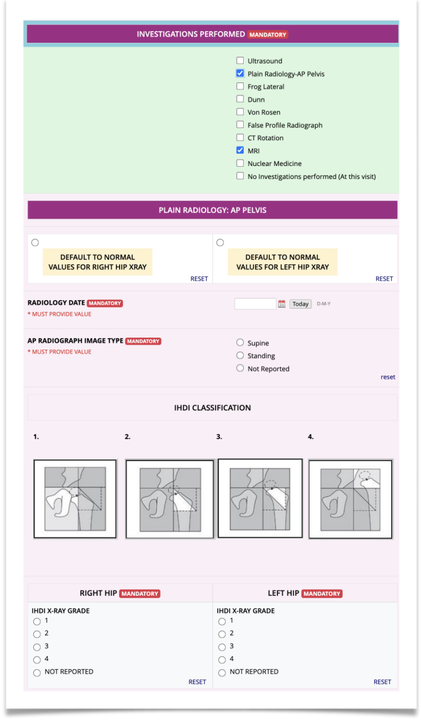
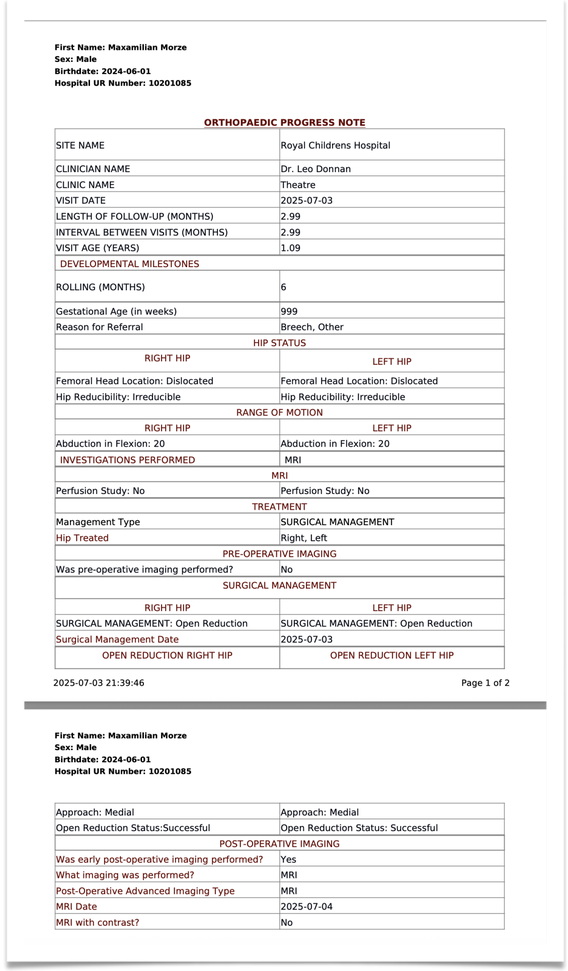








First Name: Maxamilian Morze
Sex: Male
Birthdate: 2024-06-01
Hospital UR Number: 10201085

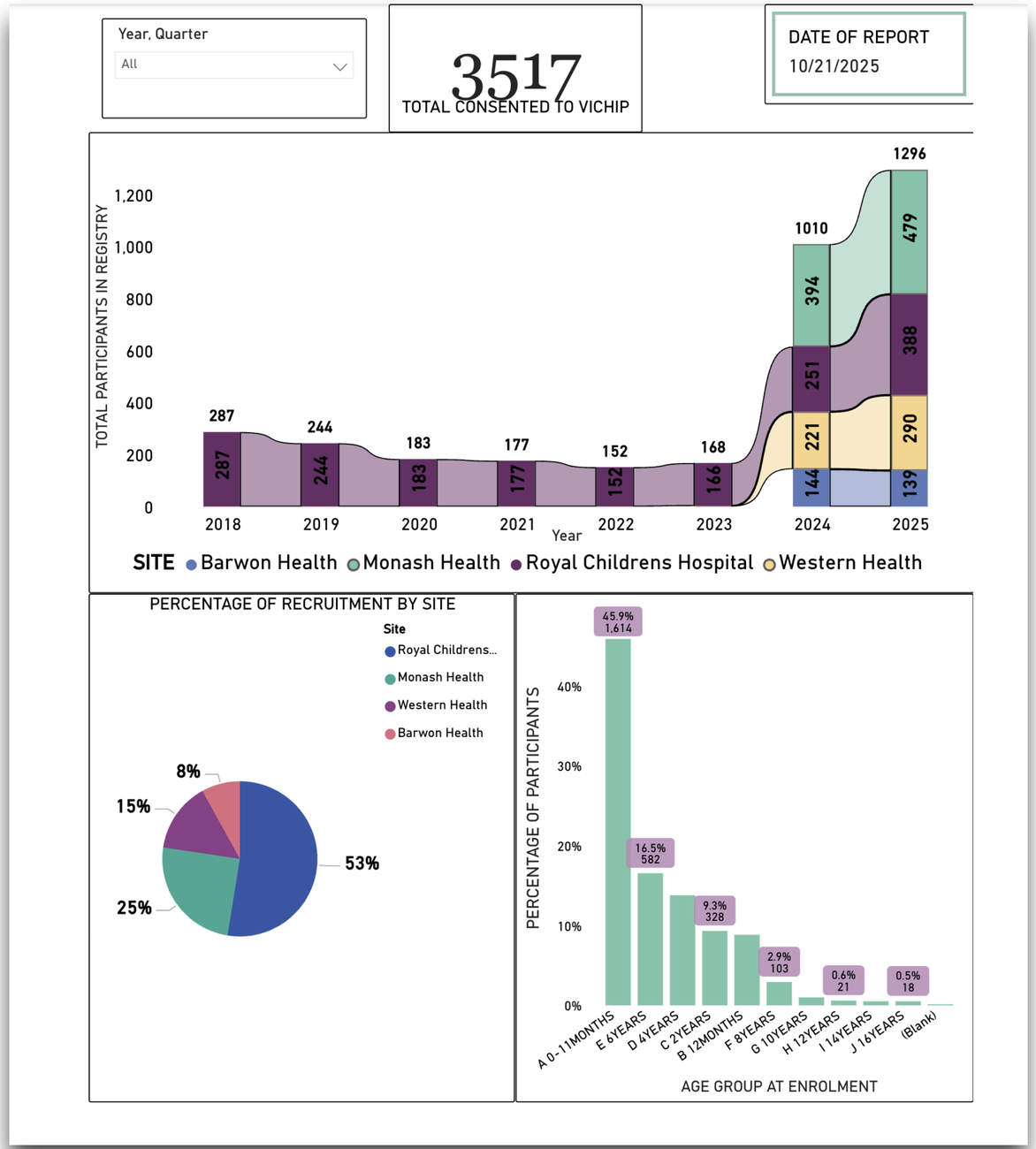
ORTHOPAEDIC PROGRESS NOTE

SITE NAME	Royal Childrens Hospital
CLINICIAN NAME	Dr. Leo Donnan
CLINIC NAME	Theatre
VISIT DATE	2025-07-03
LENGTH OF FOLLOW-UP (MONTHS)	2.99
INTERVAL BETWEEN VISITS (MONTHS)	2.99
VISIT AGE (YEARS)	1.09
DEVELOPMENTAL MILESTONES	
ROLLING (MONTHS)	6
Gestational Age (in weeks)	999
Reason for Referral	Breech, Other
HIP STATUS	
RIGHT HIP	LEFT HIP
Femoral Head Location: Dislocated	Femoral Head Location: Dislocated
Hip Reducibility: Irreducible	Hip Reducibility: Irreducible
RANGE OF MOTION	
RIGHT HIP	LEFT HIP
Abduction in Flexion: 20	Abduction in Flexion: 20
INVESTIGATIONS PERFORMED	MRI
MRI	
Perfusion Study: No	Perfusion Study: No
TREATMENT	
Management Type	SURGICAL MANAGEMENT
Hip Treated	Right, Left
PRE-OPERATIVE IMAGING	
Was pre-operative imaging performed?	No
SURGICAL MANAGEMENT	
RIGHT HIP	LEFT HIP
SURGICAL MANAGEMENT: Open Reduction	SURGICAL MANAGEMENT: Open Reduction
Surgical Management Date	2025-07-03
OPEN REDUCTION RIGHT HIP	OPEN REDUCTION LEFT HIP

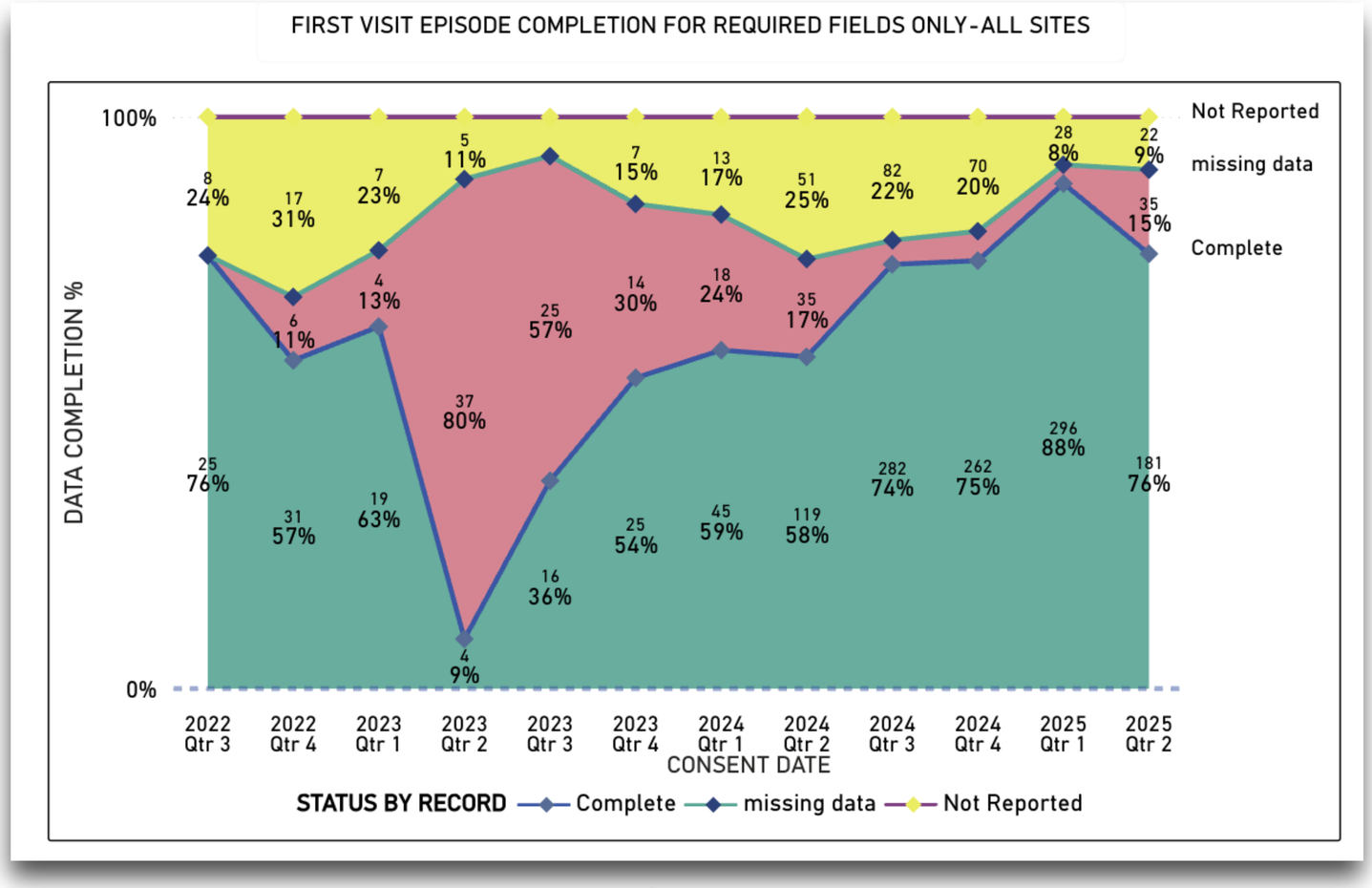
First Name: Maxamilian Morze
Sex: Male
Birthdate: 2024-06-01
Hospital UR Number: 10201085

Approach: Medial	Approach: Medial
Open Reduction Status:Successful	Open Reduction Status: Successful
POST-OPERATIVE IMAGING	
Was early post-operative imaging performed?	Yes
What imaging was performed?	MRI
Post-Operative Advanced Imaging Type	MRI
MRI Date	2025-07-04
MRI with contrast?	No

as of Oct 2025

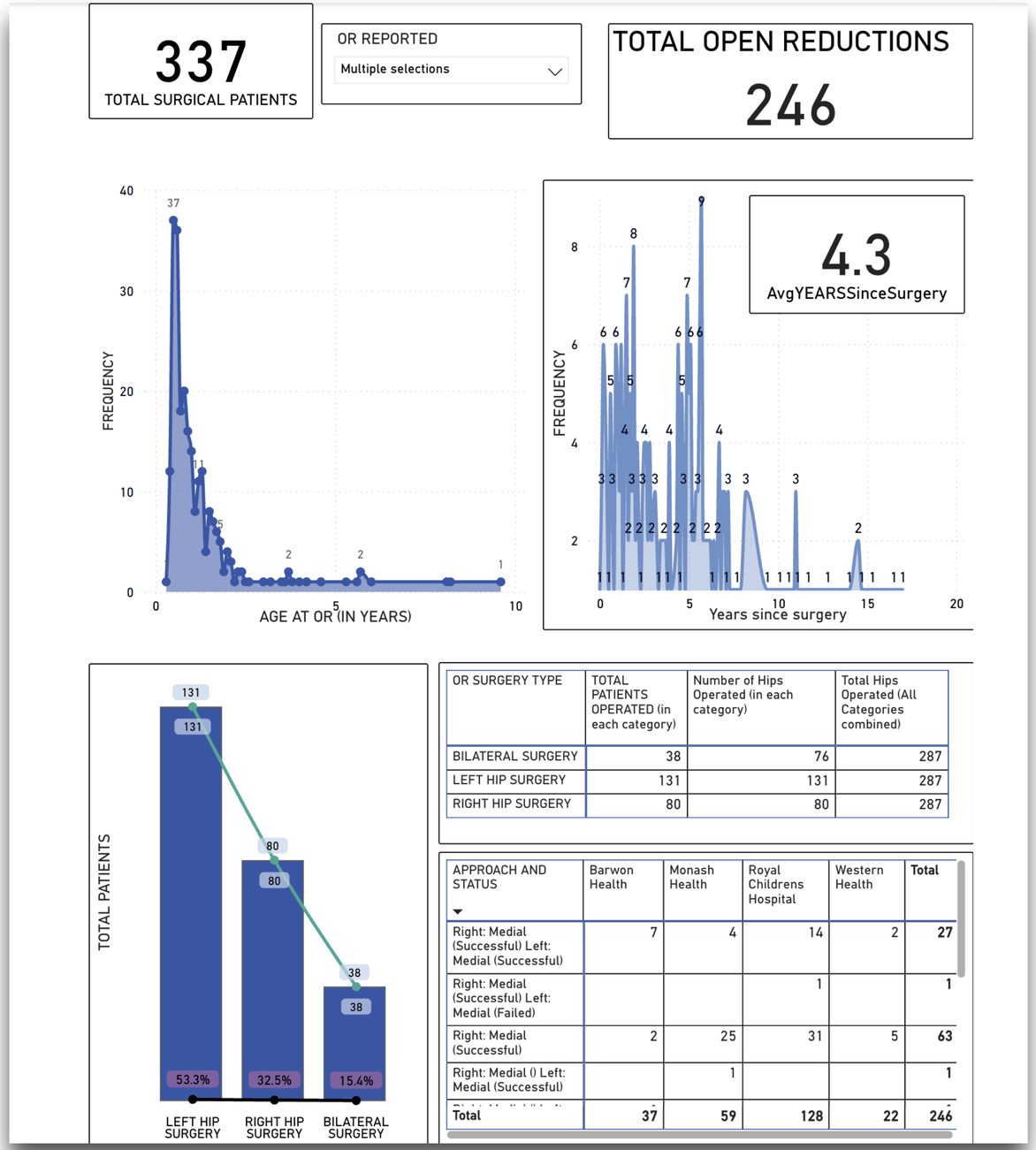


Data Completion



June

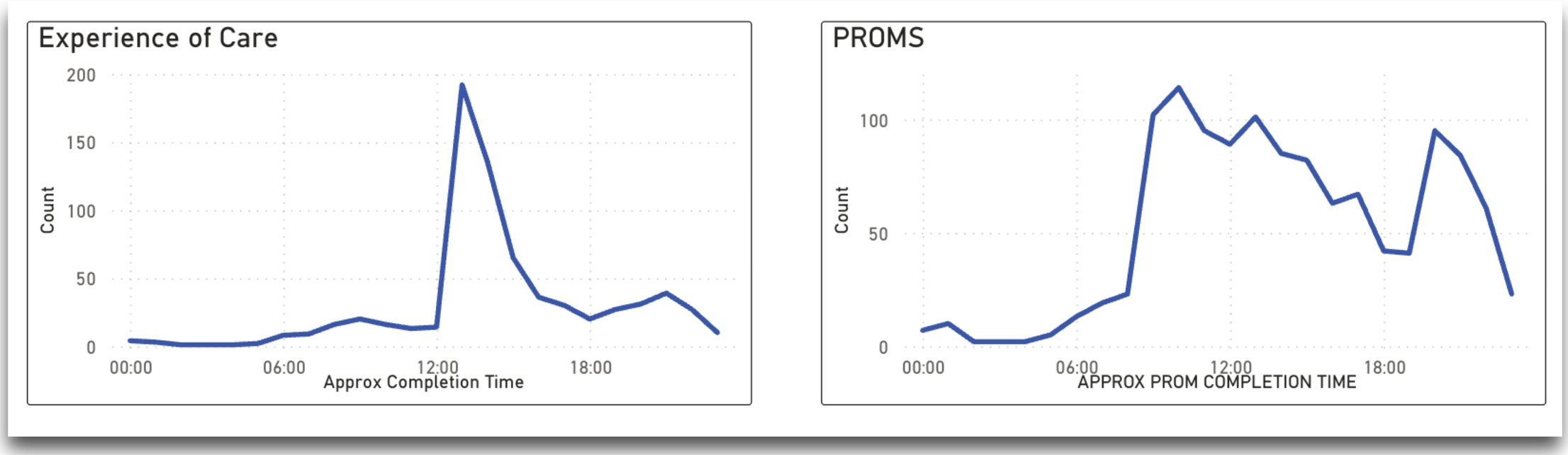
Surgical Data Reporting



OR SURGERY TYPE	TOTAL PATIENTS OPERATED (in each category)	Number of Hips Operated (in each category)	Total Hips Operated (All Categories combined)
BILATERAL SURGERY	38	76	287
LEFT HIP SURGERY	131	131	287
RIGHT HIP SURGERY	80	80	287

APPROACH AND STATUS	Barwon Health	Monash Health	Royal Childrens Hospital	Western Health	Total
Right: Medial (Successful) Left: Medial (Successful)	7	4	14	2	**27**
Right: Medial (Successful) Left: Medial (Failed)			1		**1**
Right: Medial (Successful)	2	25	31	5	**63**
Right: Medial () Left: Medial (Successful)		1			**1**
Total	**37**	**59**	**128**	**22**	**246**

Engagement Reports



Trends and Missed Diagnoses

- Late presentations continue despite screening indicate unrecognised risk clusters

- Focus on refining education and referral strategies for MCH frontline practitioners.

Where are we now?

Aetiology - major risks factors are known but

Investigations – imaging is problematic

Classification - lack of consensus, poor normative data

Management - "personalised treatment" but not of patient

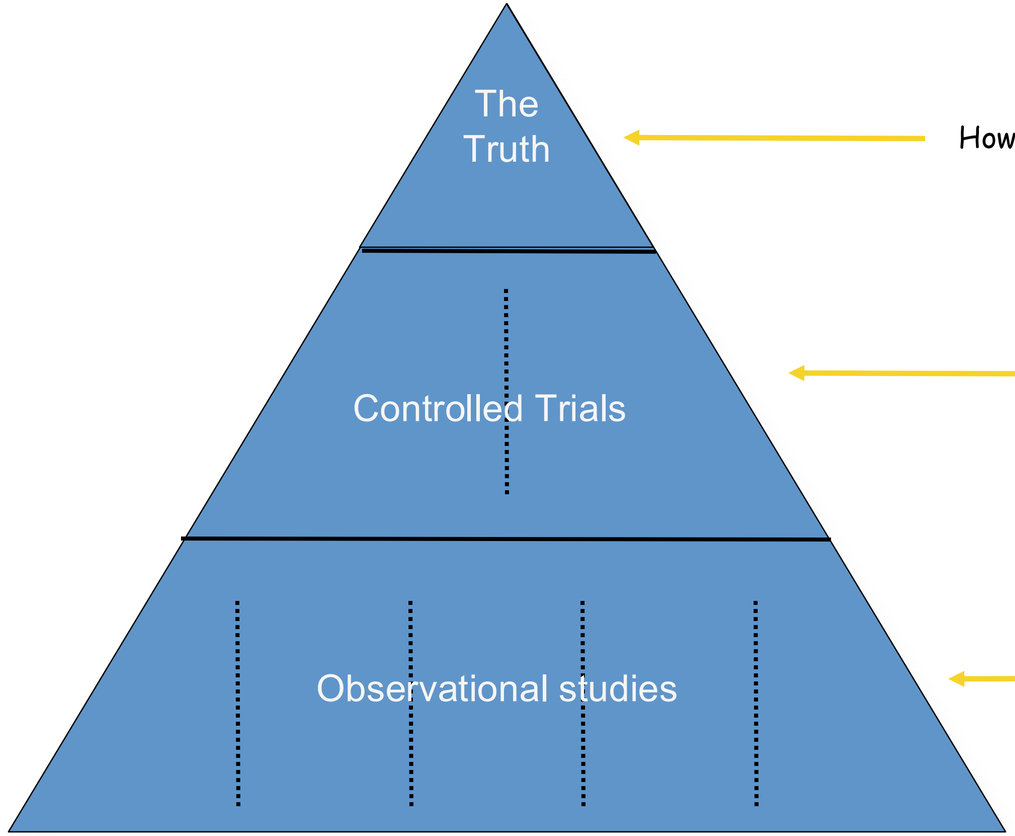
Outcome - dearth of properly conducted long term studies

Research Strategy

Implementation

Potential Solution

Identify Problem



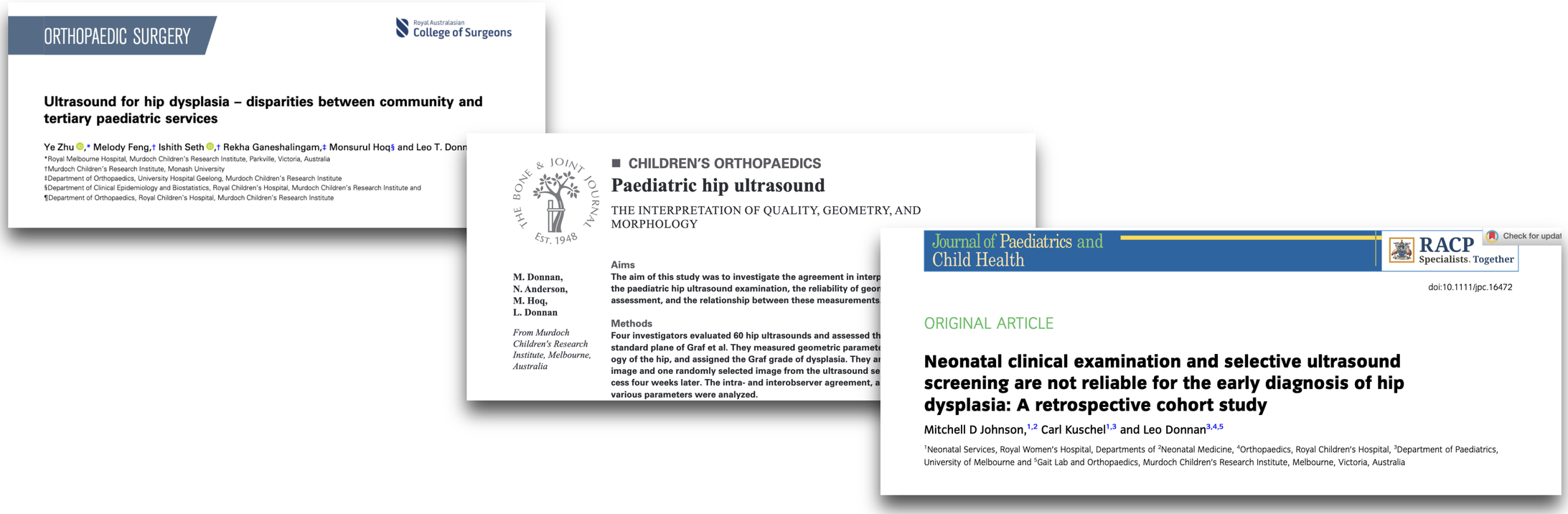
How do we effect change?

Is the potential solution valid?

What is the current status

Published 2025

- Neonatal clinical examination and selective screening
- Pediatric Hip Ultrasound Interpretation
- Ultrasound for DDH- disparities between services



ORTHOPAEDIC SURGERY

Royal Australasian College of Surgeons

Ultrasound for hip dysplasia – disparities between community and tertiary paediatric services

Ye Zhu,* Melody Feng,† Ishith Seth,† Rekha Ganeshalingam,‡ Monsurul Hoq§ and Leo T. Donn

*Royal Melbourne Hospital, Murdoch Children's Research Institute, Parkville, Victoria, Australia
†Murdoch Children's Research Institute, Monash University
‡Department of Orthopaedics, University Hospital Geelong, Murdoch Children's Research Institute
§Department of Clinical Epidemiology and Biostatistics, Royal Children's Hospital, Murdoch Children's Research Institute and
¶Department of Orthopaedics, Royal Children's Hospital, Murdoch Children's Research Institute

THE BONE & JOINT JOURNAL EST. 1948

■ CHILDREN'S ORTHOPAEDICS

Paediatric hip ultrasound

THE INTERPRETATION OF QUALITY, GEOMETRY, AND MORPHOLOGY

M. Donnan,
N. Anderson,
M. Hoq,
L. Donnan

From Murdoch Children's Research Institute, Melbourne, Australia

Aims
The aim of this study was to investigate the agreement in interp the paediatric hip ultrasound examination, the reliability of geor assessment, and the relationship between these measurements

Methods
Four investigators evaluated 60 hip ultrasounds and assessed th standard plane of Graf et al. They measured geometric paramet ogy of the hip, and assigned the Graf grade of dysplasia. They a image and one randomly selected image from the ultrasound se cess four weeks later. The intra- and interobserver agreement, a various parameters were analyzed.

Journal of Paediatrics and Child Health

RACP Specialists. Together

Check for updat

doi:10.1111/jpc.16472

ORIGINAL ARTICLE

Neonatal clinical examination and selective ultrasound screening are not reliable for the early diagnosis of hip dysplasia: A retrospective cohort study

Mitchell D Johnson,[1,2] Carl Kuschel[1,3] and Leo Donnan[3,4,5]

[1]Neonatal Services, Royal Women's Hospital, Departments of [2]Neonatal Medicine, [4]Orthopaedics, Royal Children's Hospital, [3]Department of Paediatrics, University of Melbourne and [5]Gait Lab and Orthopaedics, Murdoch Children's Research Institute, Melbourne, Victoria, Australia

Imaging and Community Ultrasound Concerns

- Variable report quality
  - Over-diagnosis and under-diagnosis documented in registry audits
  - Communication gaps cause parental anxiety

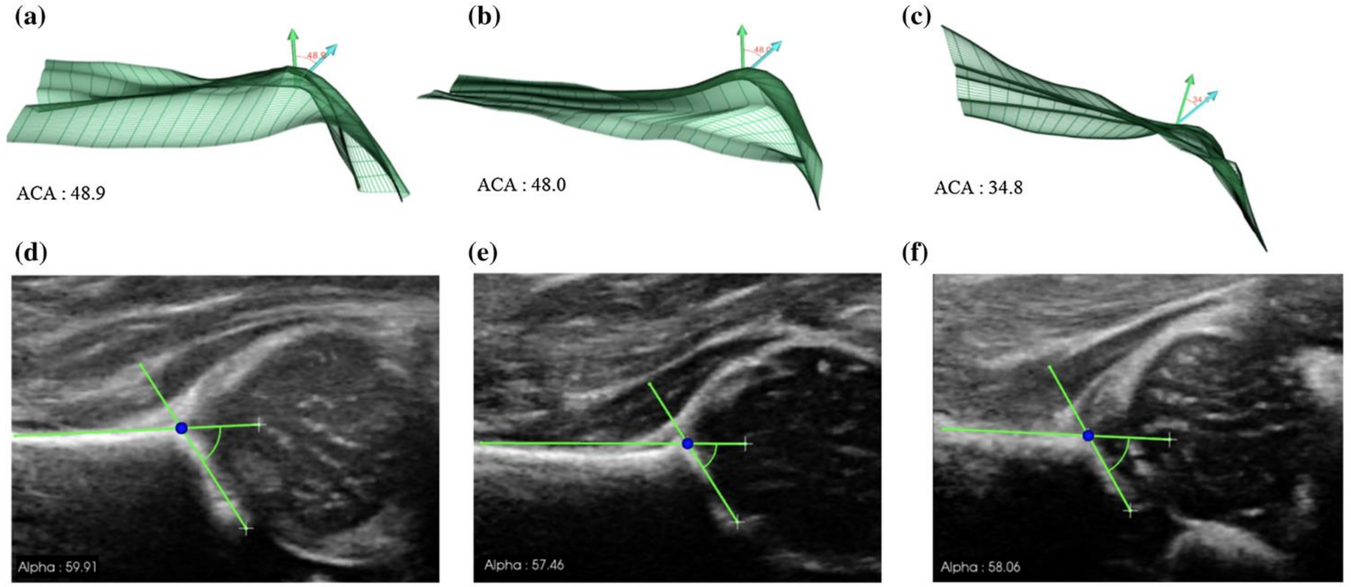
- Data Insight:
  - Moderate inter-rater reliability between community and tertiary ultrasound reports (Cohen's Kappa 0.45–0.57) .
  - Over 25% of community-classified "abnormal" hips normalised on tertiary review; ~20% dysplastic hips missed .
  - Reinforces need for quality assurance and standardised training .

How We Strengthen Quality

- Promote standardised referral templates and report language
- Provide families with clear post-ultrasound advice
- Support accredited training and feedback loops
- Promote accredited referral and reporting pathways.
- Encourage MCH workers to provide consistent advice and follow-up coordination.

Innovation: AI-Assisted Ultrasound

- AI-enabled portable probes – a new frontier
  - Goal: consistent imaging quality and regional access.
  - Portable AI-assisted ultrasound tools being trialed by VicHip research team .
  - Device analyses hip angles in real time and provides immediate interpretation on a tablet or smartphone .
  - Early studies show reliable imaging by operators with minimal training .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Alpha : 59.91
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Alpha : 57.46
(f)
Alpha : 58.06

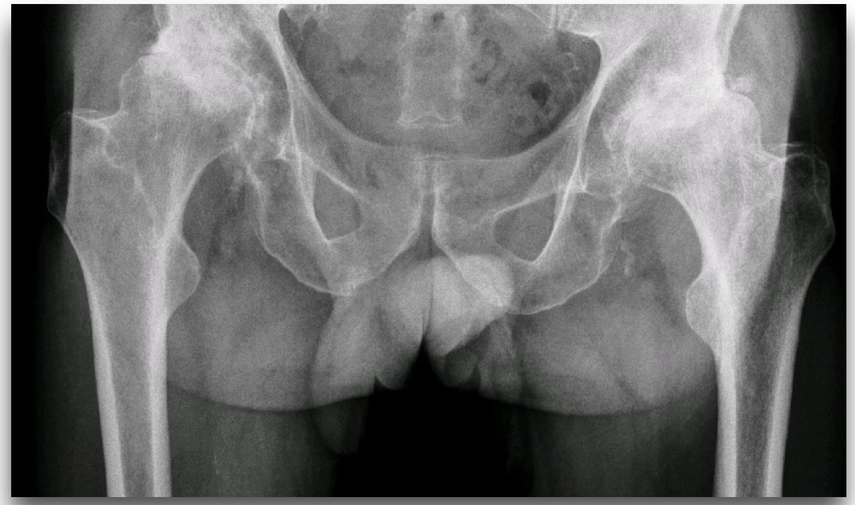
AI probes still in the research phase

- Need validation and training
- Could assist all MCH in the future

Stronger Together: The Takeaway

- Data + Experience + Innovation
- → Better detection, equitable care, empowered families.

- Data + Experience + Innovation
- → better child outcomes



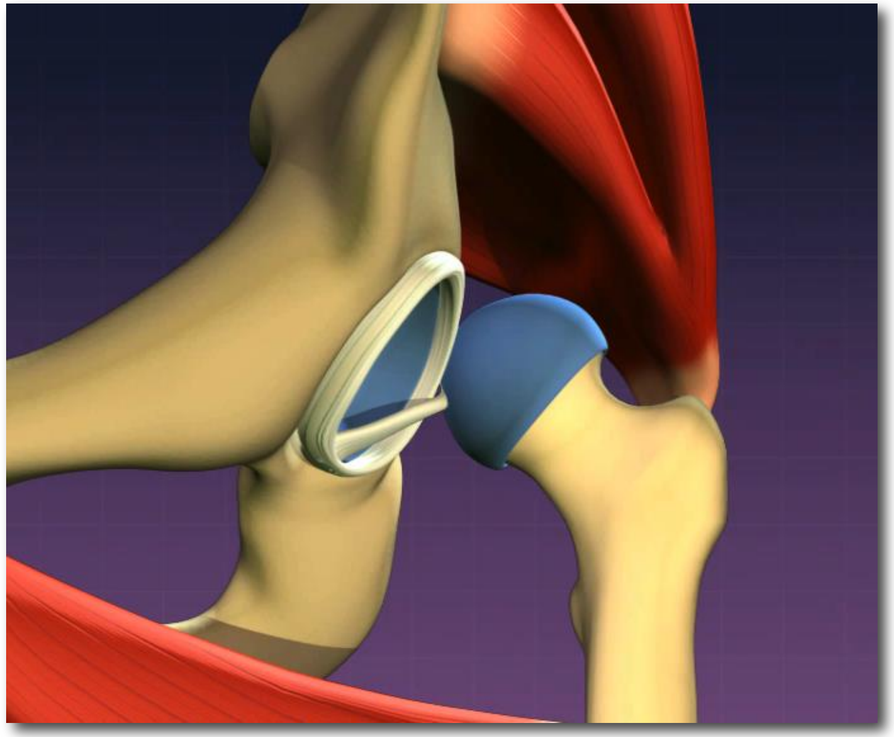
Unless we look long term we will never know

- Improved screening catches problems before they become crises
- Evidence-based strategies guide every treatment decision
- Reduced long-term disability means fewer children like Ava suffer
- Global influence spreads our discoveries worldwide

Unless we look long term we will never know
where we are going

Closing

- "Together, we can ensure every child in Victoria stands tall on healthy hips."



Please help us help you and complete this questionnaire

Thankyou