

# Gestational Diabetes in Rural Antenatal Clinics: How do we compare?



|              |        |
|--------------|--------|
| Nearest Town | 13 km  |
| Health Care  | 300 km |

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Darling Downs Health and Hospital Service

University of Queensland Rural Clinical School

People per square kilometre

- Less than 0.1
- 0.1 to <1
- 1 to <10
- 10 to <100
- 100 or more

30% of Australians live in rural areas

29% of women deliver outside of major cities

- 12% deliver in outer regional or remote areas

Toowoomba

? Gestational Diabetes in rural Australia

Darling Downs HHS

- Toowoomba Hospital
- Warwick
- Dalby
- Kingaroy
- Stanthorpe
- Chinchilla
- Goondiwindi





# Aims

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1. Compare the antenatal diabetes services in hospitals of the Darling Downs Hospital & Health Service
2. Compare the outcomes for women & babies in Toowoomba vs rural hospitals in DDHHS
  - Access to diabetes education
  - Treatment of GDM
  - Adequacy of glucose control
  - Perinatal outcomes

# Methods

## 1. Service Audit of antenatal services in our district

- Toowoomba Hospital
- 6 rural hospitals – 3 small, 3 larger
- ✓ Semi-structured interviews conducted in 2015

## 2. Detailed retrospective chart audit (2012-13)

- All women diagnosed with GDM
  - ✓ GDM care received
  - ✓ BGLs & GDM management
  - ✓ Perinatal outcome data



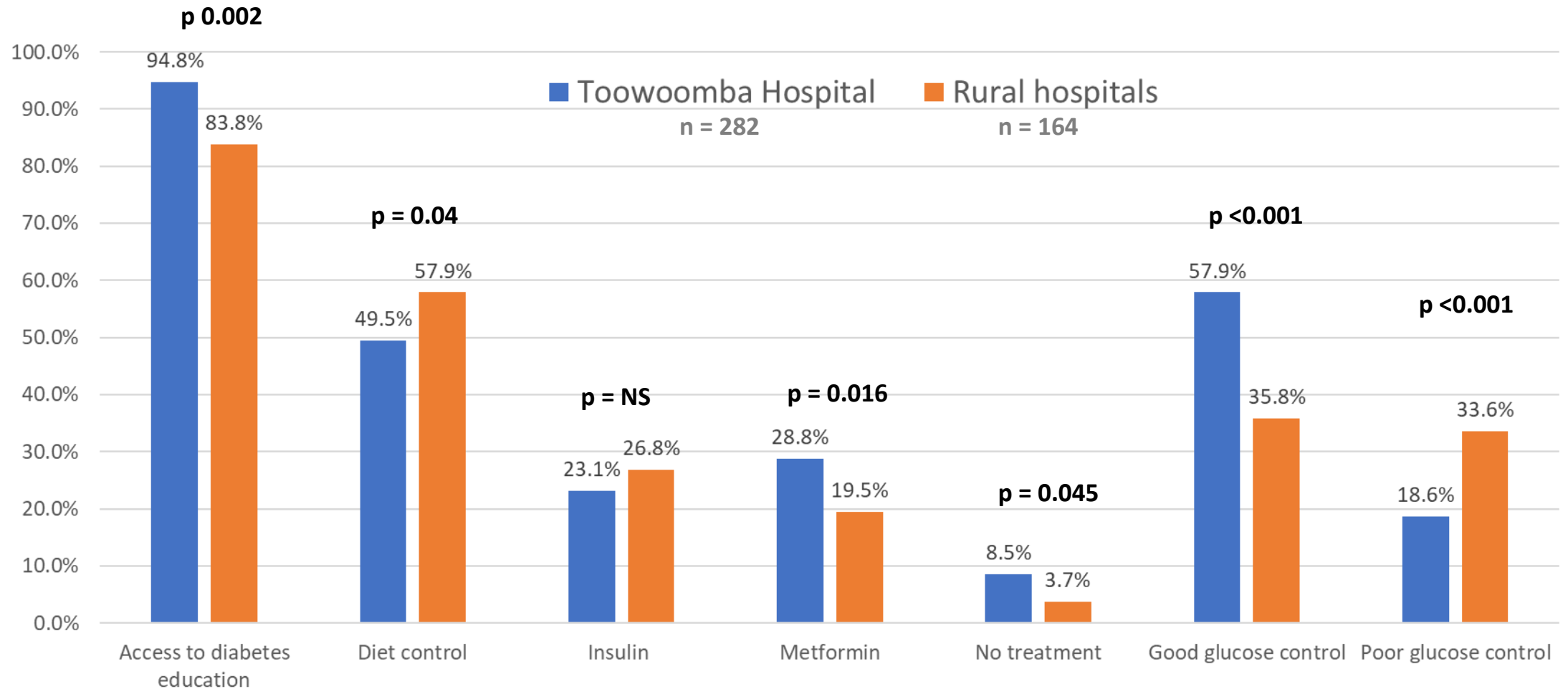
# Results: Access to Antenatal Diabetes Services

| <b>Antenatal diabetes care</b>                 | <b>Toowoomba Hospital</b> | <b>Large rural hospitals<br/>(n=3)</b> | <b>Small rural hospitals<br/>(n=3)</b> |
|--|---------------------------|--|--|
| Diabetes nurse education available ( /6)       | ✓                         | ✓                                      | ✗                                      |
| Dietitian available ( /1)                      | ✓                         | ✗                                      | ✗                                      |
| Glucose monitors provided ( /1)                | ✓                         | ✓                                      | ✗                                      |
| Consistent glucose targets ( /1)               | ✓                         | ✓                                      | ✓                                      |
| Start & titrate medical treatment ( /4)        | ✓                         | ✗                                      | ✗                                      |
| Ultrasound available ( /3)                     | ✓                         | ✓                                      | ✗                                      |
| Neonatal care available ( /4)                  | ✓                         | ✓                                      | ✗                                      |
| <b>Antenatal Diabetes Service Score ( /20)</b> | <b>20</b>                 | <b>14.3</b>                            | <b>6.3</b>                             |

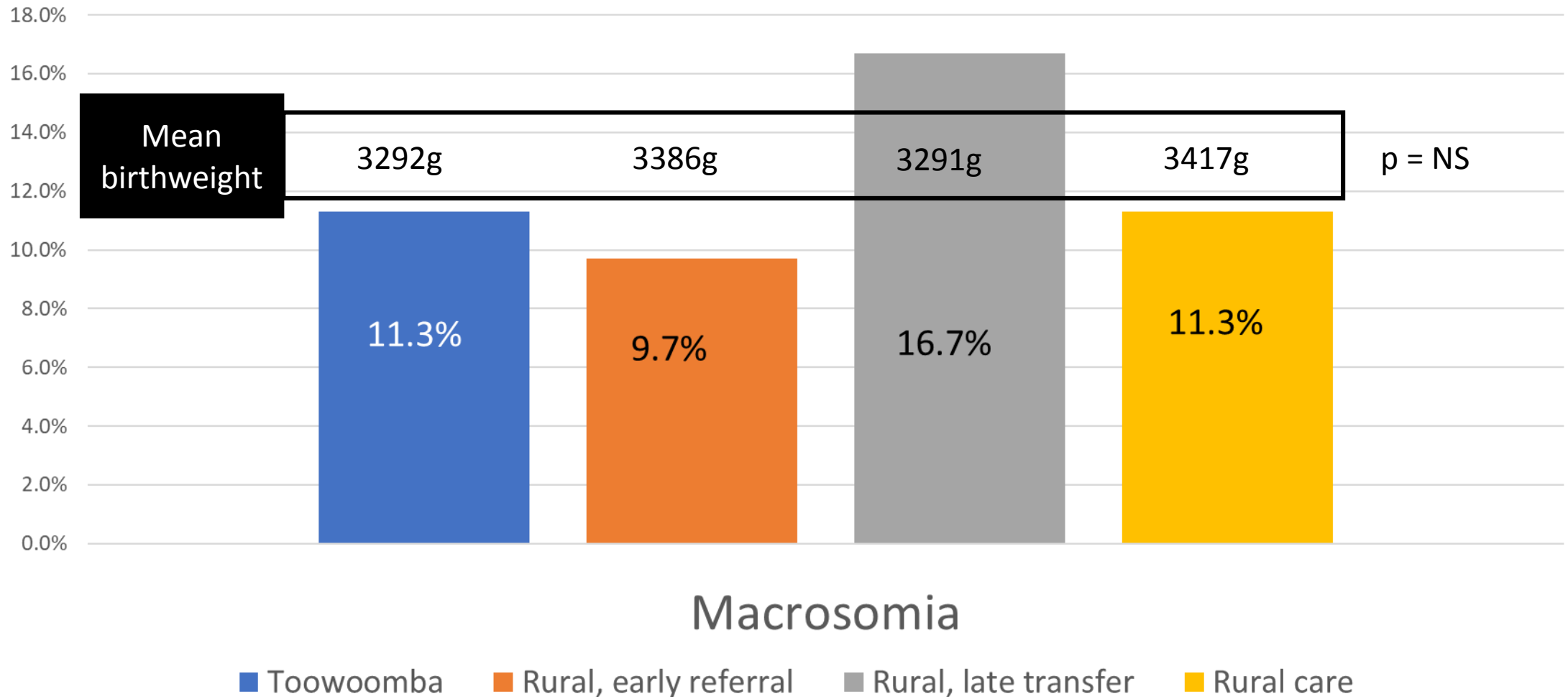
# Results: Baseline maternal characteristics

|                               | Toowoomba women (n=281) | Rural women (n = 170) | p-value |
|-------------------------------|-------------------------|-----------------------|---------|
| Mean Age (years)              | 29.9 ± 5.6              | 29.5 ±                | 0.473   |
| ATSI                          | 23 (8.3%)               | 23 (13.9%)            | 0.060   |
| Smoking                       | 60 (21.4%)              | 49 (29.3%)            | 0.057   |
| Weight at booking             | 86.0kg ± 23.9           | 83.1kg ± 22.5         | 0.207   |
| BMI ≥30 kg/m <sup>2</sup>     | 154 (55.5%)             | 80 (48.8%)            | 0.166   |
| Gestational age at booking    | 13.5 ± 4.9              | 17.6 ± 6.0            | <0.001  |
| Primiparous                   | 66 (23.7%)              | 42 (24.9%)            | 0.774   |
| Multiple pregnancy            | 11 (3.9%)               | 4 (2.4%)              | 0.588   |
| Mean fasting glucose (mmol/L) | 5.1 ± 0.9               | 5.2 ± 1.2             | 0.239   |
| Mean 2 hour glucose (mmol/L)  | 8.8 ± 1.5               | 9.1 ± 1.6             | 0.064   |

# Results: Antenatal diabetes care

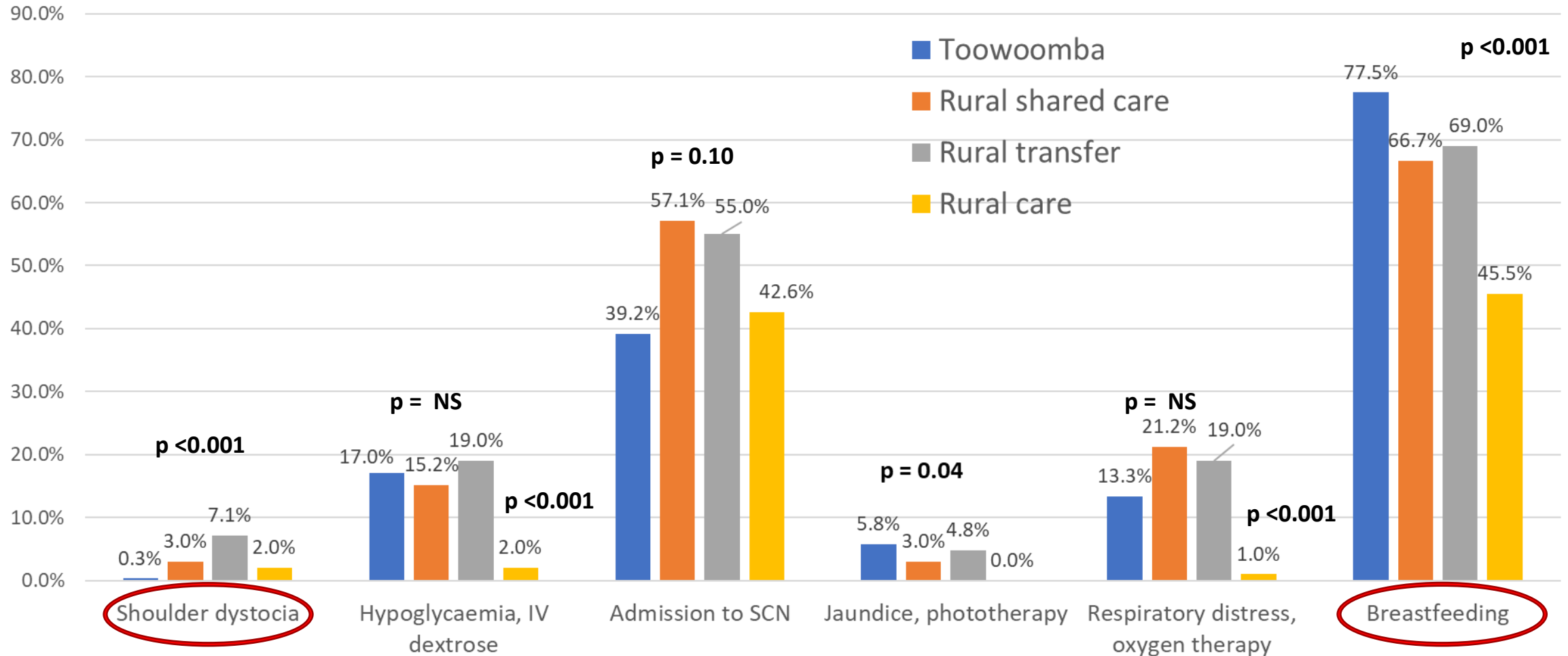


# Results: Birthweight and macrosomia (>4000g)





# Results: Neonatal complications



# Conclusion

- Compared with women in Toowoomba...
- Rural women with GDM were:
  - Less likely to access multidisciplinary diabetes ANC
  - Less likely to achieve optimal glucose control
  - More likely to be suffer **shoulder dystocia**
- Their babies were **no more likely** to experience:
  - Hypoglycaemia
  - Respiratory distress
  - Jaundice





# Acknowledgments

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