from self-report/caregiver report. This presentation will focus on demonstrating how data obtained through digital phenotyping may augment clinical decision making.

Methods: This presentation will include information from 3 completed or ongoing studies. The first looks at radio wave based sensing as a way of passively monitoring behavior and dementia. The second uses wearables to track the impact of psychopharmacologic changes in dementia. The third study focuses on incorporating data from electronic media (e-mail, text messages) impact psychotherapy in early and late life

Results and Discussion: Preliminary results indicate that passive sensing is able to accurately identify patterns of behavior as well as circumscribed clinical events with a precision that exceeds the current standard of care. Data and insights gained from these three ongoing studies are helping develop best practice models that can impact clinical outcomes.

Conclusions: Collectively, the data in this presentation will demonstrate to clinicians a range of approaches towards developing precision care for older adults with dementia and psychiatric diagnosis. These approaches share the common theme of emphasizing the human element in care, while augmenting it with a range of data that provide objective collateral information to guide more precise decision making. The session will also discuss issues that will impact precision care, including the potential for creating inequities, translation to low income settings and countries as well as the matter of data privacy and security.

Seeing people living with dementia through the lens of technology: pain assessment and clinical impact
Presenter: Kreshnik Hoti, PhD

Objective: Due to communication difficulties, pain assessment in people living with dementia (PLWD) is challenging. In this study we explore vocalisations and facial expressions during assessment of pain and provide evidence in regards to clinical impact of pain assessment, as part of a targeted care program.

Methods: In order to determine key facial and vocalisation features and their relationship with pain we analysed a total of 22,194 pain assessments in PLWD ($n = 3,144$) from 34 different Australian residential aged care homes. Pain assessments were conducted using PainChek, which is a technology-based system comprised of three key components: point-of-care AI-powered application, training and digital analytics. Additionally, we examine the 6-months clinical impact of introducing this system, as part of a wider psychosocial care intervention (i.e., the Reconnect program) in the UK care home setting. Here we focus on how this pain assessment system contributed to the use of psychotropics and issues such as safeguarding.

Results: Likelihood of vocalization feature presence varied based on the intensity of pain. In this regard, sighing and screaming were more likely during experience of higher pain (eight times). During experience of severe pain eyelid tightening was the most frequent facial expression (48.6%) whereas higher pain levels were mostly predicted by horizontal mouth stretch feature. Use of PainChek system as part of the Reconnect program contributed to a more consistent pain management approach, benzodiazepine reduction (29%) and cessation (46%) and reduction of antipsychotic prescribing (22%). Compared to the 6 monthly period from the year prior to implementation of the Reconnect program, a 92% reduction in safeguarding events was reported.

Conclusion: In this study we demonstrate the potential to digitally phenotype key pain behaviours such as vocalizations and facial expressions using the PainChek system. We also evidence the positive impact of pain assessment combined with psychosocial care, on use of psychotropics and safeguarding incidents.