Pre-emptive Therapy for Infants Showing Early Signs of Autism

Improves Parent-Reported Communication and Language Skills

Kristelle Hudry

My place in the autism community

Understanding the presentation of autism in early life

How autism emerges in early life

How outcomes are optimised, for children and families including through early support

Background to AICES

Pre-emptive support may substantially improve outcomes

But requires both:

- Efficacious intervention

    Green, Charman, Pickles, et al. (2015). *Lancet Psychiatry, 2,* 133-140.

- Accurate early identification.

    Barbaro, et al. (2018). Presentation at the *International Society for Autism Research*, May.

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The AICES trial

Among 9- to 14-month-olds with signs of autism
6-months of iBASIS-VIPP would:

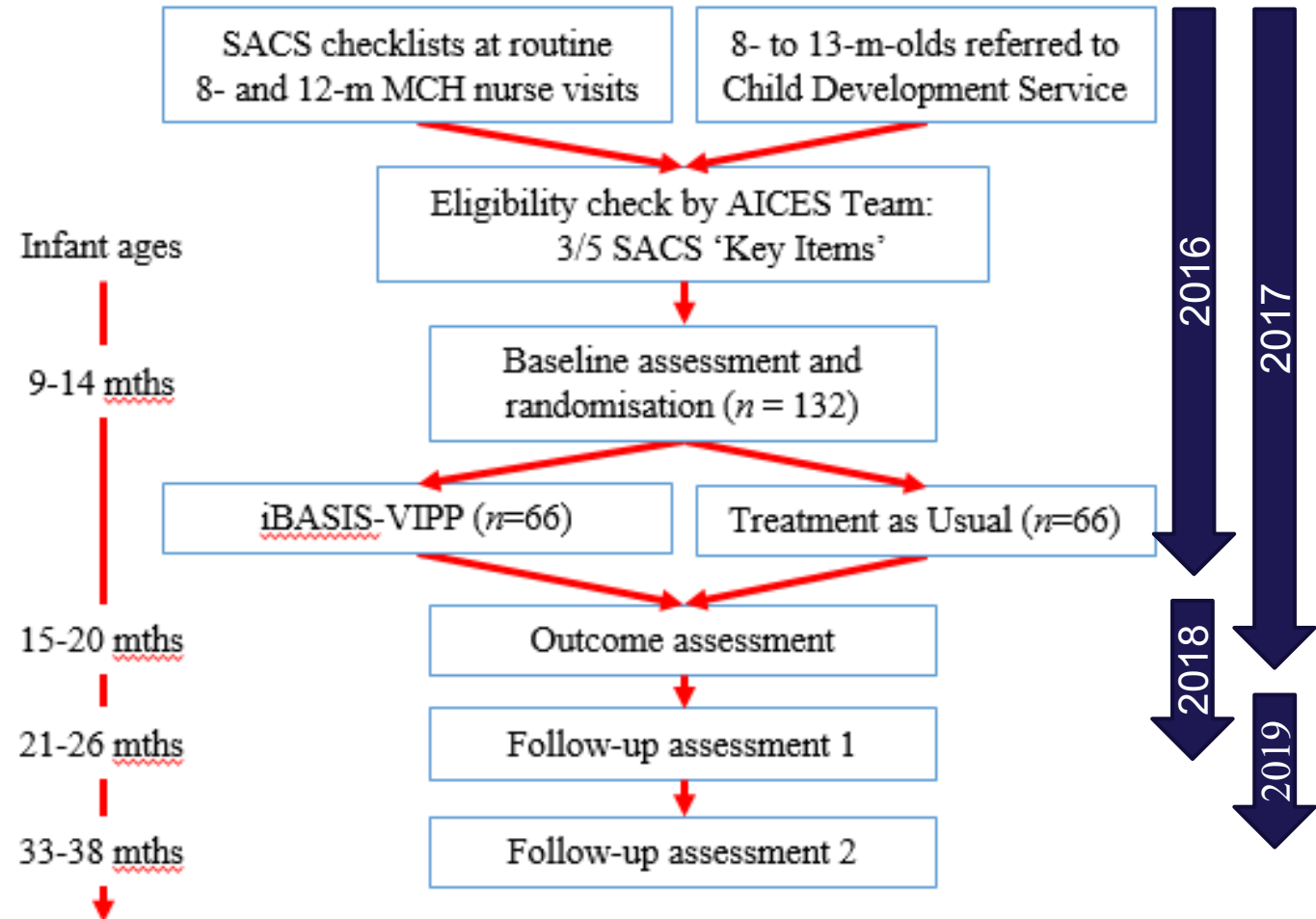- Improve parent-child interaction quality

- Improve infant developmental and language skills
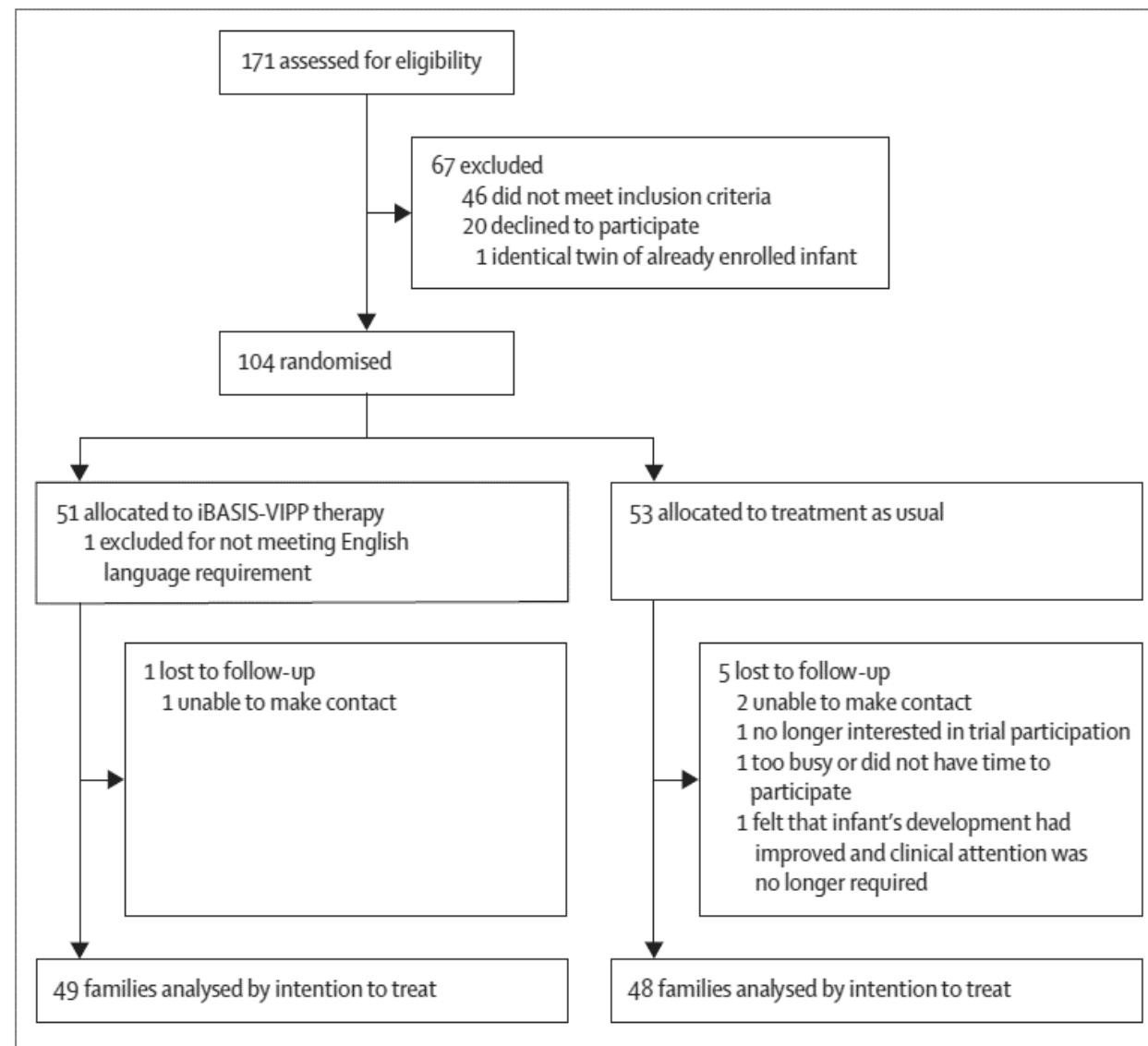
- Reduce the extent of early autism behaviours

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AICES trial design

Full-scale efficacy trial

- 2 site, 2 arm
- single (rater) blind RCT

SACS checklists at routine 8- and 12-m MCH nurse visits

8- to 13-m-olds referred to Child Development Service

Eligibility check by AICES Team: 3/5 SACS 'Key Items'

Infant ages

9-14 mths — Baseline assessment and randomisation ($n = 132$)

iBASIS-VIPP ($n=66$)

Treatment as Usual ($n=66$)

15-20 mths — Outcome assessment

21-26 mths — Follow-up assessment 1

33-38 mths — Follow-up assessment 2

2016 2017 2018 2019

AICES
The Australian Infant Communication and Engagement Study

AICES participants

	iBASIS-VIPP (n=50)	Treatment as usual (n=53)
Infant characteristics		
Sex		
Boys	38 (76%)	32 (60%)
Girls	12 (24%)	21 (40%)
Older sibling with autism spectrum disorder	10 (20%)	10 (19%)
Chronological age (months)	12·40 (1·93)	12·38 (2·02)
Adjusted age (months)	12·12 (1·98)	12·31 (2·00)
Family characteristics		
Annual household income ≥AUD$50 000*	40 (95%)	44 (88%)
Mother completed university degree	33 (66%)	29 (55%)
Infant living with both biological parents	49 (98%)	52 (98%)

171 assessed for eligibility

67 excluded
  46 did not meet inclusion criteria
  20 declined to participate
  1 identical twin of already enrolled infant

104 randomised

51 allocated to iBASIS-VIPP therapy
  1 excluded for not meeting English language requirement

53 allocated to treatment as usual

1 lost to follow-up
  1 unable to make contact

5 lost to follow-up
  2 unable to make contact
  1 no longer interested in trial participation
  1 too busy or did not have time to participate
  1 felt that infant's development had improved and clinical attention was no longer required

49 families analysed by intention to treat

48 families analysed by intention to treat

Whitehouse, Varcin, Alvares … Hudry (2019). *Lancet Child and Adolescent Health, 3,* 605-15
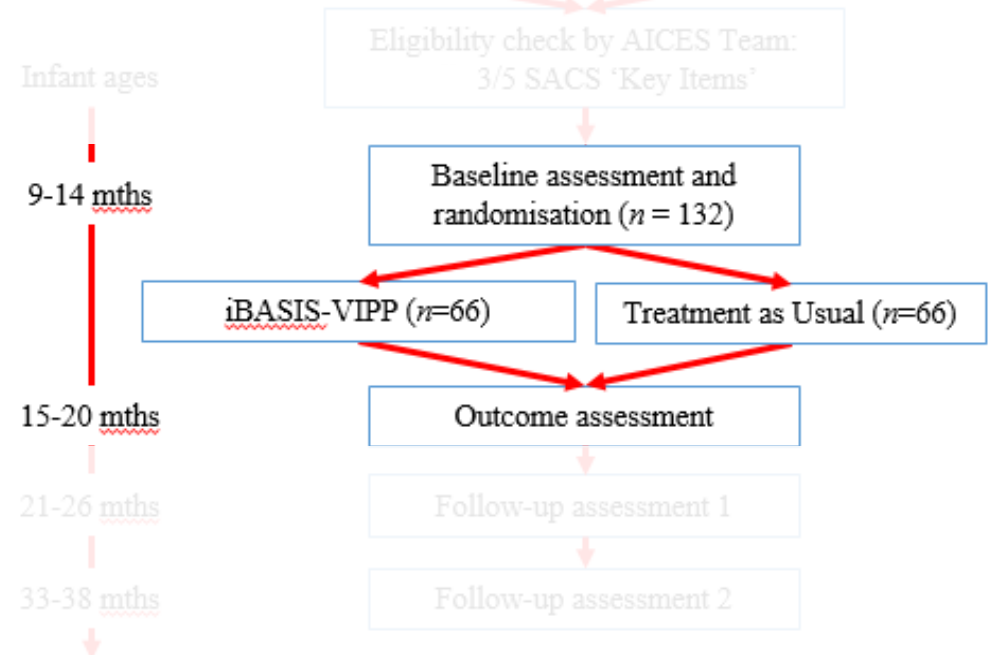
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iBASIS-VIPP therapy

10 fortnightly in-home sessions:

Parent, infant and AICES therapist

- Therapist filmed parent-infant interaction
- Guided reflection of previous session tape

  Highlighting:
  - Emerging infant skills
  - Supportive parent behaviours

- Daily home practice activities

Infant ages		
	Eligibility check by AICES Team: 3/5 SACS 'Key Items'	
9-14 mths	Baseline assessment and randomisation ($n = 132$)	
	iBASIS-VIPP ($n=66$)	Treatment as Usual ($n=66$)
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AICES trial measures

- Parent-child interaction quality (MACI; Wan et al. 2015)
  - Parent sensitive responsiveness & non-directiveness
  - Infant positive affect & liveliness

- Infant developmental and language skills
  - Mullen Scales of Early Learning (MSEL; Mullen, 1995)
  - Vineland Adaptive Behaviour Scales (VABS; Sparrow et al., 2000)

- Extent of early autism behaviours
  - Autism Observation Scale for Infants (AOSI; Bryson et al., 2008)

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Primary results

Hypothesised:

↓ early autism behaviours

↑ parent-child interaction quality

↑ assessed infant skills:

- Developmental abilities
- Communication & language

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Whitehouse, Varcin, Alvares … Hudry (2019). *Lancet Child and Adolescent Health, 3,* 605-15

Primary results

Hypothesised:

✗ early autism behaviours

✗ parent-child interaction quality

– assessed infant skills:

   ✗ Developmental abilities

   ✓ Communication & language

AOSI	0.22 (−0.19,0.63)
MACI – Infant Positive Affect	−0.20 (−0.60,0.21)
MACI – Infant Attentiveness	−0.09 (−0.50,0.32)
MACI – Caregiver Sensitive Responding	0.25 (−0.16,0.65)
MACI – Caregiver Non−directiveness	0.09 (−0.31,0.50)
MSEL – Visual Reception	0.09 (−0.31,0.50)
MSEL – Fine Motor	0.11 (−0.29,0.51)
MSEL – Receptive Language	0.34 (−0.06,0.75)
MSEL – Expressive Language	−0.05 (−0.46,0.35)
VABS – Socialization	0.42 (−0.02,0.87)
VABS – Communication	0.44 (0.00,0.88)
MCDI – Receptive Vocabulary	0.59 (0.15,1.03)
MCDI – Gestures	0.32 (−0.13,0.78)
MCDI – Expressive Vocabulary	0.53 (0.09,0.97)

Favours TAU → Favours iBASIS−VIPP

Whitehouse, Varcin, Alvares … Hudry (2019). *Lancet Child and Adolescent Health, 3,* 605-15

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Next steps for this research

Follow-up children to ages 2- and 3-years

- Recently completed, February 2020

Secondary coding of communication and language

- Natural Language Samples from parent-child interaction footage

Aggregate dataset with US-based
Adaptive Responsive Teaching (ART) trial (Watson et al., 2017)

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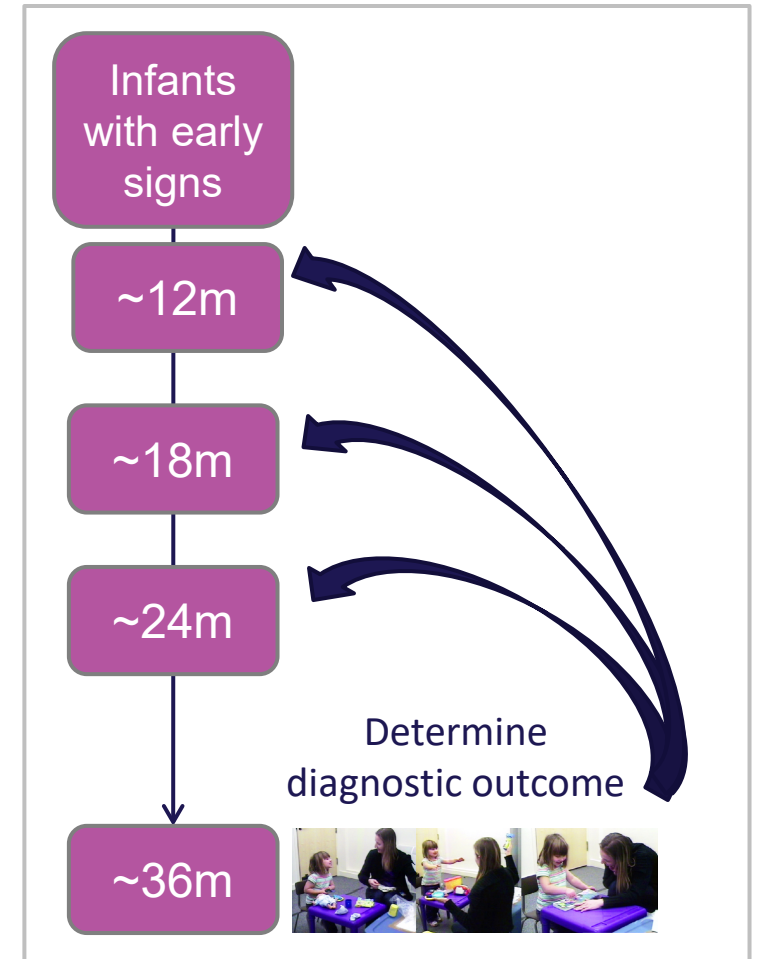
New trial of very early support

New trial recruiting expectant parents at two sites:

Perth   Melbourne

- Families where an existing child has autism, ADHD, intellectual disability
- Or where parent – expectant mum, biological dad – is autistic

Email: BabyAICES@latrobe.edu.au

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The Baby AICES Study

Pregnant women are invited to join this study about early infant communication

For pregnant women (in Melbourne and Perth) who:

- Have a family history of Autism, ADHD or intellectual disability
- Speak English as the main language at home
- Are pregnant with a single baby (eg. not pregnant with twins or triplets)

Thank you

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AICES

The Australian Infant Communication and Engagement Study

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Autism CRC is the world's first national, cooperative research centre focused on autism. We are taking a whole-of-life approach to autism focusing on early years, school years and adulthood.