This submission is a synthesis of the findings and recommendations from a peer-reviewed research publication, addressed the second ToR of the Inquiry. The paper is open access and can be read in full here: https://www.sciencedirect.com/science/article/pii/S2352827322003081

The paper's full citation is: **Fotheringham, P., Dorney, E., McKinn, S., Fox, G.J. and Bernays, S., 2023. Protecting mental health in quarantine: Exploring lived experiences of healthcare in mandatory COVID-19 quarantine, New South Wales, Australia. *Social Science & Medicine-Population Health*, 21, p.101329.**

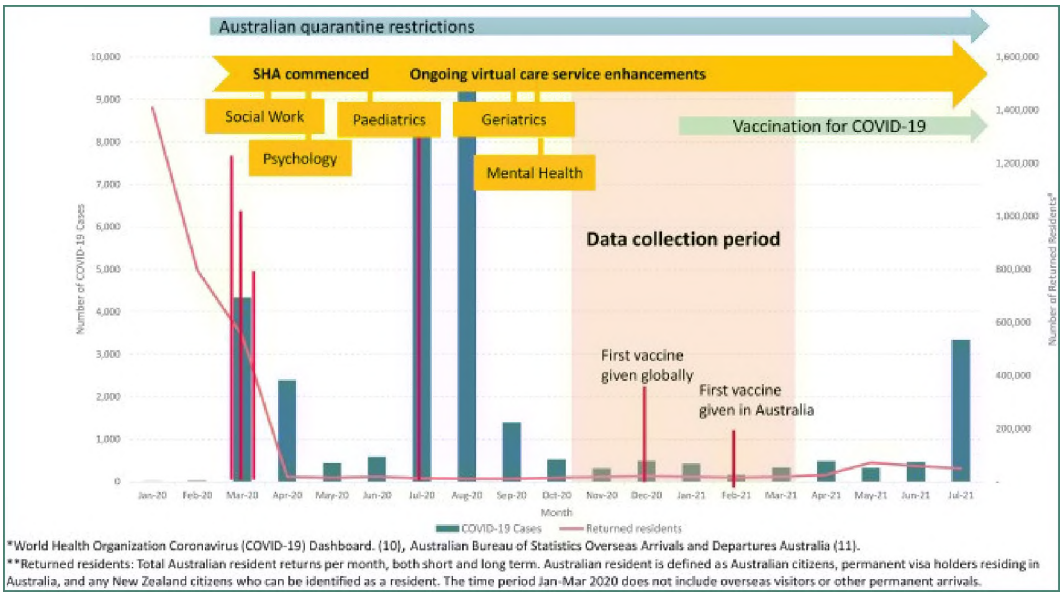
***RATIONALE**:* In response to the COVID-19 pandemic, Australia implemented mandatory hotel quarantine for returned international travellers from March 2020–November 2021. Healthcare was rapidly transformed and scaled up to facilitate delivery of face-to-face and virtual healthcare within quarantine facilities. At the invitation of the Sydney Local Health District and the leadership team responsible for delivering the healthcare in the Specialist Health Accommodation (SHA) as part of the Australian **F**ederal and New South Wales (NSW) State quarantine policy, we conducted a qualitative study to explore from the patient perspective, what a virtual model of healthcare may need to be aware of to respond to, protect, and mitigate people's mental health within a 'public health protection' context of quarantine.

The study was conducted by public health researchers working at the Universities of Sydney and Newcastle. This study provides an opportunity to use social science to identify learning, from the perspective of patients, that can further protect the mental health of those in quarantine and strengthen our pandemic preparedness in the future.

METHODS: The relative novelty of the experience of quarantine for international travellers at the time of the study leant its exploration well to qualitative methodologies, due to its hypothesis-generating purpose. The study used in-depth semi-structured interviews, conducted by telephone, videoconferencing, or face-to-face at the participants' request. Iterative analysis was conducted using an inductive thematic analytical approach, to generate patterns and themes across the data set.

Setting: **F**rom 1st October 2020 to 31st March 2021 (our data collection period) the virtual hospital delivered clinical care to 3661 unique patients; 858 were COVID-19 positive and 2803 were COVID-19 negative. Additionally, the virtual model provided care to 31 individuals with community acquired COVID-19 who quarantined in their home.

The virtual hospital model evolved considerably during this period with a wide range of additional services integrated into the care model. **Figure 1: Virtual care service development for the Special Health Accommodation**.



RESULTS: We interviewed 25 returned international travellers aged 18 years or older of any COVID-19 status who quarantined within SHA facilities between October 2020–March 2021. All were fluent in English. Interviews were held from Day 10 after entering quarantine, up until 72 days after leaving quarantine. The majority of participants reported being in or having retired from being employed in professional roles.

Perceived impact of quarantine on mental health: Participants identified three broad areas of concern. Firstly, their potential to transmit COVID-19, that created anxiety for all participants. This was most acute for those with a current diagnosis of COVID-19, who described feeling like a *"biohazard"* and *"dangerous"* (Participant 9), with one participant characterising their ongoing potential risk as making them feel like *"you're in some bio-Hollywood movie"* (Participant 5).

Secondly, the effects of losing personal freedoms in quarantine to protect the wider Australian community. Even though many accepted the broad public health principle of quarantine, nearly everyone struggled with the uncomfortable juxtaposition of the personal loss of freedom it required and were unhappy being in quarantine. *"Yes, we don't have sick people, which is great, but at what cost has that come at? I'm obviously not okay …. it's come at a huge, huge cost on my wellbeing."* (Participant 21).

Thirdly, it was common for participants to have left or be returning to Australia to attend to time-critical and emotionally significant personal needs, such as a close family member's deteriorating health or their own urgent medical needs, compounding the stress of their experience. This was compounded by the stressful bureaucratic entry into quarantine, which was characterised as strenuous and often expensive to navigate. The sense of personal sacrifice was intensified because they perceived that once in quarantine they could not attend to their urgent needs in this heavy biographical moment. *"We were told that she did not have long … I arrived on the 24th in the morning. I was tested on the 25th. I was informed on the 26th that I was COVID positive and then on the 28th my Dad informed me that my Mum had passed away." (Participant 6)*

Challenges exacerbated by the quarantine process: Participants felt lost within the 'faceless' quarantine administrative system they navigated prior to their actual arrival in Australia and during their mandated quarantine period. This cumulative experience compromised their expectations and experiences of person-centred care (PCC) once in quarantine. The personal tragedies occurring outside of quarantine were beyond the control of those providing care within the quarantine facility. However, there were two exacerbating factors participants considered to be within the remit of the 'quarantine system', although not necessarily easily acted upon by those delivering healthcare: their loss of control over basic needs (diet, little capacity to structure their own daily routine and inability to autonomously instigate cleaning activities) and a reduced recognition of their individual needs.

Protective factors and strategies: Factors that mitigated the potential mental health effects of the quarantine experience included: clear communication from staff which facilitated access to available support services and how to navigate the discharge process; access to outdoor spaces; and the opportunity to exercise. Other factors included those participants could choose to modify in their quarantine time, such as: exerting as much control over their routines as was feasible given the constraints and, if affordable, organising food deliveries to modify their diet, and rationing their consumption of news about COVID-19. Unsurprisingly, protective factors also included an absence of negative external life events or additional acute concerns about their health (beyond those related to COVID-19), as well as being vaccinated, which was beginning to emerge as an opportunity in the later months of data collection (see Fig. 1).

Although there was criticism of the depersonalised 'system', participants who had experience of both the police-run accommodation and SHA were able to contrast the care they received and described SHA facilities and staff in much more positive terms.

We identified two further protective strategies that exercised a more subtle effect. The first, often supported by participants' occupational training, was to deliberately adopt a very low threshold of expectation. The second was to exercise agency, in the form of *administrative capital*, to agitate for improvements in their immediate circumstances and to feel seen and heard within the constrained parameters of a rigid system.

RECOMMENDATIONS: Valuable lessons can be learnt from engaging with patients' perspectives to adapt and strengthen future quarantine to deliver responsive, person-centred healthcare.

1. The risks of being unable to adequately attend to the significance of individuals' experiences coming into quarantine, the risks of 'new' and unprecedented mental health problems emerging within quarantine, and the potentially depersonalised nature of care that is a product of the quarantine system design, are all intersecting concerns that healthcare providers need to be aware of and respond to. These must be anticipated and attended to as part of pandemic preparedness.
2. The demands of rapidly scaling up healthcare delivery for the many and varied healthcare needs of individuals challenges the dexterity of virtual models of care and their capacity, within the available resources, to deliver the high standard of care that is expected within NSW Health. Defining what can be expected within the quarantine healthcare experience more clearly for patients could improve the experience of healthcare in quarantine, including what is delivered through a virtual model.
3. The level of advocacy, termed 'administrative capital', that appeared necessary to navigate the quarantine system and virtual care models demonstrates that the system needs to be improved to avoid individuals' relying on their (inequitably available) resources.
4. We need to adopt a population-level provision of mental health services, where we aim to *reach everyone* to mitigate the anticipated generalised and adverse mental health impact. To protect the mental and physical health of patients in institutional quarantine facilities, including those who do not test positive for the infectious disease of concern, requires considerable system investment to fund a multidisciplinary model that brings together a range of specialties to provide integrated care with the support of allied health.
5. This integrated model should be connected through a centralised accessible record (*Tell us once* approach) facilitating integrated communication across the quarantine process. This should involve greater concentration on an individual's circumstances as they enter quarantine to meet their complex and heterogeneous needs.
6. Despite the quality of care being provided, some patients reported feeling 'unseen', patients could receive a form of electronic notification (*Tell me often*) to inform them of activities being undertaken to progress their care. These strategies focus on delivering transparent, efficient communication which can engender trust and support personalised care to enable a dialogue between healthcare professionals and the individuals subject to quarantine restrictions.

There are significant opportunities to learn from Australia's quarantine experience to improve the experience of individuals through a: *Reach everyone; Tell us once; Tell me often* (Fig. 2) approach to ameliorating the mental health impact of quarantine.

Figure 2: Learning for virtual healthcare services in quarantine.