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# A survey of Knowledge, Attitude and Practice (KAP) in relation to the paramedic management of out-of-hospital obstetric emergencies

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## Introduction

Births occurring in paramedic care are infrequent and represent approximately 0.5% of annual ambulance caseload in Queensland.<sup>1</sup> When difficulties arise varying levels of assistance are required to support labour, intervene when complications occur and support a mother and newborn during and immediately post the birth.

Clinical knowledge and skills, particularly those used in obstetric emergencies, should be performed in accordance with evidence informed best practice to ensure the highest quality care is provided to both the mother and newborn; irrespective of how often those skills are required. However, knowledge and practical skills have the potential to atrophy when used infrequently, particularly in the absence of interventions aimed at reducing this. Such knowledge and skills atrophy have been clearly demonstrated in other low frequency conditions attended by paramedics.<sup>2,3</sup> It is assumed that current learning strategies used will result in knowledge retention and continuing competence, however there is a weak body of research to support this assumption.<sup>4</sup> For a paramedic to practice safely, knowledge, skills and attitudes must continually be reviewed. This is normally achieved through continuing professional development (CPD) provided by the employer or CPD opportunities pursued by the individual.

Childbirth and pregnancy related illnesses are also classified in the literature as responses that are one of the most stressful for paramedics.<sup>5,6</sup> This stress is reported to stem from the infrequency of such cases, a lack of control over the situation, a limited understanding of childbirth and the risk of potential complications.<sup>5</sup> Several studies emphasize the importance of good training and preparation to deal with these challenging cases.<sup>5,7</sup>

## Research Objectives

The following research questions were addressed:

1. What is the perceived and actual level of knowledge of paramedics concerning physiological birth and associated pregnancy and/or birth complications?
2. What is the perspective of paramedics regarding their initial and continuing education needs for the management of obstetric emergency responses?
3. How confident are paramedics in providing care to women experiencing out-of-hospital obstetric complaints?

## Methods

We have undertaken a cross-sectional study to explore the practices and learning needs of Registered Paramedics in Queensland Ambulance Service. Data were collected by a self-administered, anonymous and piloted Knowledge, Attitude and Practice (KAP) survey.

## Results

264 participants completed the survey. General demographic characteristics are summarised in Table 1. The median age of participants was 32 years (IQR 22,64). Participant gender identity was described as follows n=150 (56.8%) females, n=112 (42.4%) males, and less than 1% either preferred not to describe or to self-describe their gender identity.

| Education Level                   | Percentage |
|-----------------------------------|------------|
| Diploma                           | 11.0       |
| Post-Graduate                     | 19.7       |
| Undergraduate                     | 69.3       |
| Total                             | 100.0      |
| Years of service                  |            |
| <5 years                          | 26.9       |
| >20 years                         | 15.9       |
| 11-15 years                       | 17.0       |
| 16-20 years                       | 10.2       |
| 5-10 years                        | 29.9       |
| Total                             | 100.0      |
| Clinical Grade                    |            |
| Paramedic                         | 81.8       |
| Critical Care Paramedic           | 12.1       |
| Non-operational clinician/Manager | 4.5        |
| Total                             | 100.0      |



There was a strong indicator that participants were keen to receive regular in-service education in both obstetric emergencies and neonatal resuscitation. Participants reported to be reasonably skilled in recognising and managing complications, however, were neutral to feeling confident in doing so. The low exposure to obstetric emergencies was reported to impact on their confidence in managing these calls however, they felt confident in the consultant line and its ability to provide specialist knowledge.

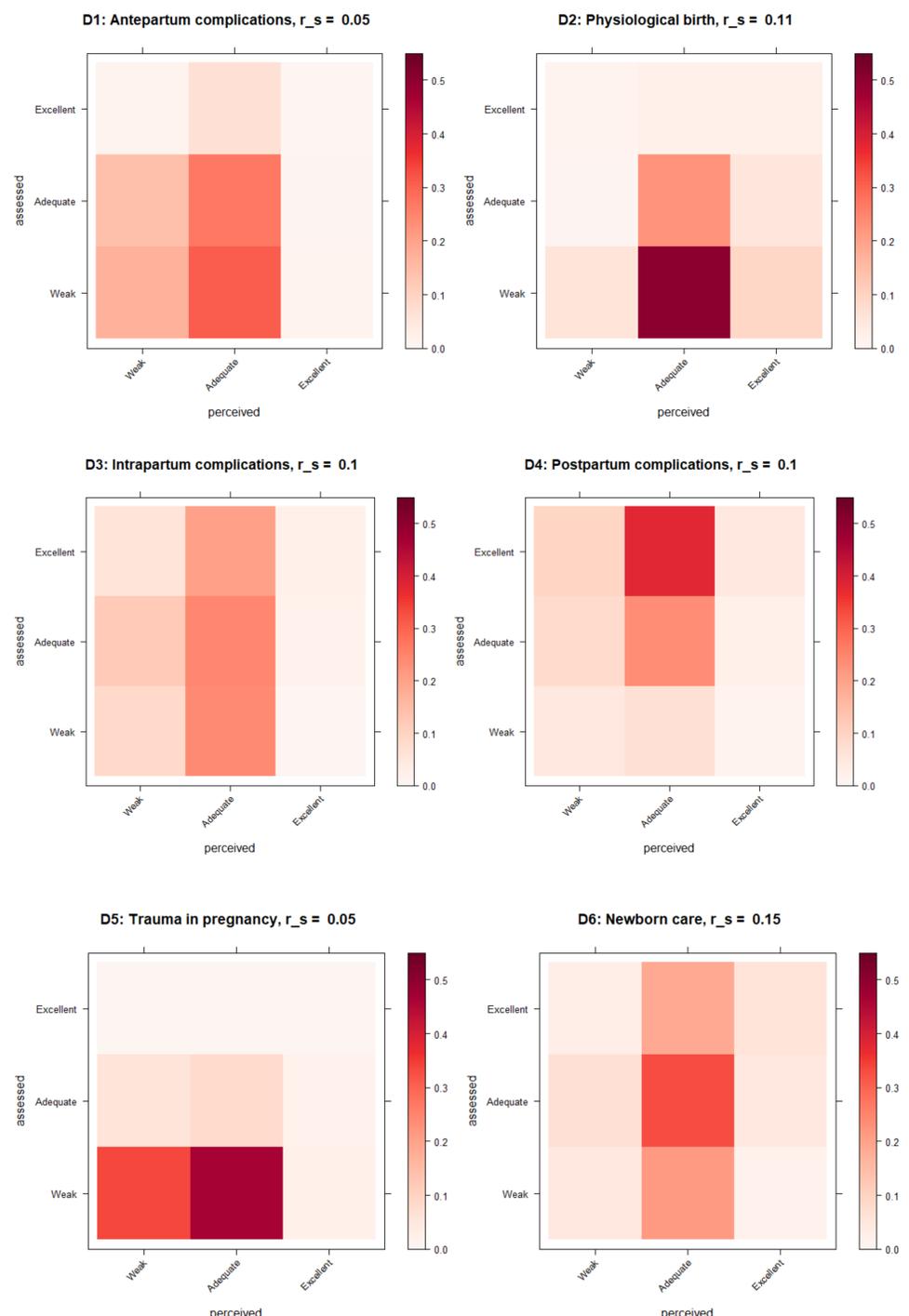
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Participants were asked to self-rate their level of knowledge in each of the six obstetric domains.

| Topic area                        | Weak n (%) | Adequate n (%) | Excellent n (%) |
|-----------------------------------|------------|----------------|-----------------|
| Antepartum complications          | 86 (32.6)  | 171 (64.8)     | 7 (2.7)         |
| Physiological birth               | 20 (7.6)   | 200 (75.8)     | 44 (16.7)       |
| Intrapartum (birth) complications | 69 (26.1)  | 184 (69.7)     | 11 (4.2)        |
| Maternal postpartum complications | 60 (22.7)  | 181 (68.6)     | 23 (8.7)        |
| Trauma in pregnancy               | 106 (40.2) | 146 (55.3)     | 12 (4.5)        |
| Newborn care (inc. resuscitation) | 39 (14.8)  | 193 (73.1)     | 39 (14.8)       |

By presenting a visual representation of these crosstabulations through heat maps (on a red spectrum palette, where a lighter colour corresponds to lower observed proportions, and a darker one to higher), some discernible patterns between perceived and assessed knowledge can be identified.



## Conclusion

Results suggest that there may be an opportunity for improvements in education and training of paramedics in obstetric and neonatal care. Further research is required to develop our understanding of educational need and, importantly, measure the optimum frequency of exposure to an educational intervention in order to prevent knowledge and skills atrophy and therefore maintain safe clinical practice.