

# Study highlights reasons behind antibiotic use in children in rural and remote Northern Territory

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Northern Territory mothers living in remote or rural areas often make decisions about the need for antibiotics for their children out of fear or

based on the advice of their personal network a new study by Charles Darwin University (CDU) researchers has found.

Lead author and CDU Ph.D. student Stephanie Marsh has explored the factors that contribute to a parent's decision to give their [children antibiotics](#) to learn more about overuse and misuse of antibiotics, a key driver for the acceleration of antimicrobial resistance (AMR). The research is published in the journal *PLOS ONE*.

AMR, which is when micro-organisms such as bacteria and fungi defeat the drugs designed to kill them, is fast becoming an urgent global health threat.

Marsh said as children are among the highest recipients of antibiotics, there is a great need for understanding the drivers of parental decisions towards their children's antibiotic use.

"There is [limited information](#) around antibiotic use and the reasons behind it in rural and [remote areas](#) in the NT," Marsh said. "We need to learn about and understand these behaviors, including those that are less optimal to help find ways to combat AMR."

For the study, Marsh conducted focus groups with mothers in rural and remote communities across the Territory.

A significant finding from the study revealed that decisions about the use of antibiotics were not always knowledge based and were often driven by fear of serious illness.

"The mothers we spoke with displayed some accurate knowledge that antibiotics treat bacterial infections, which contributed to their general understanding of the role of antibiotic medicines," Marsh said.

"However, decisions about the use of antibiotics were not always based on knowledge with parental beliefs also guiding opinions and behavior."

When making health decisions about the use of antibiotics, participants in the study indicated that they often obtained guidance from others.

"The mothers reported that despite favoring the doctor's advice when deciding on antibiotic treatment for their child, they also highly valued input from others in their social network, such as friends and family," Marsh said.

"While they may obtain this advice differently and for varying reasons, nearly all parents reported to seek additional direction from others to alleviate their concerns."

Interestingly, the study found that mothers are more cautious in their approach towards antibiotics use in infants. "We saw differences in the findings between first time mothers of a child less than 12 months of age and mothers with more than one child," Marsh said.

"First time mothers with babies had the most optimal behaviors with antibiotics, this was likely due to these parents having less exposure to using antibiotics and managing childhood illnesses than parents with older and multiple children."

Access to health care also played a significant role in the mother's decisions to utilize antibiotics with nearly all mothers raising difficulties with their children being seen by a GP in a timely manner.

Marsh's supervisor Professor Mitchell Byrne said the findings from this research would help inform interventions to reduce the impact of AMR.

"From this study, we now understand the drivers behind parental

decisions to give their children antibiotics in rural and remote areas which will help us to formulate a range of primarily educational based interventions."

The project team which includes CDU Lecturer in Psychology Dr. Sara Parsafar, who is co-supervisor, will now look to commence a systemic review of parental decisions regarding [antibiotic use](#) in children across the world to assist with the development of interventions.

**More information:** Stephanie A. Marsh et al, What influences parental decisions about antibiotic use with their children: A qualitative study in rural Australia, *PLOS ONE* (2023). [DOI: 10.1371/journal.pone.0288480](#)

Provided by Charles Darwin University

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