

# The Pregnancy Research and Translation Ecosystem:

## Increasing the proportion of women meeting the dietary guidelines in pregnancy



Samantha Dawson, Siobhan O'Halloran, Rachael Cusworth, Luba Sominsky, Vidanka Vasilevski, Anna Chapman, Linda Sweet and Peter Vuillermin on behalf of the PRT-E investigator group

### BACKGROUND

A healthy prenatal diet is important for preventing diet-related pregnancy complications and optimising longer term maternal and child health. Yet only 9% of Australian women meet current nutritional guidelines for fruit and vegetable intakes.<sup>1</sup> Practical and feasible prenatal dietary interventions are needed.

### CONTEXT

The Pregnancy Research and Translation Ecosystem<sup>2</sup> (PRT-E) is a Western Alliance Flagship Program, partnering with health services from the Barwon, southwest and Grampians regions. PRT-E aims to co-design pregnancy care solutions to improve maternal and child health.

The clinical stakeholders identified *increasing the proportion of pregnant women meeting the dietary guidelines* as a research priority to be addressed.

### AIMS

To inform prenatal dietary intervention design, we aimed to understand:

1. PRT-E clinician perspectives on the factors driving poor dietary intakes during pregnancy
2. The current practice and needs around provision of dietary advice in pregnancy care.

### METHODS

PRT-E facilitated three online workshops with the study participants that comprise the PRT-E clinical stakeholder working group. Participants were midwives from regional and rural health services in south-western Victoria.

Through Group Model Building (GMB), we developed a Causal Loop Diagram (CLD) to thematically analyse the common factors driving poor prenatal diet quality in our region.

In addition to direct co-design input, knowledge generated from these sessions was incorporated into our existing *Bugs & Bumps* smartphone prenatal dietary intervention and our randomised controlled trial design. *Bugs & Bumps* aims to improve prenatal diet quality and is based on our previous successful face-to-face educational dietary intervention for pregnant women.<sup>3</sup>

### RESULTS

The three workshops were attended by a total of 21 clinical stakeholders. Thematic analysis of the causal loop diagram revealed five key themes driving the poor diet quality in pregnancy (Figure 1).



Figure 1. Stakeholder-identified themes driving the increasing rates of poor dietary intakes

The stakeholders indicated a need for efficient, cost-effective solutions that support clinical teams to provide high quality dietary advice, while overcoming time barriers and discomfort due to weight-related stigma.

### DISCUSSION

To enhance practicality and feasibility of dietary interventions, design elements should consider pregnant women's dietary knowledge and education, their access to healthy food, their social, cultural and personal circumstances, and their clinical care experience.

### RESEARCH TRANSLATION

These findings informed how our *Bugs & Bumps* smartphone app could operate within clinical service delivery. Based off co-design input, we created a new app feature that surveys pregnant women's dietary intakes and provides feedback advice written by dietitians focused on improving diet quality (rather than weight), that can be discussed with clinicians.

We were recently awarded MRFF funding to trial *Bugs & Bumps* within the PRT-E. If our *Bugs & Bumps* app is efficacious, we will evaluate potential translation into pregnancy care within the PRT-E participating services.

### CONCLUSIONS

PRT-E advances the feasibility of pregnancy care research through essential co-design. The feasibility of prenatal dietary interventions operating within clinical care may be enhanced if their designs address key stakeholder-identified drivers of poor diet quality.

### REFERENCES & ACKNOWLEDGEMENTS

1. ABS, 2022 <https://www.abs.gov.au/statistics/health/health-conditions-and-risks/dietary-behaviour/latest-release>.
2. PRT-E, <https://prte.deakin.edu.au>
3. Dawson et al. 2021 Public Health Nutr.

We thank the stakeholders for dedicating time to participate in this study. This work was supported by the Western Alliance Flagship Research Program.

