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Research paper

Critical care nurses' responses to clinical scenarios involving cardiopulmonary resuscitation for deceased inpatients without a Do Not Resuscitate order: A cross-sectional study

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ABSTRACT

Background: Current Australian resuscitation training focusses on the practical application of cardiopulmonary resuscitation but lacks clarity on when it is inappropriate. Nurses are often first responders to inpatient emergencies and may take different approaches to cardiopulmonary resuscitation due to their views about its benefit. There is a lack of literature on how the absence of Do Not Resuscitate orders affect nurses' decisions regarding resuscitation in hospital settings.

Objective: The aim of this study was to explore nurse's views of initiating cardiopulmonary resuscitation on inpatients with unequivocal signs of death without a Do Not Resuscitate order, using hypothetical scenarios.

Methods: The cross-sectional survey recruited nurses across five Australian hospitals between October 2023 and April 2024. Participants were provided two hypothetical clinical scenarios (scenario 1: Mr D, an 84-year-old man; scenario 2: Mr G, a 35-year-old man). In both scenarios, the patients had unequivocal signs of death and absent Do Not Resuscitate orders. Respondents were asked to indicate their actions. Responses from participants working in the intensive care unit, emergency department, or critical care are reported here. Results were analysed using descriptive statistics.

Results: Eighty participants working in the intensive care unit, emergency department, or critical care completed the survey. Most nurses indicated they would call a Code Blue and initiate full resuscitation in both scenarios (scenario 1: 51.3% [n = 41] vs scenario 2: 92.5% [n = 74]). Fear and a misunderstanding of the law was a recurring reason for initiating resuscitation in both scenarios. Ethical judgement and family's expectations were predominant reasons for initiating resuscitation for the younger patient (scenario 2).

Conclusions: Most nurses working in the intensive care unit, emergency department, or critical care areas chose to call a Code Blue and initiate full resuscitation in both scenarios where patients showed unequivocal signs of death and an absent Do Not Resuscitate order. Nurses' decisions were influenced by multiple factors, including patient's age and misconception of the law.

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1. Introduction

The aim of cardiopulmonary resuscitation (CPR) is to restore circulation and maintain blood flow to vital organs. CPR utilising external cardiac compression was described in 1960s.[1,2] Prior to the development of CPR, in-hospital cardiac arrests were addressed surgically with direct cardiac massage via an open thoracotomy, which delayed the crucial timely initiation of resuscitation.[3]

An estimated 3000 Australians experience an in-hospital cardiac arrest annually.[4] The decision by healthcare professionals to initiate CPR is impacted by advance care planning discussions and documentation of directives, including Do Not Resuscitate (DNR) orders. A DNR order, also known as a Not For Resuscitation (NFR) order or Do Not Attempt Resuscitation (DNAR) order, is a medical directive indicating the plan to withhold CPR. When faced with a patient who has arrested, healthcare professionals must consider the presence of a DNR order and withhold CPR if the directive is in place.

Resuscitation training both internationally and in Australia consistently focusses on the practical application of CPR but generally does not address situations where CPR may be withheld (other than where a DNR order is present).[5,6] This is significant not only because nurses are often first responders to emergencies in a hospital setting[7] but also because nurses may take different approaches to CPR in accordance with their views about its appropriateness. Nurses may, for example, perform a so-called "slow" code, described as tokenistic resuscitative actions that do not effectively revive an individual with cardiopulmonary arrest, where they believe actions "should" be taken on social, institutional, legal, or professional grounds even if likely to be futile.[8,9] Irrespective of how nurses respond in such situations, there are empirical data that suggest that such decisions may cause profound moral distress.[10]

Numerous studies have explored medical and nurse decision-making about CPR in situations where a DNR order has been made.[11,12] In contrast, there is limited information about nurses' decision-making regarding the initiation of CPR where a DNR order is absent.

2. Aims

The aim of this study was to explore nurses' views of initiating CPR in people with clear and unequivocal signs of death and with no DNR order in hospital settings, using hypothetical clinical scenarios.

3. Methods

3.1. Ethics approval

The study protocol was approved by the South Eastern Sydney Local Health District Human Research Ethics Committee (Reference: 2023_ETH01759).

3.2. Study design and setting

This was a multisite cross-sectional descriptive survey. It was conducted across five tertiary hospitals within New South Wales (NSW), Australia, between October 2023 and April 2024. Quantitative data were collected using hypothetical clinical scenarios to explore nurses' views regarding the initiation of CPR on patients without signs of life and no DNR order.

3.3. Survey development

The study instrument was developed through a literature review and consultation with the research team. The survey was disseminated via Research Electronic Data Capture (REDCap) electronic data capture tools hosted at South Eastern Sydney Local Health District.[13,14] The survey link was distributed to potential participants through digital communication (internal emails, staff meetings, and social media platforms) and via posters in high-visibility areas within the hospitals including education areas, staff break rooms, and restrooms.

Nurses working in adult inpatient wards at the five tertiary hospitals were eligible to participate in the study. This paper focusses on the results provided by participants whose specialty area is the intensive care unit, emergency departments, or critical care.

3.4. Informed consent

The QR code, which provided the link to the survey, included the participant information sheet and information regarding the voluntary nature of the survey and that by completing the survey, participants were consenting to participate in the study.

3.5. Hypothetical clinical scenarios

Participants were presented with two hypothetical clinical scenarios (Text Box 1). For each scenario, respondents were asked if

Text Box 1
Hypothetical clinical scenarios presented to participants

Scenario 1

Mr. D is an 84-year-old man who was admitted to your ward with severe back pain from a pathological fracture of the pelvis due to widely metastatic non-small-cell lung cancer. He has been given appropriate pain relief by the palliative care team but has continued to deteriorate, experiencing agitated delirium and becoming progressively weaker. Following discussion of his prognosis with the patient and his family, plans have been made for Mr. D to be discharged for end-of-life care at home. However, a formal DNR order has not been documented, pending the arrival of interstate relatives. He has no advance care directive. In preparation for discharge, he is on twice daily observations.

On the 12th day of his admission, you enter Mr D's room after handover to find him unresponsive, cold, cyanosed, pulseless, and stiff. What do you do?

Scenario 2

Mr G. is a previously well, 35-year-old man, admitted after a motor bike accident, with multiple rib fractures, a pelvic fracture, and a femoral shaft fracture, for which he has had surgery (undergone internal fixation). After 4 days in the intensive care unit, he is transferred to your ward for his ongoing treatment. He has been managed with appropriate pain relief, Thrombo-Embolic Deterrent (TED stockings, and Deep Vein Thrombosis (DVT) prophylaxis. He is tolerating an oral diet, and there have been no major concerns raised about him. He is expected to make a good recovery and has been on routine four hourly observations.

On the 14th day of his admission, you enter Mr G's room after handover to find him unresponsive, cold, cyanosed, pulseless, and stiff. What do you do?

DNR: Do Not Resuscitate.

they would perform full CPR limited CPR, or confirm the patient has no signs of life, and then provide a rationale for their action. Each scenario was followed by seven questions exploring the participant's attitudes towards CPR. The survey also included 14 questions about the participants' demographics and previous experience of performing CPR. In total, there were 21 questions which required tick-box responses. All questions included an option to choose "other", which then allowed respondents to provide a free-text response (Supplementary File 1).

3.6. Data analysis

Descriptive statistics were used to describe participants' demographics, responses to the scenarios, and the rationale for their responses.

4. Results/findings

4.1. Demographics

Of the 611 nurses who completed the survey, 80 (13.1%) participants identified their specialty area as intensive care, emergency department, or critical care. The majority were registered nurses (45/80, 56.3%), held a postgraduate degree (55/79, 69.6%), and worked in intensive care (62.5%). Most nurses (70/79, 88.6%) received Advanced Life Support training, and 71 of 79 (89.9%) had initiated CPR before (Table 1).

4.2. Responses to scenario 1, Mr D, an 84-year-old man with metastatic prostate cancer

For Mr D, half of the participants indicated they would call a Code Blue and initiate full CPR (41/80, 51.3%). One-quarter (20/80, 25%) of participants indicated they would confirm no signs of life and call the team to report death, and 22.5% (18/80) chose to call a Code Blue and initiate "limited" CPR. One person (1/80, 1.25%) indicated they would not call a Code Blue and perform "limited" CPR (Fig. 1).

Of the 41 participants who indicated they would initiate full CPR, 40 respondents provided a rationale. The five most commonly reported rationales for their decision were as follows: "In the absence of a DNR order, there is no option but to begin CPR" (36/40, 90%), "I am required by hospital policy to do so" (26/40, 65%), "I am required by law to do so" (19/40, 47.5%), "I am not legally permitted to certify death" (14/40, 35%), and "Doing so enables me to fulfil my duty of care to the patient" (12/40, 30%) (Table 2).

All but one of the 39 participants who indicated they would not initiate full CPR provided their rationales. The five most commonly reported reasons were as follows: "Doing so would be futile" (28/38, 73.7%), "Doing this would cause harm to the patient's dignity' (27/38, 71.1%), "Doing so would be unethical" (23/38, 60.5%), "Doing so would be disrespectful" (23/38, 60.5%), and two reasons ranked jointly in fifth position: "Commencing CPR in this situation is not the right thing to do" (19/38, 50%) and "It is what the patient would have wished" (19/38, 50%).

4.3. Responses to scenario 2, Mr G, a 35-year-old man, post motor vehicle accident

For Mr G, the vast majority of respondents indicated they would call a Code Blue and initiate full CPR (74/80, 92.5%). Four participants (4/80, 5%) indicated they would call a Code Blue and perform "limited" CPR, while only two (2/80, 2.5%) indicated they would confirm no signs of life and call the medical team to report the death. The option to not call a Code Blue and initiate "limited" CPR was not indicated by any participants.

The five predominant reasons provided for initiating full CPR were as follows: "Doing so enables me to fulfil my duty of care to the patient" (53/74, 71.6%), "I am required by hospital policy to do so" (44/74, 59.5%), "In the absence of a DNR order, there is no option but to begin CPR" (38/74, 51.4%), "It is the ethical thing to do" (34/74, 45.9%), and "It is what the patient's family would expect/approve of" (33/74, 44.6%) (Table 2).

Of the six participants who indicated they would not initiate full CPR, four participants provided rationales. Following are the five different rationales that were selected: "Doing so would be futile" (3/4, 75%), "I am confident I can determine when a patient is dead"

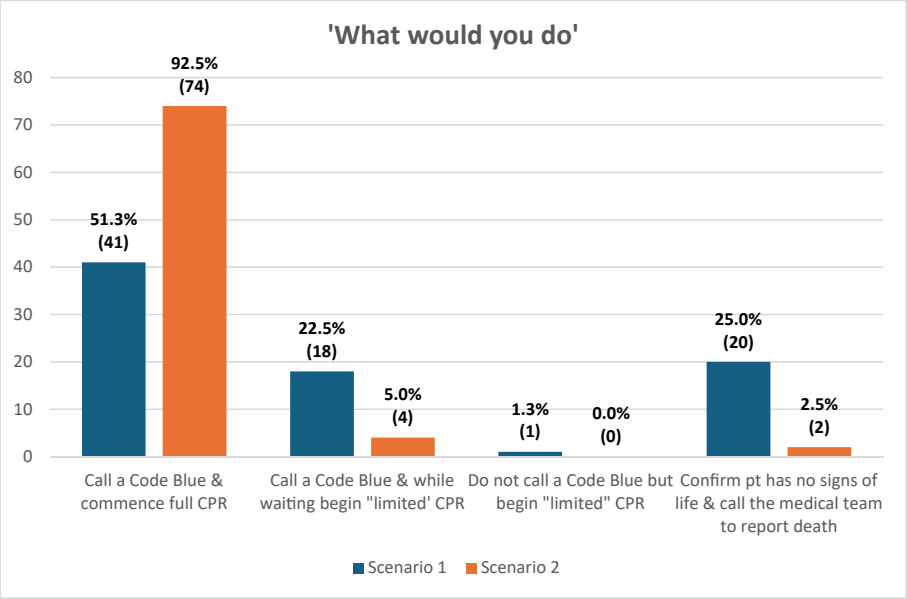

Fig. 1. Responses to "What would you do?" for both scenarios. Scenario 1: Mr D, an 84-year-old man. Scenario 2: Mr G, a 35-year-old man. CPR: cardiopulmonary resuscitation.

Table 1
Participant demographics (n = 80).

	N (%) n = 80
Gender	
Female	60 (75.0)
Male	19 (23.8)
Non-binary	1 (1.3)
Age	
<30 years	32 (40.0)
31–50 years	37 (46.3)
>51 years	11 (13.8)
Professional title	
Registered nurse	45 (56.3)
Advanced practice nurse (clinical nurse consultant, clinical nurse specialist, clinical nurse educator/nurse educator, or nurse practitioner)/nursing unit manager/nurse manager	35 (43.8)
Highest level of education (n = 79)	
Bachelor's degree	24 (30.4)
Postgraduate certificate	33 (41.8)
Masters	22 (27.8)
Years of clinical experience	
5 years or less	27 (33.8)
6–20 years	37 (46.3)
21 years or more	16 (20)
Main specialty area	
ICU	50 (62.5)
ED	28 (35.0)
Critical care	2 (2.5)
Years in specialty area	
<2 years	13 (16.3)
2–5 years	20 (25.0)
6–10 years	17 (21.3)
11–20 years	22 (27.5)
21–30 years	4 (5.0)
> 30 years	4 (5.0)
Highest level of CPR training (n = 79)	
Basic Life Support	9 (11.4)
Advanced Life Support	70 (88.6)
Ever initiated CPR (n = 79)	
Yes	71 (89.9)
No	8 (10.1)

CPR: cardiopulmonary resuscitation; ED: emergency department; ICU: intensive care unit.

(2/4, 50%), "Doing so would cause (moral) harm to nursing staff" (1/4, 25%), "There is no duty of care to commence CPR in situations like this" (1/4, 25%), and "There is no legal obligation to commence CPR in situations like this" (1/4, 25%).

5. Discussion

The results of this study show that despite unequivocal signs of death and in the absence of a DNR order, most nurses who work in the intensive care unit, emergency department, and critical care area have reported they would commence CPR on a patient found to be "unresponsive, cold, cyanosed, pulseless, and stiff". Approximately half of the participants indicated they would initiate full CPR in scenario one compared to 92.5% in scenario 2. This suggests that differences between the two scenarios influenced nurses' decision-making. While it is impossible to determine with any certainty which factors were perceived by respondents as being clinically and ethically significant regarding the appropriateness of initiating CPR, the key differences between these two scenarios include the patient's age, comorbidity, and perceived effectiveness and benefit of CPR. The impact of these factors on nurses' decision-making should be explored in more detail in future studies.

Recurring reasons for initiating full CPR in both scenarios are uncertainty or misguided beliefs about institutional policy, law, and defensive practice. Ethical judgement and managing family's expectations were the predominant reasons reported for initiating full CPR in scenario two only.

In all Australian jurisdictions, a DNR order is not required for healthcare professionals to withhold CPR when clear signs of death are present (or, if in Queensland, CPR is inconsistent with best practice in acute emergencies).[15–19] Despite the legal framework, this study revealed that most respondents chose to initiate full CPR on patients displaying signs of irreversible death. A recurring issue among respondents was misinterpretation of the law and policy, characterised by a perceived obligation to commence CPR in the absence of a DNR order and a desire to fulfil "duty of care" even when a patient is dead. Moreover, 35% of respondents who stated they would initiate CPR indicated they felt obliged to do so because they were not legally permitted to certify death. It is noteworthy, however, as while medical practitioners must legally certify death in NSW, registered nurses, midwives, and qualified paramedics can verify death in the absence of a medical practitioner.[20]

The study findings highlight how clinical judgement and patient care may be influenced by misperceptions of legal and policy obligations of healthcare professionals and fear of the law. It is clear that healthcare professionals may decide to initiate CPR, even when they are not legally obliged to do so and where it is not clinically appropriate, such as where a patient has unequivocal signs of death. These decisions may be made not to benefit the patient but to mitigate their own distress[21,22] and/or to protect themselves from undesirable professional or legal consequences, including claims of malpractice, a phenomenon known as "defensive practice".[23–26] In this regard, CPR appears no different to other clinical judgements or types of clinical care, with studies showing that healthcare professions working in a range of healthcare systems order excessive tests, overprescribe drugs, and provide unnecessary treatments to avoid legal liability, professional censure, or disputes between healthcare professionals and patients.[27,28]

Age was a key difference in the two scenarios presented to participants. While the extent to which age influenced participant responses was not explored in our study, the age at which a patient dies is the major determinant of nurses' views regarding the existential or social "acceptability" of death,[29] But while there may often be a good reason to take account of a patient's age when making decisions about the appropriateness of treatment, there are other times, such as in the scenarios provided here, where both patients, irrespective of their age, would obtain no benefit from CPR, and that basing clinical decisions on the patient's age is neither relevant nor appropriate.[30] In this regard, our results suggest that nurses' decisions about CPR may be influenced by institutional policies, legal considerations, and perceptions of patient preferences, rather than an explicit assessment of medical benefit. These decisions may also reflect not only misperceptions of medical benefit but also differing attitudes towards death that are contingent upon the patient's age.[29–31]

5.1. Strengths

A strength of this study is that it includes multisite recruitment of participants across five hospitals within NSW. Regarding the hypothetical scenarios, the patients had multiple differences. The differences include age, reason for admission, medical history, and plan of care. Responses to the scenarios highlight potential differences in participants' decision-making processes, which may have been influenced by factors such as the patient's age and condition despite the common unequivocal signs of death and an absent DNR order. However, our study did not explicitly explore how these factors influenced decisions, and further research is needed to clarify these relationships. The free-text options for participants to explain their rationales allow for deeper insights into the

Table 2
Reasons for commencing full CPR for each scenario by domain.

Domain	Reason for commencing full CPR[a]	Scenario 1: Mr D, an 84-year-old man, n = 40 (%)	Scenario 2: Mr G, a 35-year-old man, n = 74 (%)
Managerialism (including policy)	I am required by hospital policy to do so.	26 (65.0)	44 (59.4)
	It is what my supervisors/managers would expect/approve of.	5 (12.5)	18 (24.3)
	In the absence of a DNR order, there is no option but to begin CPR.	36 (90.0)	38 (51.3)
Defensive practice (including legal paranoia)	Doing so enables me to fulfil my duty of care to the patient.	12 (30.0)	53 (71.6)
	I am required by law to do so.	19 (47.5)	31 (41.9)
Ethical judgement	It is the ethical thing to do.	5 (12.5)	35 45.9
	It is important to "do something"—even if it is likely to be futile.	1 (2.5)	12 (16.2)
	It is what a good nurse would do.	0	12 (16.2)
Clinical judgement	It is what I was trained to do.	8 (20.0)	32 (43.2)
	It is what I and my colleagues usually do in this situation.	1 (2.5)	14 (28.9)
Harm to the patient	Doing so would be respectful.	1 (2.5)	13 (17.6)
	It is what the patient's family would expect/approve of.	2 (5.0)	33 (44.6)
	It is what the patient would want.	0	21 (28.3)
	It is what the family would want.	1 (2.5)	22 (29.7)
Harm to the nursing staff	It is what my colleagues would expect/approve of.	2 (5.0)	14 (18.9)
	It is important to me to feel like a good nurse.	0	4 (5.4)
Nurses not trained/not qualified/not able to take responsibility for deciding someone is dead	I am not legally permitted to certify death.	14 (35.0)	17 (22.9)
	I am not confident I can determine if a patient is dead.	1 (2.5)	2 (2.7)

CPR: cardiopulmonary resuscitation; DNR: Do Not Resuscitate.
[a] Participants could select multiple reasons.

participant's thought processes and decision-making for each scenario. Additionally, participants' anonymity was maintained in this survey, thereby encouraging participants to provide responses to the scenarios free from the influence of peers to minimise self-reporting bias.[32]

5.2. Limitations

As multiple factors may be influencing participants' decisions regarding the initiation of CPR, a combination of different variations between the scenarios may elicit different decisions. Scenarios presenting only one dissimilar variable, for example, patient age, reason for admission, or clinical condition, may expand the understanding of how a specific patient's characteristic may influence decision-making of CPR initiation. Another limitation is the discrepancy between the written scenarios and the real-life environment of the intensive care, emergency department, or critical care areas where the participants work. This incongruence may affect participants' decisions as their usual work setting is different to the scenario. Further emphasis on this difference is highlighted by the presentation of the patients in both scenarios. Of the three signs of death presented, rigor mortis (stiffness), algor mortis (coolness), and livor mortis (discolouration), rigor mortis may be observed 2 hours after death.[33] Due to the higher staff-to-patient ratio in critical care areas, it is arguable whether the signs of death presented in the scenarios would appear before it comes to the staff's attention that a patient has passed away. Consequently, the scenarios may not reflect a realistic setting for a critical care nurse. Also, the constant presence of medical staff in the critical care areas in real life may influence participants' responses to scenarios where the patients are admitted to a ward where medical staff and assistance may not be immediately available.[34]

This cross-sectional study relies on self-reported data. As mentioned previously, self-reporting bias is therefore a potential weakness as information collected from participants may be influenced by societal expectations.[32] Attitudes towards DNR orders may also impact the decision of initiating CPR.[35] Demographic data of participants' cultural and societal values may provide further insights into the rationale behind the decision-making process. As with all studies that rely upon responses to theoretical scenarios, it is also possible that there may be discrepancies between the nurses' self-reported responses and the way they would actually react when faced with similar situations on the unit. It is worth noting, however, that this may be both a limitation and a strength as this survey undoubtedly allows more time for critical thinking about how one would respond in a theoretical "emergency" compared with what occurs when one faces an unexpected situation in real life and must act quickly on the basis of intuition and patterns of behaviour.[36,37]

5.3. Recommendations

This study highlights that when presented with hypothetical scenarios, the vast majority of critical care nurses report that they would initiate CPR in patients with irreversible signs of death. These data demonstrate a knowledge gap and opportunity for implementing clinical education, including simulations, regarding when CPR may be futile in the presence of late signs of death. Unfounded legal concerns may indicate opportunities for unions, legal and professional bodies, or workplace organisations to educate nurses about their duties of care and their clinical scope of practice. Organisational policies and resuscitation training can be updated to address the gaps identified in this study regarding nurses' responsibilities and actions when patients are found without signs of life in the absence of a DNR order.

Importantly, our results suggest that this issue may not simply be an educational one but a professional, institutional, or cultural one. In this regard, what may be required is not simply enhancing education about CPR but engendering conversations about the professional and cultural values that support assumptions that CPR must always be performed in the absence of a DNR order. Moreover, it may require strategies that support nurses' agency to make decisions that reflect their own knowledge and clinical expertise.

6. Conclusions

In both hypothetical scenarios with patients showing no signs of life in the absence of a DNR order, the majority of nurses from the intensive care unit, emergency department, and critical care areas indicated they would initiate full CPR. Reasons for the decision to commence or not commence CPR were different between the two scenarios. Varying patient characteristics presented in the scenarios

may have influenced participants' choice of action and could be further impacted by cultural or societal values, as well as fear of legal ramifications and/or disciplinary action by employers. This study highlights the potential for implementing clinical education, updating organisational policies, and involvement of legal and professional bodies to clarify the guidelines surrounding the initiation of CPR in the absence of a DNR order, and the duty of care for nurses working in inpatient settings, as well as creating cultural change.

CRediT authorship contribution statement

Heidi Hoi Ying Hui: Data curation, formal analysis, writing - original draft, writing – review & editing.

Gemma McErlean: Data curation, formal analysis, funding acquisition, investigation, methodology, project administration, resources, software supervision writing – original draft, writing – review & editing.

Michael Watts: conceptualisation, investigation, writing – review & editing.

Susan Maitland: conceptualisation, investigation, writing – review & editing.

Sahn Zanotti: conceptualisation, investigation, writing – review & editing.

Suzanne Sheppard-Law: conceptualisation, investigation, writing – review & editing.

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Ian Kerridge: conceptualisation, methodology, writing – review & editing.

Anne Preisz: conceptualisation, methodology, writing – review & editing.

Linda Sheahan: conceptualisation, methodology, writing – review & editing.

George Skowronski: conceptualisation, methodology, writing – review & editing.

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Data availability statement

The data that support the findings of this study are available from the corresponding author, GM, upon reasonable request.

Declaration of competing interests

The authors have nothing to declare.

Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.aucc.2025.101254.

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