PAIN AND COVID-19

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The perfect storm that validates the need to fast track technology advances in pain assessment for vulnerable populations and their families

Dr Jennifer Abbey, AM
Carol Bennett, CEO, Painaustralia
Philip Daffas, CEO, PainChek

AUTHORS

DR. JENNIFER ABBEY

Founder of the Abbey Pain Scale

Dr. Jenny Abbey is the author of the Abbey Pain Scale, the pain scale which was the most widely used in Australian Residential Care facilities to assess pain for people with dementia who are unable to verbalise their needs in a meaningful way. She was previously also a Foundation Director of one of the three National Dementia Collaborative Research Centres and was Queensland's first Professor of Nursing (Aged Care) holding a joint appointment between Queensland University of Technology (QUT) and the Prince Charles Hospital.

CAROL BENNETT

Painaustralia CEO

Over the last two decades, Carol has worked at senior executive levels in national health and aged care organisations and has served on national and international boards and advisory groups. Carol has been National CEO of Alzheimer's Australia, Consumers Health Forum of Australia, Rural Health Workforce Australia and the Victorian Alcohol and Drug Association. She has been a member of the Australian Health Practitioner Regulation Agency Paramedicine Board, National Health and Medical Research Council, Trustee of the Southcare Rescue Helicopter Fund Pty Ltd, various aged care sector advisory bodies and the International Alliance of Patient Organisations.

PHILIP DAFFAS

CEO and Managing Director, PainChek

Philip is a highly accomplished global business leader and people manager with an international career spanning more than 25 years with leading blue-chip healthcare corporates and novel technology start-up companies. Philip has held senior global business leadership positions in Europe, US and Australia. He has been instrumental in building businesses, growing market share and developing extensive high-level customer relationships in each sector. His roles in Australia have included VP Global Marketing at Cochlear and General Management with Roche Diagnostics and Bio-Rad Laboratories, and CEO of Applied Physiology, an Australian start-up software company in the intensive care monitoring sector.

INTRODUCTION

Pain is a very common and personal experience that can have a significant impact on people's lives. In 2020, 3.37 million Australians will experience chronic (persistent) pain, and the prevalence increases with age.[1,2] Pain also overlaps with dementia: it is estimated that up to 80 per cent of aged care residents have chronic pain,[1] while 53 per cent of people in residential aged care have a diagnosis of dementia.[2] This means that there is a large population of older people who may find it difficult or impossible to communicate about pain. As a result, pain is often undetected or misinterpreted in many aged care residents.[3]

People with chronic pain may be more susceptible to COVID-19, particularly older people with multiple comorbidities.[4] It is important to recognise and manage pain in the best way possible for older people – the threat of COVID-19 makes this critical. While the findings of the Royal Commission into Aged Care continue to highlight much-needed changes in the aged care sector, the added complication of COVID-19 creates a perfect storm for timely action to bring these improvements forward.

An important way to improve quality of life for people with chronic pain is better recognition and identification of pain. However, this can be challenging in people who may not be able to communicate verbally about their pain. PainChek is an advanced pain assessment device that uses facial recognition to assess and score pain levels in real time, enabling providers to recognise and implement appropriate pain management strategies for vulnerable patients.

Snapshot of pain in Australia

- In 2016, over 1.6 million Australians aged 45 and over experienced persistent, ongoing pain[2]
- Older people* and those living with a disability have the highest rates of chronic pain[5]
- In residential aged care, 80% of people report pain as a problem; 92% of people are taking at least one analgesic medication daily[5]
- In 2017–18 there were 105,000 hospitalisations involving chronic pain[2]
- People aged over 45 with chronic pain have higher rates of arthritis, mental health problems and osteoporosis[2]

There is no one definition of 'older people'; national and international health organisations tend to use 65 as the cut-off for 'older', including the Australian Institute of Health and Welfare [6]

ACUTE VERSUS CHRONIC PAIN

Acute pain is recent-onset, short-term pain that can usually be related to a known cause, such as an injury or illness. This type of pain tends to settle down as the body heals.[7] Chronic pain, also known as persistent or ongoing pain, is a complex medical condition. It is often defined as pain that lasts longer than three months, but it may also be considered as any pain that continues beyond the expected time of healing. [7] Acute pain can also transition into chronic pain.

Older Australians, those with disabilities and those in residential care are at higher risk of developing chronic pain.

Many people with conditions such as arthritis, cancer, migraines, neurological diseases and diabetes experience chronic pain. Older Australians, those with disabilities and those in residential care are at higher risk of developing chronic pain.[2]

IMPACT OF CHRONIC PAIN

Chronic pain can have a significant impact on many aspects of a person's life. It can lead to physical changes including deconditioning of the body and a loss of functional independence, as well as psychological changes including depression, anxiety, fatigue and difficulty sleeping.[8] The overall impact of chronic pain can be more pronounced in older people, especially their ability to function independently and participate in social activities.[9]

Attitudes towards pain and biological changes in the way that pain is perceived may also influence pain.[10] For example, studies have shown that chronic pain is associated with reductions in the brain's grey matter in certain regions, which may alter the sensation and processing of pain.[11] Ongoing sensitivity to pain after an injury is also prolonged in older people.[12,13] Such changes can lead to long-lasting pain, even when the original cause or event is no longer present.

Under-treated or undetected pain can have serious adverse effects, including worsening cognitive function, increased depression and greater functional impairments.

While pain is common in the older population, some individuals may minimise their symptoms or put up with it because they think it is part of the normal ageing process.[14] This may make the early signs of pain hard to detect and increases the risk of acute pain developing into chronic pain, which is more difficult to treat.

Under-treated or undetected pain can have serious adverse effects, including worsening cognitive function, increased depression and greater functional impairments.[5] Untreated or poorly treated pain can limit a person's daily activities and have a profound impact on their quality of life.[4] It impacts personal relationships and can have significant emotional and social ramifications.

PAIN, THE IMMUNE SYSTEM AND COVID-19

A healthy immune system is important for the control and resolution of COVID-19 infections. However, pain and the immune system have a close relationship that can lead to adverse outcomes. For example:

- Chronic pain can lead to suppression of the immune system, making people more vulnerable to serious illness such as COVID-19[4]
- The immune system plays a role in the development of inflammation and different types of pain[15,16]
- Significant changes in the immune system have been seen in people with COVID-19.[17]

While the immune system responses to COVID-19 are complex, the association of older age, chronic pain and comorbidities increases the risk of immune suppression and subsequent COVID -19 infection.[4]

PAIN AND DEMENTIA

Pain in people with dementia is very prevalent and difficult to assess.[9] The ability to communicate about pain can become more and more difficult for people with impaired cognitive function, meaning that many people may be suffering from treatable but unrecognisable pain.[9] It is estimated that pain may go undetected in up to 50 per cent of people with dementia.[5]

While acute and chronic pain are common among residents of aged care facilities, pain is often misunderstood in this population. This leads to a lack of detection, under-treatment and/or poor management, including the suboptimal use of pain-relieving medication.[18-20]

In people with dementia, untreated pain has been associated with behaviours such as agitation, aggression, wandering and verbal abuse – such behaviours may be the only indication of pain in some patients.

For example, research shows a lower use of pain-relieving medication in people with dementia compared to those without cognitive impairment, despite both groups of patients having the same type and severity of painful conditions.[18-20] In one study examining the treatment of pain following hip fracture surgery, patients with advanced dementia received one-third the amount of analgesia compared with cognitively intact patients, 40 per cent of whom reported severe post-operative pain. This suggests that the majority of patients with dementia were potentially in severe pain.[19]

In people with dementia, untreated pain is a cause of changed behaviours (sometimes known as behavioural and psychological symptoms of dementia, or BPSD).[21] Untreated pain has been associated with behaviours such as agitation, aggression, wandering and verbal abuse.[22] Such behaviours may be the only indication of pain in some patients.[3] Given that approximately two-thirds of people with dementia require high-level care to manage changed behaviours and up to 80 per cent of aged-care residents have chronic pain, there is a substantial overlap between pain, dementia and changed behaviours.

AUSTRALIAN STANDARDS OF CARE

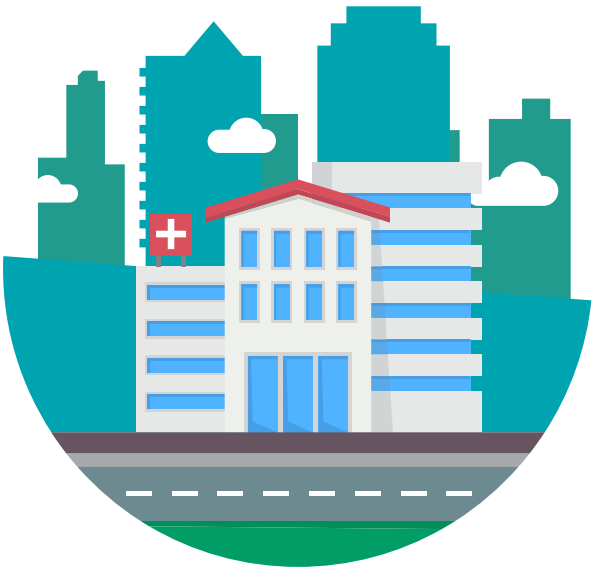
In 2019 the new Aged Care Quality Standards came into effect.[23] These apply to all Australian Government subsidised aged care services and define what quality aged care should look like. This single set of standards establishes the minimum acceptable level of service for accreditation but does not provide any insight or guidance into whether a provider is delivering high quality care. While the standards take a more consumer-directed approach, there are issues that need to be carefully considered to ensure that consumers aren't adversely impacted.

Linking accreditation to a clear demonstration of best practice pain management is vital in meeting consumer needs.

The quality indicators lack important information, including approaches to pain management. For example, there is no acknowledgement about the high prevalence of pain among aged care residents, or about appropriate pain management strategies.

Linking accreditation to a clear demonstration of best practice pain management is vital in meeting consumer needs in this area. Evidence presented at the Royal Commission into Aged Care identified that many consumers and carers are very concerned about inadequate pain management practices in aged care services, which often result in poor outcomes for residents.[24]

In 2017–18 there were 105,000 hospitalisations involving chronic pain



PAIN SERVICES IN THE COMMUNITY

Older people living with chronic pain also face many challenges in community settings. More people are seeing their general practitioner (GP) for chronic pain, with a 67 per cent increase in patient encounters over the past 10 years.[2]

In 2017–18 there were 105,000 hospitalisations involving chronic pain. These hospitalisations involved more procedures than other admissions: for example, 22 per cent of those admitted with chronic pain had five or more procedures, compared with 8.9 per cent for other hospitalisations.[2] People with chronic pain also spent more time in hospital. The overall hospitalisation rates for people with chronic pain increased with increasing age.

It is challenging for mainstream providers to deliver appropriate services for people with dementia and chronic pain who choose to live at home, and this is a serious barrier to providing home-based care.

Providing better access to appropriate pain management will allow older people to be treated in their preferred setting and maintain greater independence and autonomy.

For some people, home support and home care packages provide the level of support they need to continue to live independently; for others this is not possible. For example, older people living at home with chronic pain have two major options to access best-practice treatment: they can wait for more than a year (sometimes up to two years) to access multidisciplinary pain services and allied health through public hospitals;[25] or they have to pay a premium for insurance coverage that does not meet the needs of chronic pain patients. The management of chronic pain requires a multidisciplinary approach involving a range of therapies and practitioners; patients often have large out-of-pocket expenses even when they have insurance.[26] Healthcare providers agree, with many reporting that patients reach their yearly insurance allocation for allied health care payments within the first four to six months, despite needing long-term treatment. [26]

As a result, older people may be inappropriately pushed into seeking acute hospital care or residential aged care, a situation which often does not provide adequate pain management. Providing better access to appropriate pain management will allow older people to be treated in their preferred setting and maintain greater independence and autonomy.

Detecting pain in people with dementia can be particularly difficult, especially for people who are unable to verbally report or describe their pain.

PAIN ASSESSMENT AND DEMENTIA

Pain is a subjective, individual experience, and assessment can be challenging. Variations in reported pain intensity, pain persistence and functional impairments make pain difficult to measure with traditional assessment tools.[27]

Detecting pain in people with dementia can be particularly difficult, especially for people who are unable to verbally report or describe their pain.[5] Patients may be labelled as difficult or aggressive before the cause of the behaviour has been uncovered, leading to inappropriate prescribing of antipsychotic medications.[28,29] Given that changed behaviours in people with dementia many be linked to undiagnosed or under-treated pain, appropriate assessment of pain is essential in this population.

COVID-19 makes timely detection of pain even more critical. Evidence shows that chronic pain may lead to suppression of the immune system, making people more vulnerable to serious illness such as COVID-19.[4] People with dementia cannot always say if or where they feel pain, thus delaying timely detection and appropriate delivery of pain relief.

An important first step is to perform a comprehensive pain assessment. The Abbey pain scale is a validated tool that has been used to overcome the problem of pain assessment in people with dementia, and has been used successfully for almost 20 years in Australia and elsewhere. However, such pain assessment tools are manual and paper based, and may not be used at the point of care. Consequently, they are not always used by providers in aged care facilities or hospitals, leaving staff to work out their own methods of pain assessment.

By identifying pain in people with dementia, PainChek can facilitate appropriate pain management and may subsequently reduce the reliance on antipsychotic medications.

PAINCHEK: THE ADVANTAGE OF DIGITAL TECHNOLOGY IN PAIN ASSESSMENT

PainChek is built on an innovative technology that allows providers to easily assess and record pain. By identifying pain in people with dementia, PainChek can facilitate appropriate pain management and may subsequently reduce the reliance on antipsychotic medications.

PainChek's mission is to give a voice to those people who cannot verbalise their pain. The pain assessment tool builds on the best in class from the current paper-based methods and can be easily used by all providers.

PainChek has intelligently automated the multidimensional pain assessment process and introduced artificial intelligence to automate facial assessment – which is the most complex part of the pain assessment process. The result is a fully mobile, clinically validated and regulated medical device that comes in the form of an app, which is downloadable for use on any smart phone or mobile device.

PainChek also brings pain assessment to the point of care, stores resident records online and helps providers to improve patient management. Once pain has been assessed, an appropriate treatment program can be developed. Staff can reassess pain to monitor progress so that treatment can be modified as required. This feedback loop empowers staff as well as providing each resident with tailored, effective treatment to suit their needs and situation.

PAINCHEK AND AGED CARE

On 3 December 2019 the Australian Government signed an agreement to provide funding for a national trial of PainChek in Australian residential aged care facilities. The agreement provides funding for a one-year PainChek access license for all residential aged care providers in Australia (over 1,000 facilities) and their 100,000 residents living with dementia or cognitive impairment.

PainChek's ability to measure, track and document a resident's pain over time can provide evidence-based reassurance and comfort to families.

As of 31 March 2020, 175 providers and 588 aged care facilities had taken up the initiative. This accounts for 49,811 aged care beds, of which 30,905 are dementia-specific beds. More than 100,000 PainChek clinical pain assessments have been completed with these residents.

Evidence abounds that pain in the residential care sector could be better managed, particularly for people who cannot verbalise their pain.[24] PainChek's ability to measure, track and document a resident's pain over time can provide evidence-based reassurance and comfort to families. It can also demonstrate a facility's compliance with appropriate pain management strategies as well as good communication practices.

PAINCHEK AND COVID-19

PainChek has been shown to protect vulnerable residents and providers during the COVID-19 pandemic, by supporting social distancing and optimal hygiene practices.

"PainChek has transformed the way we monitor and treat pain with those residents living with dementia. Under the restrictions required for COVID-19, PainChek has been even more beneficial. As a non-contact digital healthcare solution supportive of our social distancing requirements, we have continued to use PainChek to safely assess our residents living with dementia and cognitive impairment.

Jim Murray, Facility Manager, Allambie Heights Village

In aged care homes up to 80 per cent of people living with dementia regularly experience pain. Regular pain assessments are critical for this vulnerable group and are of even greater importance during the COVID-19 pandemic due to the association with impaired immunity.[4] PainChek assessments can be conducted up to a distance of three metres away, and take no more than three minutes to complete. The administration and storage of pain scores is automatic, eliminating the need for paper handling.

"It is essential during COVID-19 to continually provide high levels of clinical care for all residents. The use of technology-based solutions is becoming increasingly important, and accelerated by the recent COVID experience. PainChek assessments can be conducted from a 1.5 metre distance from the resident, which assists in minimising exposure.

Naomi Lewis, Clinical Manager Residential Services, VMCH

During COVID-19, providers have been trained through PainChek's online workshops and e-learning platform.

"With the advent of COVID-19, IRT Group rapidly changed its rollout approach to PainChek, adopting remote training and running in excess of 72 video conferencing sessions across its 21 residential aged care centres. The PainChek app has allowed IRT to provide employees with an innovative pain assessment and management tool that enables them to practise safe distancing whilst assessing and managing resident pain.

Alex Reid, Strategic Projects Manager, Aged Care Centres IRT

PainChek can be used across the entire dementia journey – from home care to aged care and the hospital setting.

In light of COVID-19, the Department of Health has extended PainChek's national trial grant for an additional 12 months until May 2021. Aged care providers can register their interest with **PainChek** at **1800 555 555** or visit **www.painchek.com/free**.

PainChek technology is currently being used in aged care facilities where there are significant numbers of people living with dementia and pain. The technology can be used across the entire dementia journey – from home care to aged care and the hospital setting – ensuring that pain can be assessed and managed quickly and effectively in any care environment and for the duration of a person's life.

MANAGEMENT OF CHRONIC PAIN

Spontaneous recovery from chronic pain is rare.[30] Management requires appropriate and timely assessment and a multidisciplinary, holistic approach to achieve the best possible results. This may include non-opioid medications, tailored physical activities, psychological approaches such as cognitive behaviour therapy and self-management techniques.[24] As with all treatment options, pain management strategies should be provided in response to each person's wishes, preferences and needs.

A patient-centred, multimodal approach to the treatment of chronic pain is a key recommendation of Painaustralia's National Pain Strategy and a critical component of the Australian Government's National Strategic Action Plan on Pain Management.

Many patients use medications for temporary pain relief, including paracetamol and non-steroidal anti-inflammatory drugs (NSAIDS). However, medications are not the mainstay of treatment for chronic pain and are only one part of a comprehensive treatment strategy. While opioid medications often form part of the management of moderate-to-severe acute pain, there is very little evidence to support the use of long-term opioid therapy for patients with chronic pain.[2,6] Other non-drug strategies that may help to relieve discomfort include physical activity, repositioning, verbal reassurance and support, cold or heat therapy, massage or touch therapy, music therapy and distraction techniques (e.g. stress balls, worry beads, play dough).

A patient-centred, multimodal approach to the treatment of chronic pain is a key recommendation of Painaustralia's National Pain Strategy[31] and a critical component of the Australian Government's National Strategic Action Plan on Pain Management.[32] Once implemented, the National Action Plan will be the world's first fully-funded government response to comprehensively addressing the burden of pain, which is urgently needed across aged care.

PAIN RELIEF AND PALLIATIVE CARE

The identification and management of pain in the palliative care environment is essential. Palliative care refers to care that improves the quality of life for patients facing a life-threatening illness. It involves the prevention and relief of suffering "by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual".[33]

Effective management of pain is essential to prevent and relieve suffering towards the end of life. This may involve analgesic medication, and should also consider physical and psychological factors, spiritual and cultural beliefs as well as a person's wishes and preferences.[5] In such circumstances, the person may not be able to verbally communicate clearly about whether they are feeling pain, thus delaying timely and appropriate delivery of pain relief.

Community attitudes towards end-of-life care have been changing in recent years, presenting aged care facilities with complex policy and practice challenges. These include the use of advance care directives, end-of-life care plans and the interpretation of resident and family views on what constitutes "a good death". The fear of dying in pain and alone is a primary fear for most people.

During COVID-19, family member access to many aged care facilities was limited or not permitted at times. This could continue with resurgences or with the advent of further pandemics. It is essential that aged care and community health services are well prepared for future events and have clear and effective protocols in place to relieve pain and suffering for people in the final stages of life.

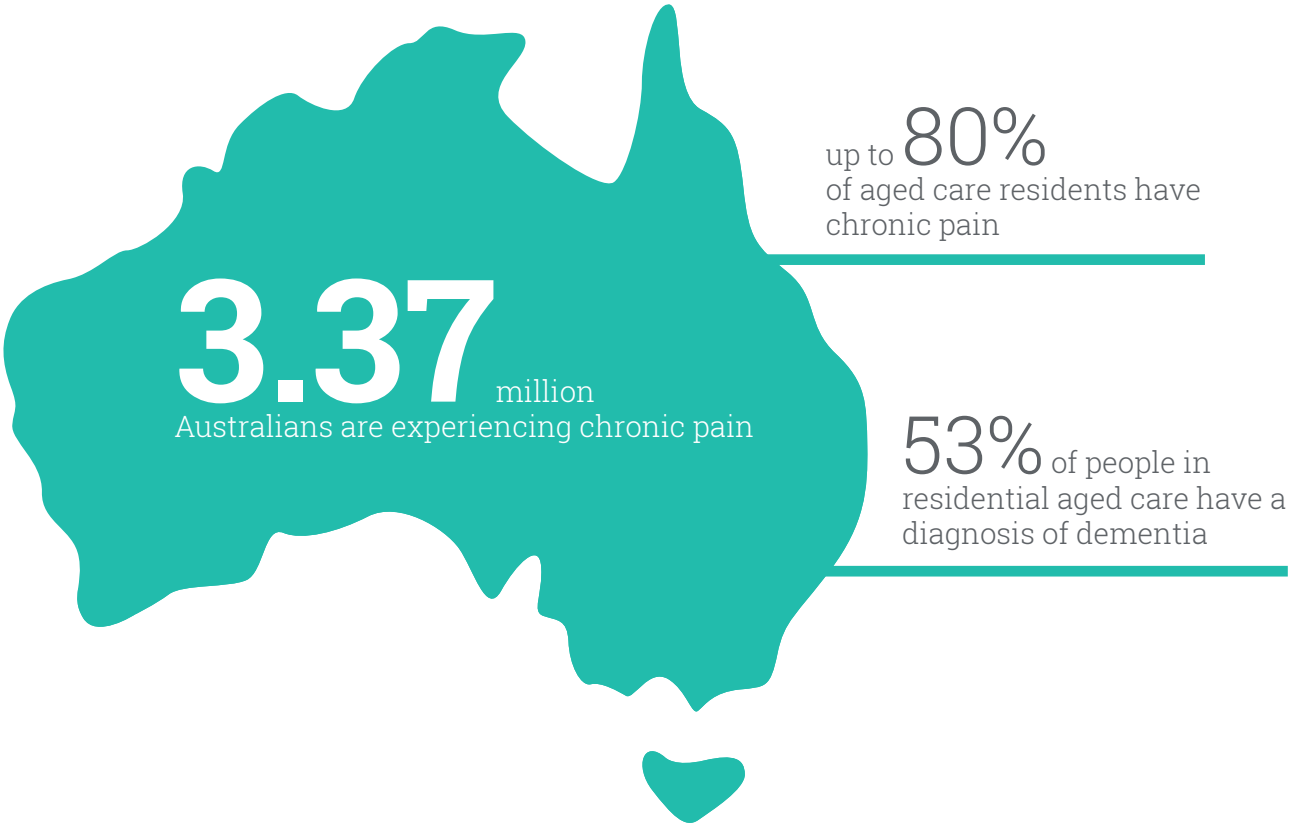
Effective management of late-stage pain to achieve the highest level of relief and comfort is central to alleviating patient suffering as well as family members' concerns. It is also a crucial part of aged care facilities' responsibilities to their residents and families.

Having appropriate and practical methods to better assess pain is a critical component of end-of-life care strategies. PainChek can play an important role in palliative care by enabling detection of pain in people who are often unable to alert others about their pain. It provides an effective way to detect and reassess pain in situations where social distancing or isolation is required, and allows remote communication about a person's pain with family members.

Effective management of late-stage pain to achieve the highest level of relief and comfort is central to alleviating patient suffering as well as family members' concerns. It is also a crucial part of aged care facilities' responsibilities to their residents and families. PainChek's ability to produce data that demonstrates improved pain detection and management, and to show the care provided, are key parts of meeting these demands.

CONCLUSION

Chronic pain can have a significant impact on many aspects of a person's life. It is common in older people and often coexists with dementia, making it very difficult for people to communicate their pain. PainChek provides a technological solution to pain assessment that can be used across multiple healthcare settings and during challenging situations like COVID-19, which may become the 'new normal'. Timely implementation of such technologies can improve care, relieve suffering and improve the quality of life for vulnerable populations and their families.

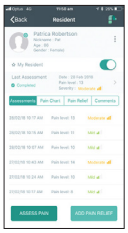


PainChek
Intelligent Pain Assessment

Pain Assessment Protocol

1

The Face Select the Resident you want to do a pain assessment on and Press The "ASSESS PAIN" button

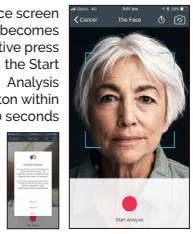


Position the device ~ 1m for the resident

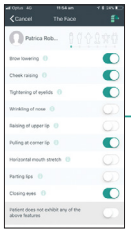
Wait for the face screen to become Active

See Optimal Conditions below

Once screen becomes active press the Start Analysis button within 10 seconds



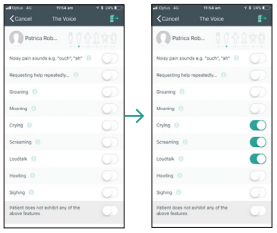
Automated Facial Analysis completed



Swipe Left to go to Step 2: The Voice

2

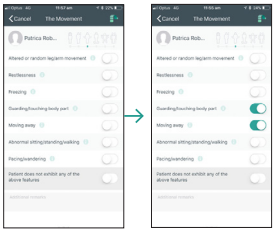
The Voice Whilst observing the resident "Check" those vocalisations the resident is exhibiting



Swipe Left to Go to Step 3: The Movement

3

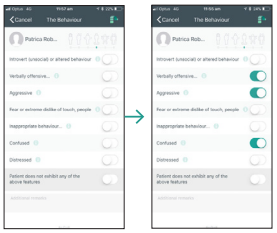
The Movement Whilst observing the resident "Check" those movements the resident is exhibiting



Swipe Left to Go to Step 4: The Behaviour

4

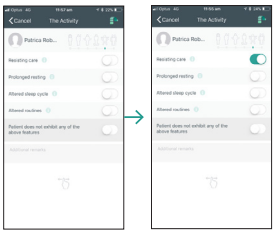
The Behaviour Whilst observing or undertaking clinical review of the resident "Check" those behaviours the resident is exhibiting



Swipe Left to Go to Step 5: The Activity

5

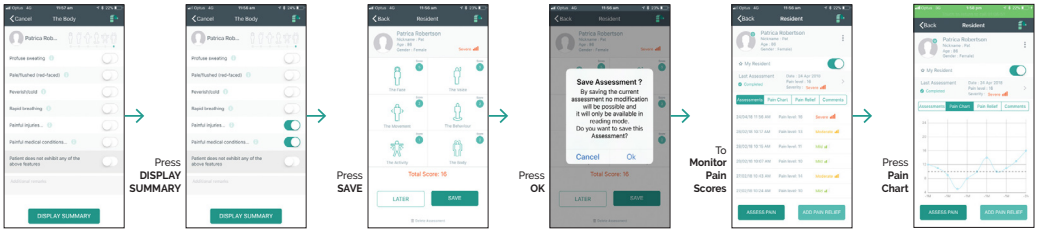
The Activity Whilst observing or undertaking clinical review of the resident "Check" those activities the resident is exhibiting



Swipe Left to Go to Step 6: The Body

6

The Body Whilst observing or undertaking clinical review of the resident "Check" those changes in body items the resident is exhibiting



Press **DISPLAY SUMMARY**

Press **SAVE**

Press **OK**

To **Monitor Pain Scores**

Press **Pain Chart**

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PainChek

P: 1800 555 555
E: info@painchek.com
W: painchek.com/free

Painaustralia

P: 02 6232 5588
E: admin@painaustralia.org.au
W: painaustralia.org.au