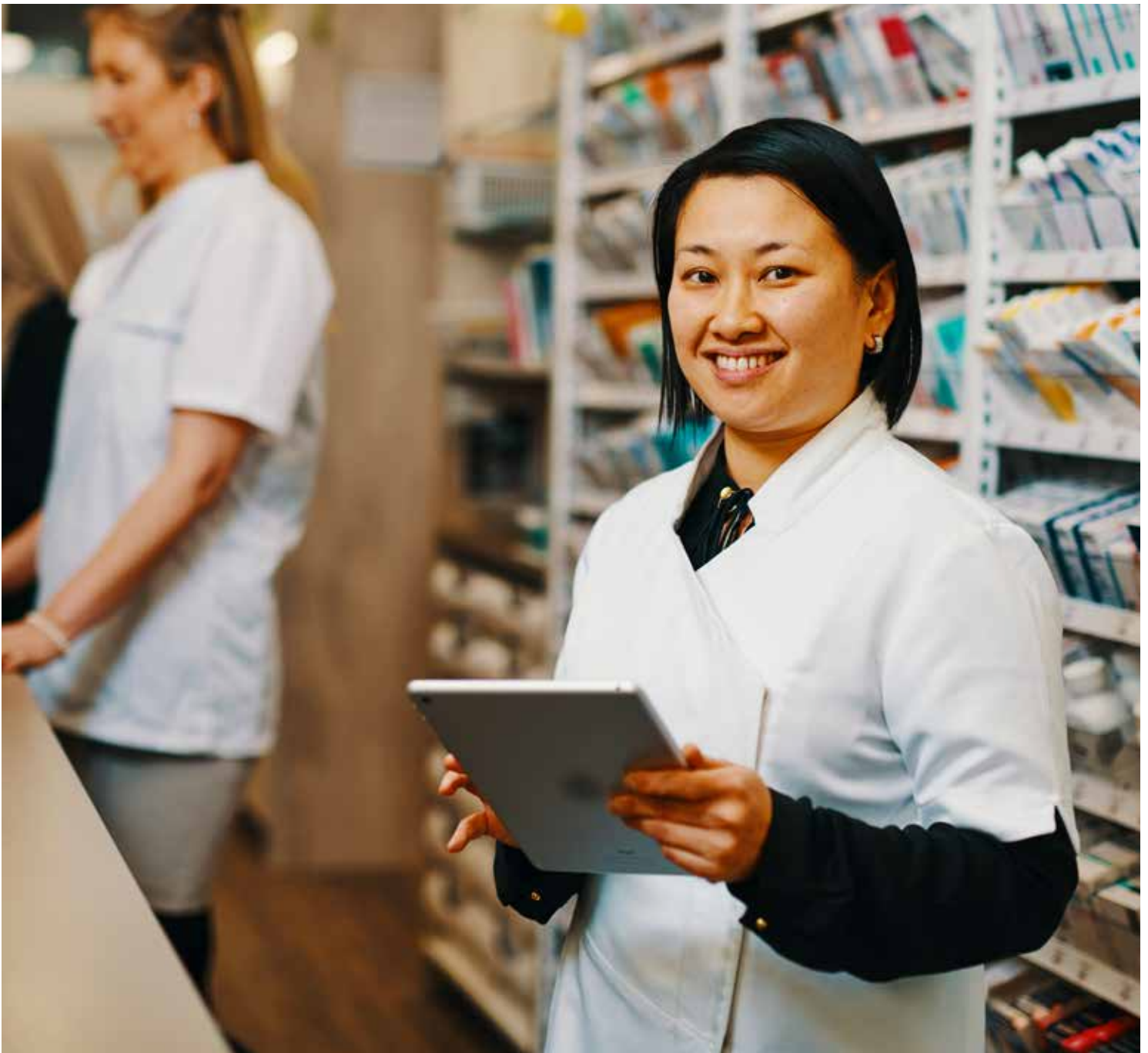


# CONNECTING THE DOTS: **DIGITALLY EMPOWERED PHARMACISTS**

Better medicine use by 2023, powered by digital health transformation





## ABOUT PSA

PSA is the only Australian Government-recognised peak national professional pharmacy organisation representing all of Australia's 31,000 pharmacists working in all sectors and across all locations. PSA is committed to supporting pharmacists in helping Australians to access quality, safe, equitable, efficient and effective healthcare.

**PSA believes the expertise of pharmacists can be better utilised to address the health care needs of all Australians. PSA works to identify, unlock and advance opportunities for pharmacists to realise their full potential, to be appropriately recognised and fairly remunerated.**

PSA has a strong and engaged membership base that provides high-quality health care and are the

custodians for safe and effective medicine use for the Australian community. PSA leads and supports innovative and evidence-based healthcare service delivery by pharmacists.

PSA provides high-quality practitioner development and practice support to pharmacists and is the custodian of the professional practice standards and guidelines to ensure quality and integrity in the practice of pharmacy.

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# EXECUTIVE SUMMARY

**Australia's health system is in the midst of a new wave of technological transformation—one that is connecting health information so that the information is accessible to patients, health professionals and carers at any time it is requested or needed for patient care.**

This transformation is long overdue. Although medicines are the most common intervention in health care, problems with medicine use in Australia are also alarmingly common. Gaps and time delays in communication are the two most significant factors identified as contributing to medicine misadventure.<sup>1,2</sup>

The digital transformation will piece together a health system that is currently fragmented—particularly in primary care. It will provide an unprecedented opportunity to improve the quality of care patients receive—particularly with regard to medicine safety. It will connect the dots in pharmacy practice, enabling clinical decisions to be better supported by an informed whole-of-patient view.

The Australian Digital Health Agency's program of work, particularly in medicine safety, will drive this transformation. This program of work strongly aligns with system changes that are needed to achieve the outcomes identified in the Pharmaceutical Society of Australia's *Pharmacists in 2023*.<sup>3</sup>

The vision of the Pharmaceutical Society of Australia for what this 'new normal' looks like for pharmacists is straightforward: pharmacists with more information to better inform clinical decisions, and clinical care that is seamless, more customised, more effective and, most importantly, safer for Australians.







# BACKGROUND

## Medicine safety

Medicines are the most common intervention in health care,<sup>4</sup> and problems with medicine use in Australia are also alarmingly common. Annually in Australia, 250,000 hospital admissions result from medicine-related problems; 400,000 additional presentations to emergency departments are likely to be due to medicine-related problems. This costs the health system at least \$1.4 billion each year. With better medicine safety initiatives, at least 50% of this harm could be prevented.<sup>5</sup>

Problems with medicines can occur at any time in the medicines management pathway<sup>6</sup>: in the decision to use a medicine, when accessing medicines, during dispensing and while using the medicine. Hence, medicine safety is not a setting-specific issue; it relates to any part of the health

system, including hospitals, general practices, pharmacies, aged care facilities, Aboriginal health services, drug manufacture, in transit, or the patient's home.<sup>7</sup>

Medicine-related problems are most likely to occur during periods of change,<sup>4,5,8–11</sup> such as moving between care settings (e.g. hospital and the home), when a new health diagnosis is made (e.g. diabetes) or during a major health event (e.g. stroke, heart attack).<sup>4,7</sup>

The nature of medicine-related problems is broad—for example, inappropriate medicines being prescribed, medicines continued for longer than needed, duplication of medicines, and necessary medicines not being prescribed or used.<sup>5,7,12</sup>

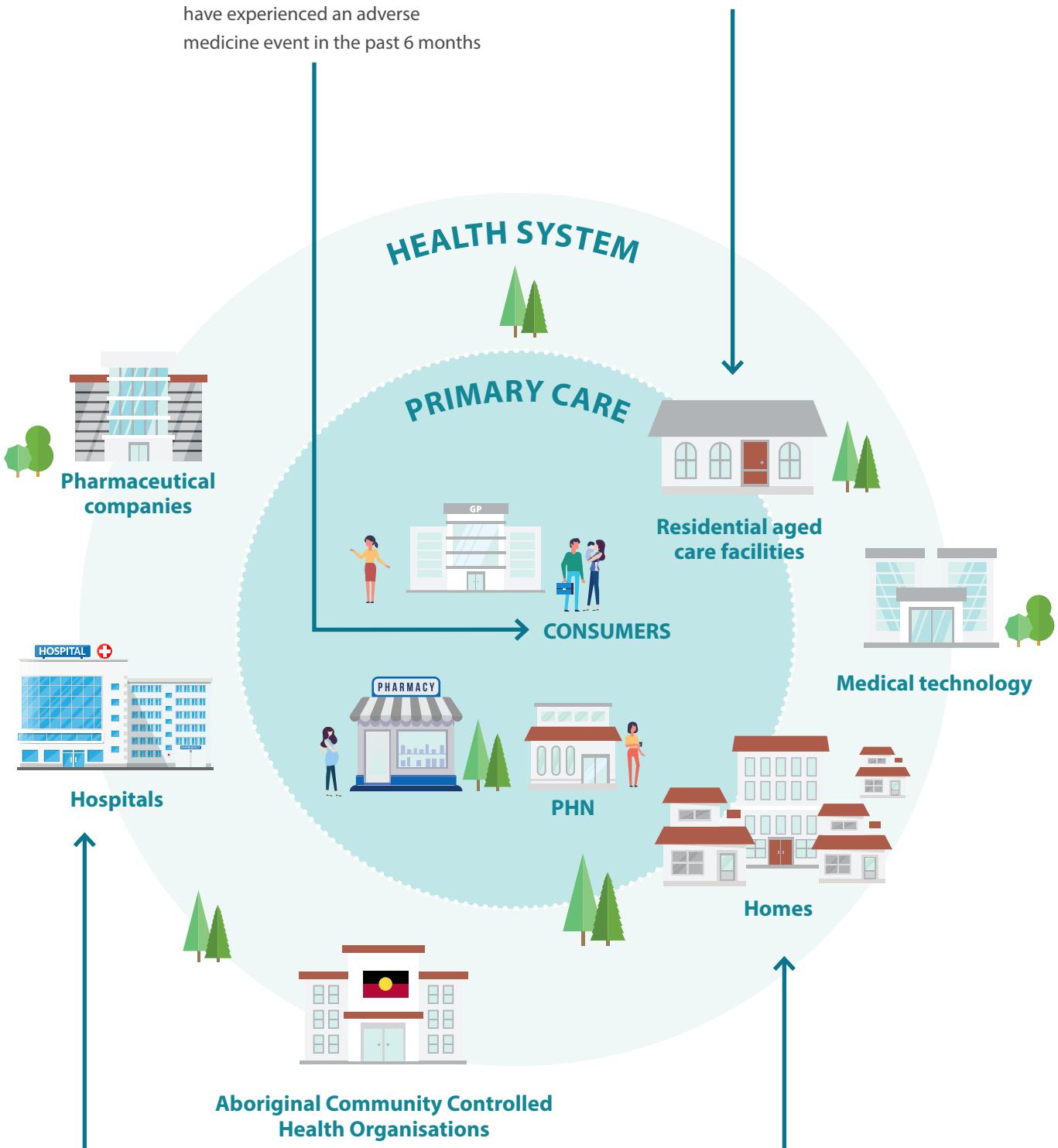


**1.2 million  
Australians**

have experienced an adverse  
medicine event in the past 6 months

**>50% residents**

are exposed to at least one potentially  
inappropriate medicine



**More than 90%  
of patients**

have at least one medicine-related problem  
post-discharge from hospital

**1 in 5 people**

are suffering an adverse medicine  
reaction at the time they receive  
a Home Medicines Review

Although multiple factors usually contribute to these problems, gaps in communication and time delays in being able to access pivotal information are the two most significant factors identified as contributing to medicine misadventure.<sup>1,2</sup>

The more complex the medication therapy and the larger the number of prescribers for the patient, the more likely these factors will contribute to medicine safety problems.

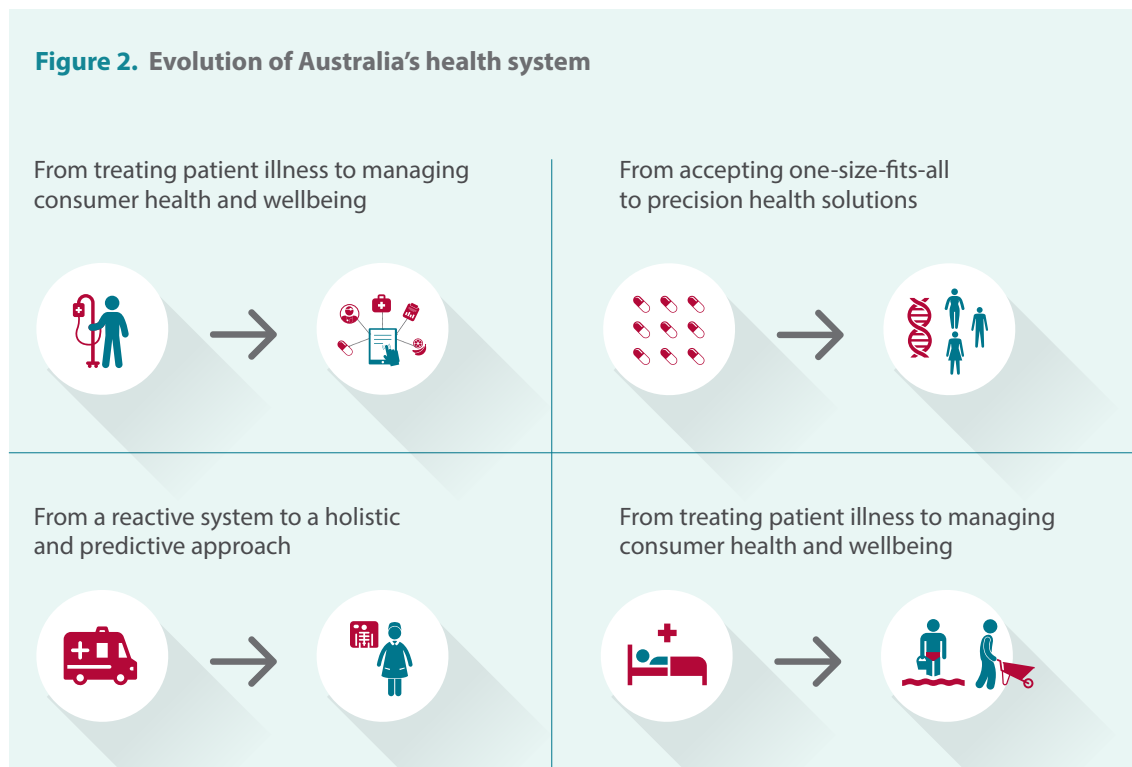
Communication gaps and information delays mean that pharmacists are forced to make a choice between delaying consumer access to medicines while pertinent information is sought and making clinical decisions about medicines while having only limited information about the patient's medicine, personal and health characteristics. This phenomenon has been referred to as 'dispensing in the dark'.

Medicine safety is in the DNA of pharmacists—but meaningful reduction to the harm caused by medicines in Australia cannot occur unless pharmacists have timely access to relevant health information.

## Evolving needs of Australia's health system

The average Australian is living longer than previously, lives with an increasing number of chronic health conditions, is more likely to be overweight and uses more medicines in managing their health. They expect a higher standard of care than previous generations and may be more knowledgeable about their health, although data suggests the level of health literacy of most Australians is low.<sup>13,14</sup> In conjunction with medical advances, increased consumer mobility and varying financial capacity to pay, the provision of care is more complex than ever before.

**Figure 2. Evolution of Australia's health system**



Reference: CSIRO Future of Health Report<sup>16</sup>

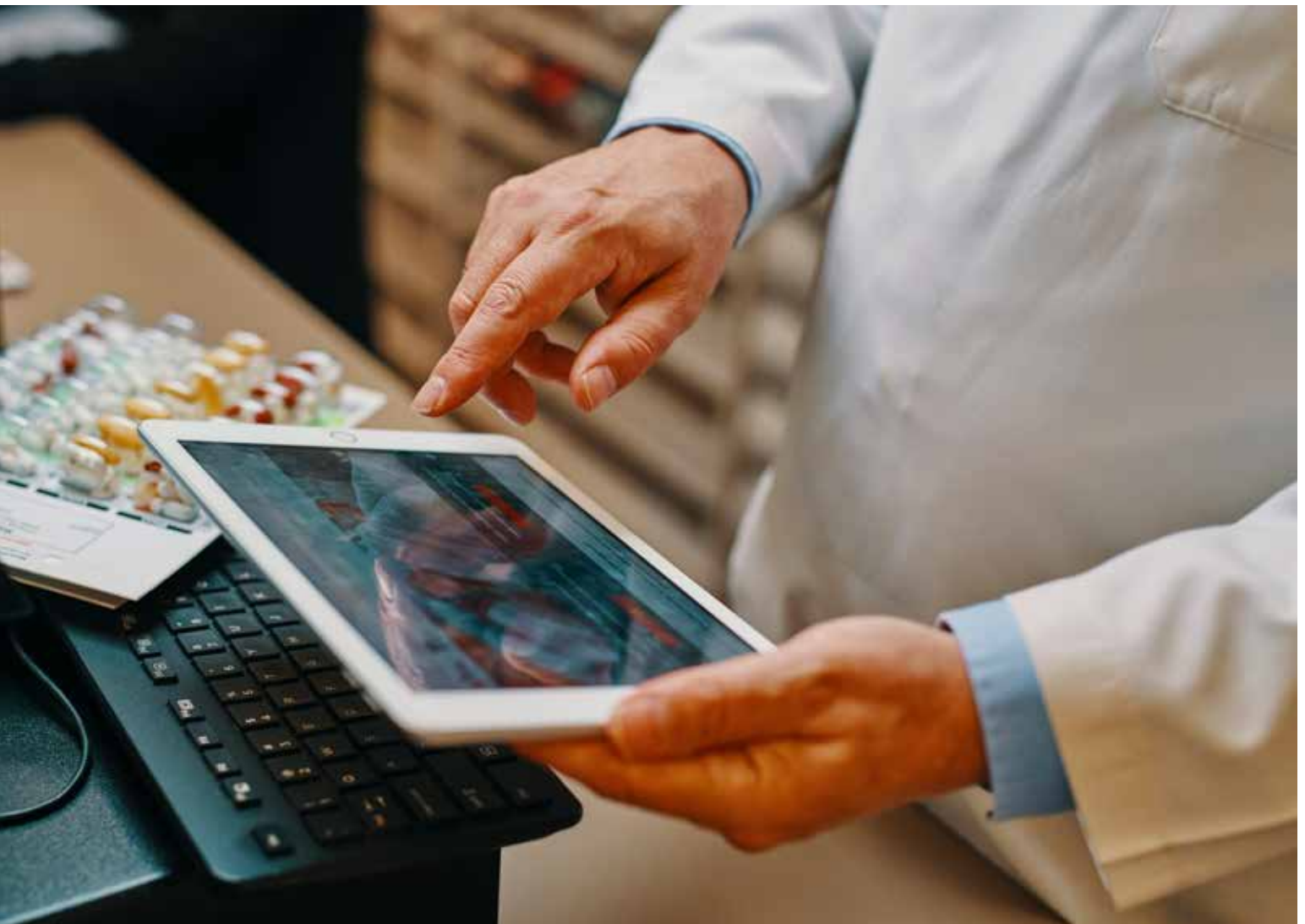


Australia's health providers are increasingly using digital systems.<sup>14</sup> The potential of technology, coupled with the increasing complexity of patient care, means that the provision of safe health care is paradoxically both more achievable and more complex than at any time in the history of pharmacy. In Australia, as in other developed countries, key system areas of focus for improving safety include transitions of care, polypharmacy and high-risk medicines.<sup>5,9-11,15</sup>

Technology megatrends and the evolving health needs of Australians are already occurring and will drive evolution of our healthcare system during the

next 10–15 years. The health system will shift to a more sophisticated model of care (see Figure 2).<sup>16</sup>

This shift will occur through public policy, consumer demand and the emergence of private digital health ecosystems. Consumers are embracing the surge towards 'm-health',<sup>16,17</sup> such as tracking health biomarkers via mobile and wearable devices, and using point-of-care testing devices (e.g. blood glucose monitors) with wireless connectivity. These trends are likely to accelerate over time. Consumers will expect their health records and health professionals to seamlessly engage with their data in the provision of care.



# AUSTRALIAN PHARMACISTS AND TECHNOLOGY

## Wave 1: Introduction of computers (1980s)

Australian pharmacists have traditionally been early adopters of technology. As early as the late 1970s, Australian pharmacists were introducing computer technology into their practice, the computerisation of dispensaries in the 1980s being a watershed moment.<sup>18,19</sup>

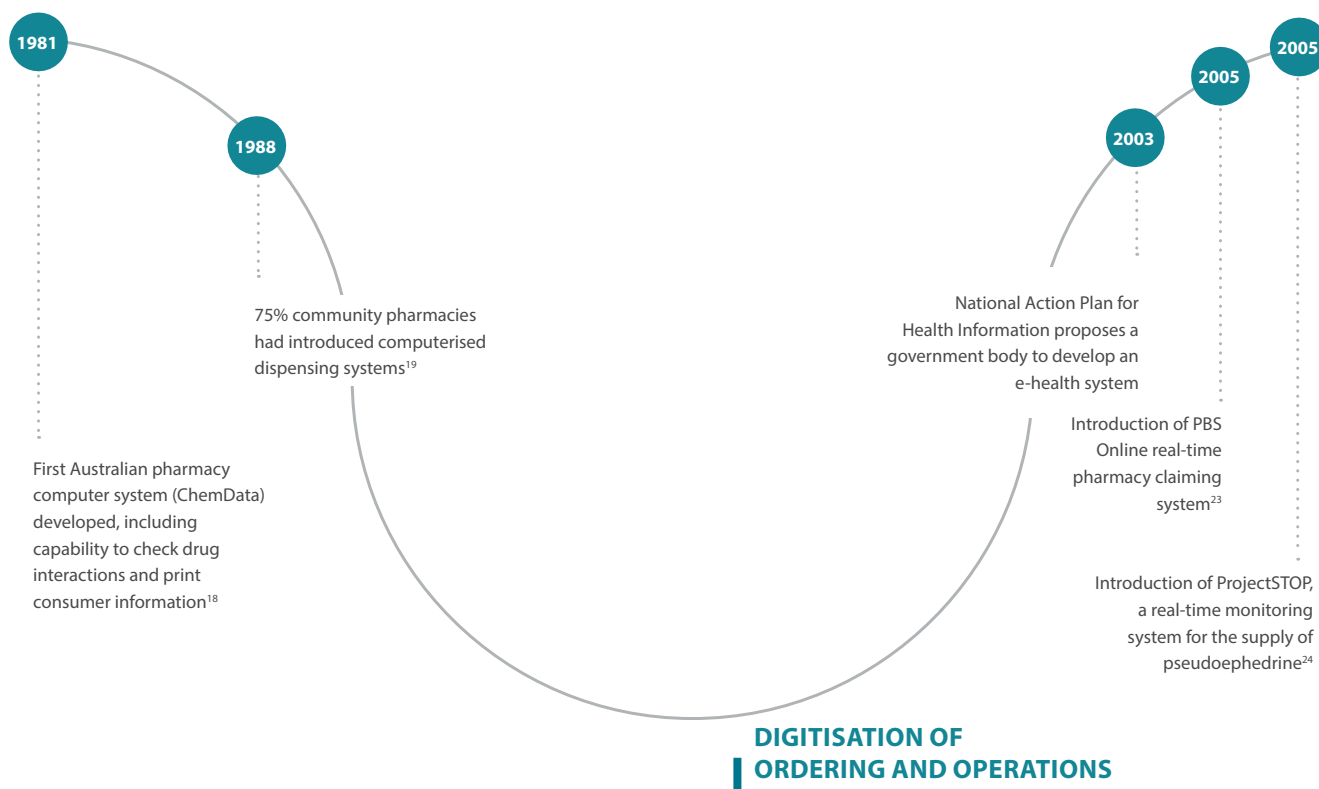
## Wave 2: Introduction of the internet and digital networks (2000s)

The next wave of digital transformation occurred in the early 2000s with increased use of the internet and digital networks. This saw significant efficiency changes through the ability of pharmacists to connect to Pharmaceutical Benefits Scheme (PBS) systems online, and streamlining of stock control through online orders. In clinical systems, hospital pharmacists could gradually access additional patient information via electronic systems, such as inpatient pathology. Access to the internet greatly increased the breadth and speed of access to literature and research relating to medicines.

1980s

1990s

2000s



Since then, technology has incrementally provided pharmacists with greater access to relevant information. This includes more medicine information, more patient information and more health information on screens closer to the point of care for the patient, more quickly than ever before. These changes create opportunities to increase patient engagement and provide more informed clinical decisions to patients.

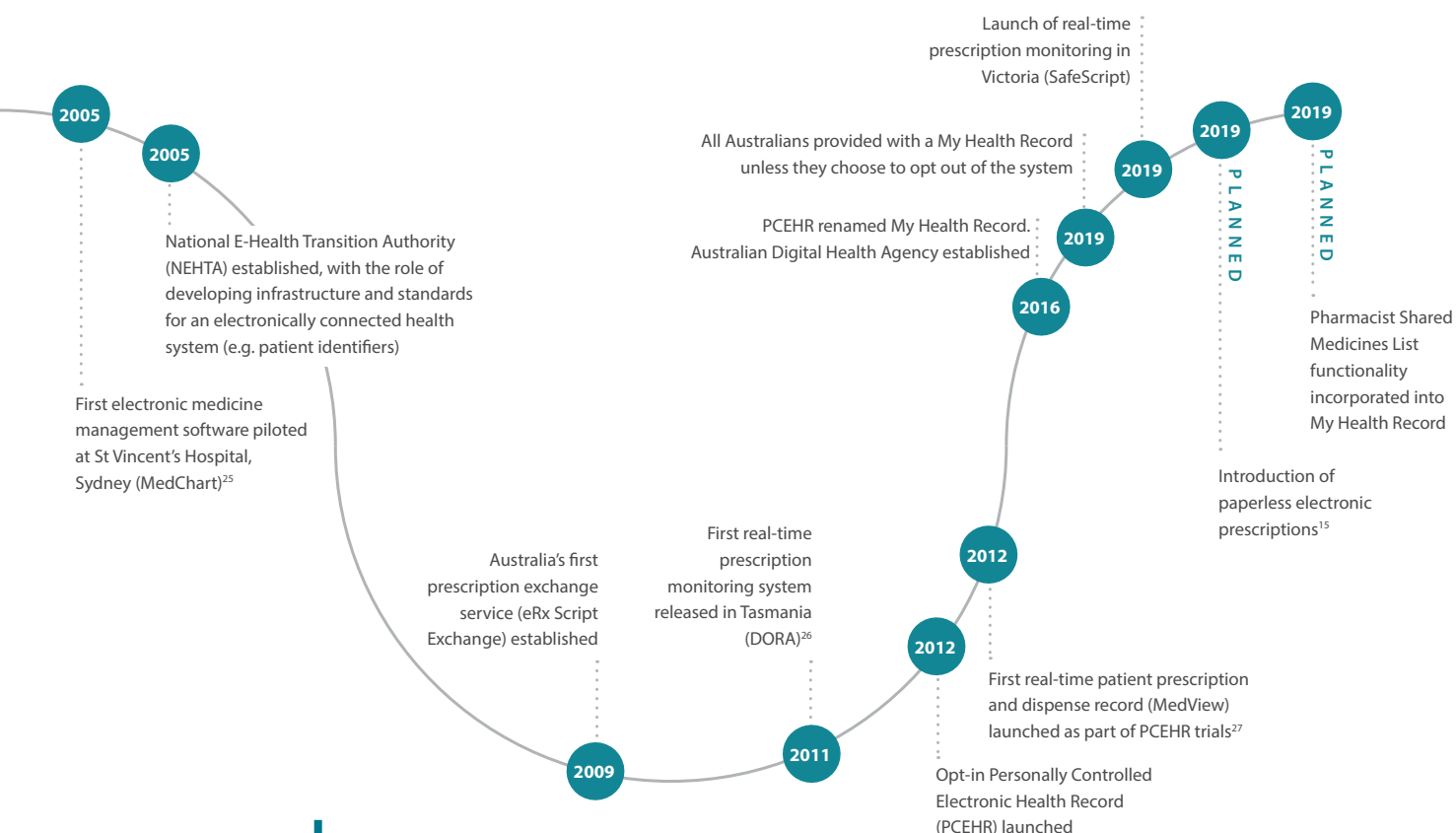
### Wave 3: Real-time interconnectivity of consumers and health care providers (2018-2023)

In recent years, Australia’s health system has embarked on an ambitious transformation

agenda, supported by technological changes. This transformation agenda represents a third wave of digital transformation for pharmacists: genuine, online, real-time interconnectivity of healthcare providers with consumers and with other healthcare providers.

The transition of the My Health Record system to an opt-out system in February 2019 brought the participation rate in the patient-controlled electronic health record system up to 90.1% of Australians.<sup>20</sup> Other significant priorities in digital health will achieve critical mass in 2019, especially the move of the Australian Digital Health Agency’s Medicines Safety Program into the implementation phase.

## 2010s







# BENEFITS OF DIGITAL HEALTH

Digital technology provides the means to rapidly compile and share information on demand, which can effectively resolve major factors that contribute to medicine-related problems, such as gaps in communication and time delays in accessing information.

## Digital health has been associated with<sup>28-30</sup>:

- more coordinated and more efficient health care, predominantly from reducing delays in care and inappropriate care caused by communication gaps.
- improvements in safety and quality of care from better system design, which can include decision support tools.
- analysis of data in real time to provide more effective care.
- improved access to the skills and knowledge of health professionals through telehealth consultations and other time-efficient communication tools.
- greater patient engagement through patient and carer access to their own health information (transparency), personalised care, and self-management tools that are curated and responsive to patient needs.
- system improvement and learning that are not possible with existing systems (e.g. data and analysis to support an evidence-based learning culture, data-driven system design).

## These benefits manifest at a patient, pharmacists and health-system level<sup>3</sup>:

### For patients



- Improved access to healthcare through adoption of digital initiatives.
- Consumer empowerment through access to information.
- Improved outcomes associated with medicine use through improved communication and access to information.
- Improved access to healthcare through digital means.

### For pharmacists



- Improved efficiencies in the delivery of healthcare.
- Increased access to clinical information required for pharmacist roles.
- Increased ability to be responsible and accountable for medicine safety through proactive participation in digital health systems.
- Improved linkages through virtual environments to the healthcare team.

### For Australia's health system



- Reduction in medicine misadventure due to improved information sharing and reduced fragmentation of care.
- Improved treatment of chronic disease and achievement of treatment targets.
- Reduced medicine related hospital admissions due to improved clinical handover at transitions of care.
- Improved access to healthcare through adoption of digital initiatives.
- Reduction in health system cost burden due to adverse medicine events through maintenance of accurate and current health information.
- Improved access to data in order to monitor trends in medicine utilisation.
- Reduced medicine wastage.
- Improved efficiencies in the healthcare system.

# DIGITAL HEALTH

## POLICY CONTEXT

### The Australian Digital Health Agency's Medicine Safety Program

The Australian Digital Health Agency outlines a coordinated national medicines safety agenda in its *Blueprint: Medicines Safety Program—Part of the National Digital Health Strategy*.<sup>31</sup> This program of work, drawn from the National Digital Health Strategy, represents possibly the most substantial medicines safety agenda since the development of

Australia's *National Medicines Policy*.<sup>32</sup>

The digital health actions described in the *Blueprint* will transform pharmacist practice, giving pharmacists the tools and information to make better, more informed clinical decisions that support safe and effective medicine use by their patients. The actions are listed in Table 1.

**TABLE 1: Actions for safe and effective medicine use by patients**

Action	Overview of action	Planned completion
Electronic prescriptions	Introduction of fully electronic prescriptions as an alternative to paper-based prescriptions	2019
Best Possible Medicines List	Pharmacist-curated shared medicines list that captures a point-in-time complete list of medicines a patient is using, including non-prescription medicines	2020
National Medicines Data Service	Clinical dictionaries to enable effective communication between clinical systems (e.g. prescription exchange server to pharmacy dispensing software)	2021
Medicines information for consumers	Integration of Consumer Medicine Information (CMI) and other consumer-level health information into the My Health Record system and conformant software to improve access	2021
Medicines decision support tools	Establishing standards and guidelines to inform medicine-safety decision support in clinical software	2020
Enhance incident reporting capabilities (including alignment with National Allergy Strategy)	Establishment of national pharmacovigilance system, involving shared systems and platforms that integrate the Australian Register of Therapeutic Goods with effective prescription monitoring, and incident and outcome reporting systems to improve pharmacovigilance	2021
Real-time prescription monitoring	Build on existing programs to ensure national interoperability of real-time monitoring for medicines that present a high risk of harm from inappropriate use (e.g. opioids)	2021/2022

There is strong concordance between the Australian Digital Health Agency's digital health strategy, the Pharmaceutical Society of Australia's (PSA's) *Pharmacists in 2023*<sup>3</sup> (**Appendix 1**) and The Pharmacy Guild of Australia's *CP2025*,<sup>29</sup> particularly in relation to medicine safety (**Appendix 2**).



'THIS PROGRAM OF WORK, DRAWN FROM THE NATIONAL DIGITAL HEALTH STRATEGY, REPRESENTS POSSIBLY THE MOST SUBSTANTIAL MEDICINES SAFETY AGENDA SINCE THE DEVELOPMENT OF AUSTRALIA'S NATIONAL MEDICINES POLICY.'

# THE FUTURE

The PSA sees a future in which digital technologies make medicine use safer for patients.

We see a future in which pharmacists use digital technology regardless of their practice setting, and have access to enough relevant information to safeguard consumers from the preventable harm medicines cause, and maximise safe and effective use of medicines.

We see a profound improvement in patient care that this will achieve. The predominant enabler of these changes will be technology.

**By 2023, pharmacists will be more responsible and accountable for medicine safety, enabled by digital health and digital technologies.**

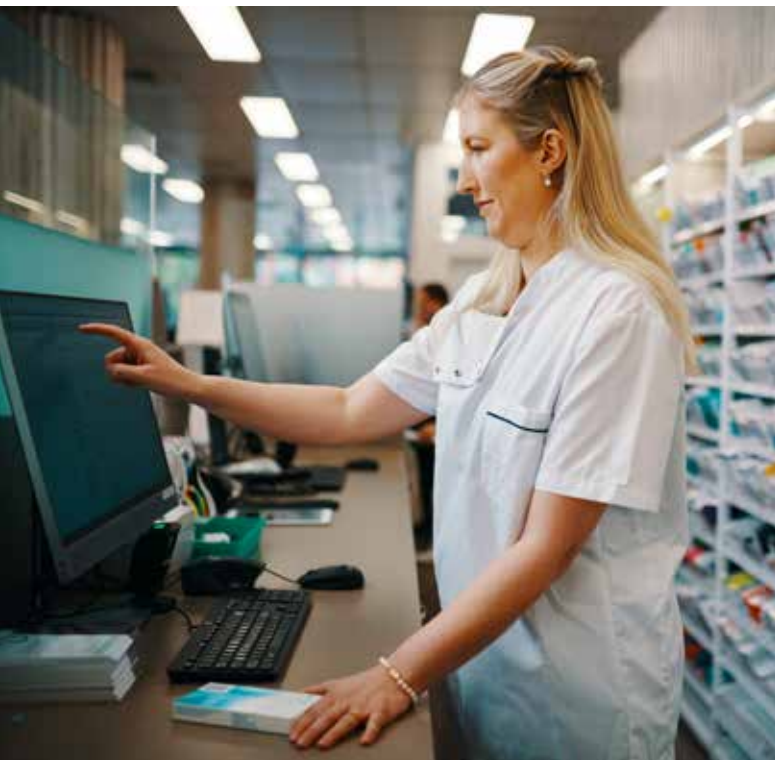
**This means that by 2023, pharmacists will be:**

- supported with the right patient information, systems, autonomy and clinical skills to safeguard patients against avoidable harm from medicines
- empowered and accountable for identifying and resolving medicine-related problems more systematically in genuinely patient-centred models of care
- accessible wherever medicines are prescribed or used, at a time, format and location that suit the needs and preferences of patients
- more informed regarding risks and benefits of medicines through improved pharmacovigilance and data analysis
- spending more time providing direct patient care, and less time undertaking administrative roles.

**consumers will be empowered through:**

- experiencing pharmacist care that is more active in achieving benefits from medicine while preventing harm
- accessing curated medicines and health information at any time that is convenient for them, in a way they can understand and apply to their health
- support from pharmacists to take a greater role in self-management of medicines, through digital technology
- health care that is accessible wherever medicines are prescribed or used, at a time, format and location that suit their needs and preferences
- a health system that integrates with personal consumer technology, including mobile devices and wearables.





**The improvements will stem from:**

- **instant, universal availability of pivotal health information.** The biggest failings in patient safety come from ineffective communication, rather than a lack of clinical knowledge or skill.<sup>33-35</sup> Digital health's primary benefit comes from rapid and universal sharing of relevant, up-to-date information between health professionals and with consumers, assuming consumer consent and participation.

This will dramatically change the way health professionals work. It will take care from a siloed, partial view of a consumer to a central 'whole-of-patient-health' view, which allows holistic care, rather than transactional care.

- **increased transparency.** One-to-many records (as opposed to one-to-one records) will increase the number of people viewing health information, and therefore the number of people who are able to identify gaps in care and rectify them. Consumer health literacy will increase when consumers can

access thorough and more complete information about their health and, where authorised, the health of family members. For example, accessing personal information online about prescribed medicines and dosing empowers consumers by increasing their understanding of medicines and their appropriate use.

- **increased recognition of pharmacists' contribution.** As more health professionals interact with digital health systems, other health professionals will use and rely on the health information contributed by pharmacists in providing patient care. Similarly, consumers accessing information uploaded to their health systems by pharmacists will use and rely on this information. Over time, this will see wider recognition of the contribution of pharmacists as an integral member of the care team, particularly in relation to providing medication support services and primary health interventions.

This recognition will stimulate demand by consumers and other health professionals for







pharmacists' expertise, leading to improvements in medicine safety and quality use of medicines.

Effective pharmacovigilance systems need to be supported by quality improvement measures to encourage, measure and recognise the professional contribution of pharmacists to identifying, resolving and reporting medicine-related problems. This will contribute to a greater recognition of the professional contribution of pharmacists.

- **more empowered consumers.** Consumers are increasingly engaged in digital systems across their life, and health care is no exception. Digitally engaged patients are increasingly expecting greater involvement in decisions that affect their health, and customised care that reflects their values, informed choices and preferred mode of delivery.<sup>30</sup>

Connected records enhance the ability of consumers and their carers to play a greater role in decision making, and ensure that care is more patient centred. This extends to consumer use of digital applications (e.g. digital dose reminders, blood pressure, blood glucose levels) to monitor and record health parameters that can inform health professionals and health decisions.

- **increased accessibility of care.** Few health providers are available 24/7, and, even for providers that are, few health services are available 24/7. However, the need for consumers to access health care or make health decisions at home does exist 24/7.

The accessibility of information 24/7 substantially removes delays in accessing important health information, empowering informed decision making, regardless of date or time. This informs higher-quality decision making and empowers pharmacists to be more responsible for medicine safety. The ability to access information also supports informed care provided by pharmacists in rural areas, where other health services are available for only very limited hours.

Digital technologies may help patients identify available health services, which could also indicate medicine availability, based on geographical location. This information could, in time, facilitate the deployment of health services and medicines to hard-to-reach locations or in times of need.

Digital technology also provides opportunities for virtual interactions, through secure messaging, secure videoconferencing or other emerging technologies. The enablement of remote care may be useful for improving access in rural and remote communities, as well as for people who have mobility limitations.

# NOW

- ISOLATED • FRAGMENTED • SLOW

**RECALL MEDICINE AND INDICATION  
(IF KNOWN)**

## ACCESSING PATIENT INFORMATION

**SECURE ID**

- MEDICINE LIST
- EVENT SUMMARY
- PATHOLOGY
- ALLERGY STATUS
- PRESCRIPTIONS

# FUTURE

- SECURITY • TRANSPARENCY • INCREASE HEALTH LITERACY
- RECOGNISE PHARMACISTS' CONTRIBUTION

**ADRAC**

- MANUAL AD. HOC. REPORTING OF ADVERSE EVENTS

## INFORMING PRACTICE & CARE

**MSAC PBAC TGA**

**PHARMACOVIGILANCE  
SUPPORTED BY DE-IDENTIFIED  
CLINICAL INCIDENT AND  
HEALTH OUTCOME DATA**

Figure 3: Transforming patient-centred care by embracing technology in pharmacist practice



- ✓ 3D BARCODES
- ✓ POSITIVE ID
- ✓ NO TRANSCRIBING
- ✓ CLINICAL CHECK SUPPORTED BY MORE COMPLETE PATIENT VIEW



CONSUMER CAN:

- ✓ SEE TAPERED DOSES
- ✓ REVIEW INSTRUCTIONS
- ✓ CHECK FOR ADVERSE EFFECTS
- ✓ SHOW TO FAMILY/CARERS
- ✓ DIRECT MESSAGE PHARMACIST WITH QUESTIONS



**SAFETY SYSTEMS**

**ACCESSING INFORMATION AT HOME & ON THE GO 24/7**



- 2D BARCODES, IF ANY
- ERROR RISKS FROM SIMILAR NAMES OR UNCLEAR HANDWRITING
- CLINICAL CHECK BASED ON LIMITED INFORMATION



CONSUMER UNABLE TO ACCESS THEIR HEALTH INFORMATION AFTER HOURS

# ILLUSTRATING A 'NEW NORMAL': **PATIENT SCENARIOS**

The future of pharmacist practice is demonstrated in the following scenarios of a 'new normal' in pharmacist care. These scenarios show the tangible improvements patients will experience by 2023 once major digital health programs have been fully implemented.

## **SUPPORTING SAFETY IN HIGH-RISK MEDICINES**

### EXAMPLE 1



**Susan (47-year-old female) is prescribed an opioid analgesic at the hospital emergency department for pain caused by a broken arm following a bicycle accident.**

#### **01**

##### **Electronic prescription**

Patient can instantly send to pharmacy without being physically present at pharmacy

Patient can see available medicines online and cannot lose prescription

Susan appreciated not having to wait at the pharmacy with her broken arm, as the prescription could be sent to the pharmacy electronically, and the pharmacist was able to review her medicines and health information before she arrived at the pharmacy.

In this case, digital health has improved medicine safety for Susan, improved her ability to effectively manage her acute pain, and made going home from the hospital less stressful.

## 02

### Secure messaging

Additional tool to electronically collaborate with prescriber to resolve any identified medicine-related problems

**My Health Record:** Pharmacist can review for drug interactions, duplications and omissions

**PSML:** Pharmacist can review for drug interactions

**Allergy:** Safety check for opioid allergy

**Real-time prescription monitoring:** data to support pharmacist take steps to reduce risk of opioid dependence or overdose

The pharmacist noted use of regular paracetamol for mild osteoarthritis and a benzodiazepine for occasional sleep problems in her Pharmacist Shared Medicines List, and helped Susan understand how to use them together effectively and safely.



## 04

### My Health Record:

GP can review previous treatment provided

## 03

**My Health Record:** Patient can check instruction for use in PSML and dispense record 24/7

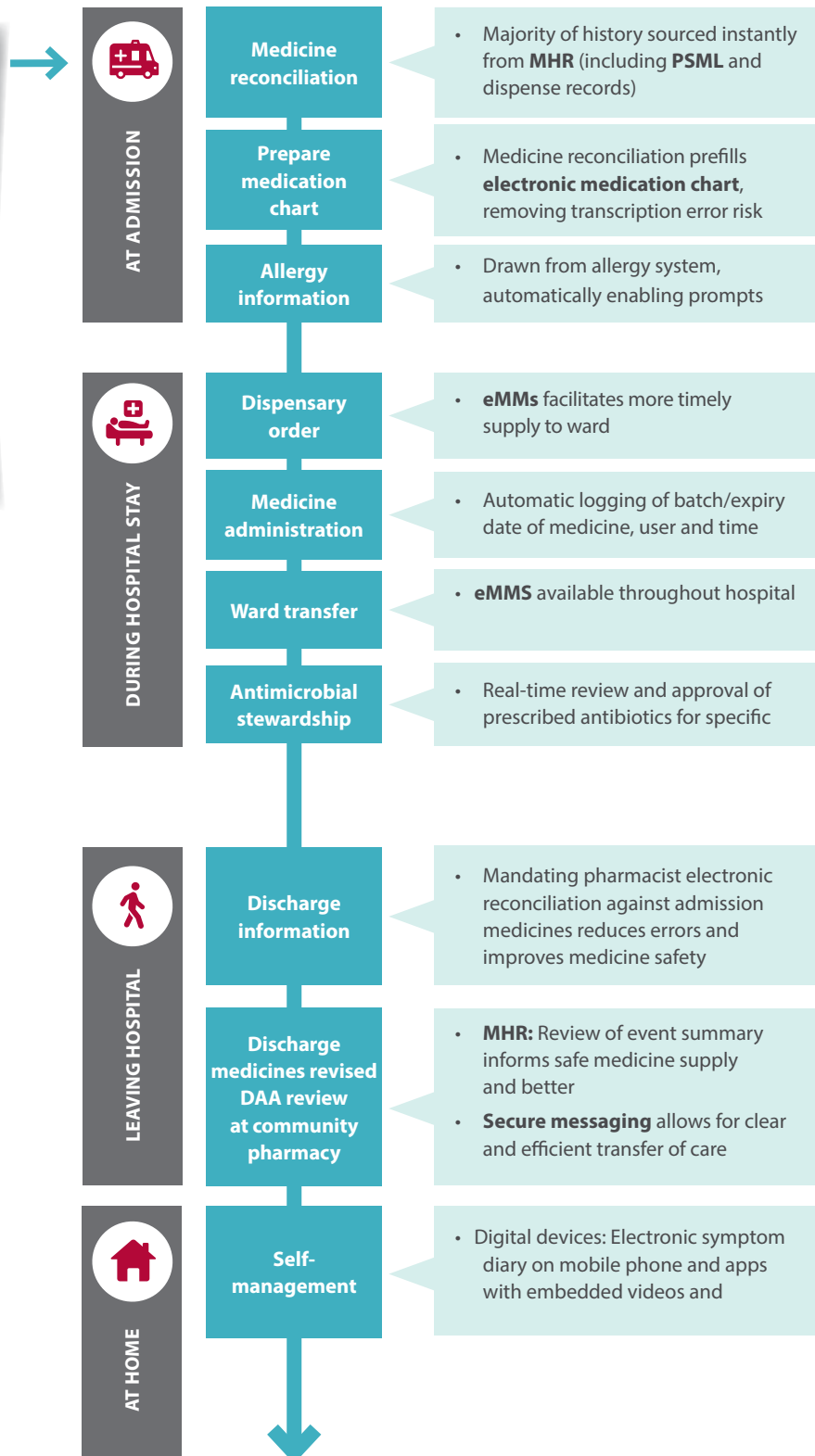
Susan was pleased and relieved that she was able to look up her My Health Record at home late one evening to confirm the frequency and duration of her opioid medicines following conflicting advice from family members about their experiences with similar medicines.

# IMPROVING TRANSITIONS OF CARE

## FEATURES OF FU MANAGEMENT



Reginald (78 year-old male) presents to the emergency department at his local hospital following a severe-flare up of chronic obstructive pulmonary disease (COPD).



AMS = antimicrobial stewardship;  
 DAA = dose administration aid;  
 eMMS = electronic medication management system;  
 MHR = My Health Record;  
 PSML = Pharmacist Shared Medicines List



## TURE MEDICINE

## BENEFITS TO REGINALD

- History clarified and confirmed with patient/family



Reginald was pleased that the medicines reconciliation was quick and efficient.

- Decision support, formulary management, clinical coding and audit trail automated

He confidently answered clarifying questions about how he used his medicines, but was pleased he didn't need to remember everything himself; for example, he'd forgotten about a new blood pressure medicine he'd recently been prescribed but hadn't started.

- Real-time medication chart available for clinical review

- Barcode scanning at administration reduces selection errors

- Artificial intelligence could be used to identify patient deterioration

duration and indications supports more timely, rational use



Reginald has a known penicillin allergy, but otherwise was able to be promptly and appropriately treated with oral antibiotics, in line with decision support from the hospital's AMS guidelines and COPDX evidence summary for exacerbation management.

- **Electronic prescriptions** can be sent to pharmacy of choice

Reginald was happy to leave the hospital and go straight home, confident his regular pharmacy take care of the medicines he needed on the day of discharge.

- **Electronic prescriptions** increases efficiency of supply of medicines following discharge



measurements improve inhaler device use



Reginald found it easier to monitor his COPD with a diary of symptoms. He found it particularly helpful to discuss his self-management with his healthcare professionals.

# IMPROVING TIMELY PATIENT ACCESS TO MEDICINES AT TRANSITIONS OF CARE

Arshan (68-year-old male) presents to a community pharmacy on a Sunday morning. He was travelling interstate to see family, and his trip was extended as a result of an unplanned hospital admission due to an episode of angina. He asks the pharmacist to prepare an ad hoc dose administration aid (DAA), as he is staying with family for a few extra weeks and has run out of his medicines.



Arshan appreciated that this was a smooth experience for him and his family because:

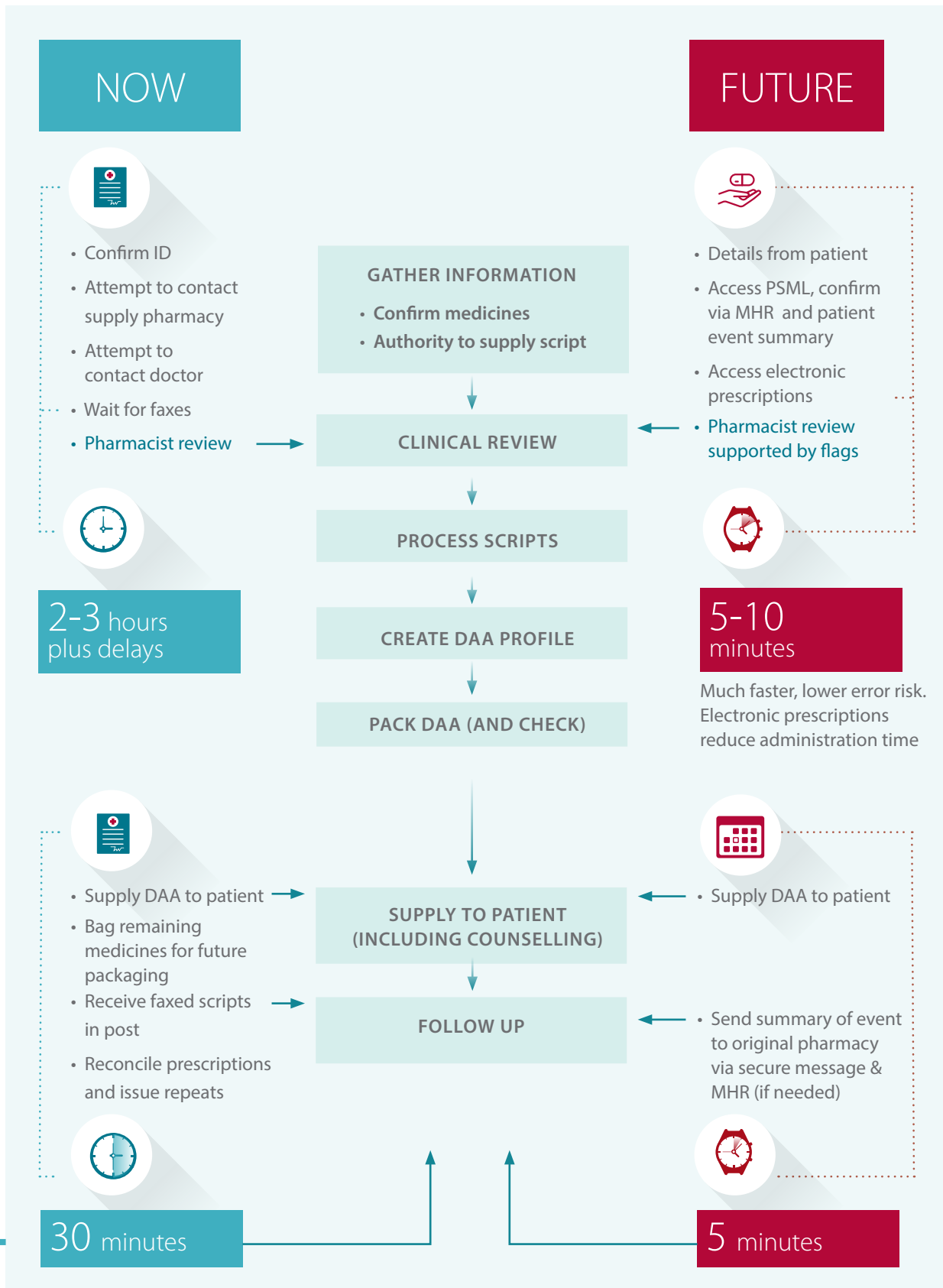
- he didn't have to unnecessarily make a GP appointment for the sole purpose of having prescriptions written for long-term medicines
- his family was able to focus on caring for him post-discharge rather than managing the stress

of arranging appointments for doctors' visits, and trips to and from the pharmacy to transport prescriptions

- his main pharmacy at home could see what was happening with his DAAs while he was away from home, didn't unnecessarily continue packing his medicines and was able to update his pack more efficiently when he went home.



# EXAMPLE 3



# POLYPHARMACY AND NEW MEDICINES:

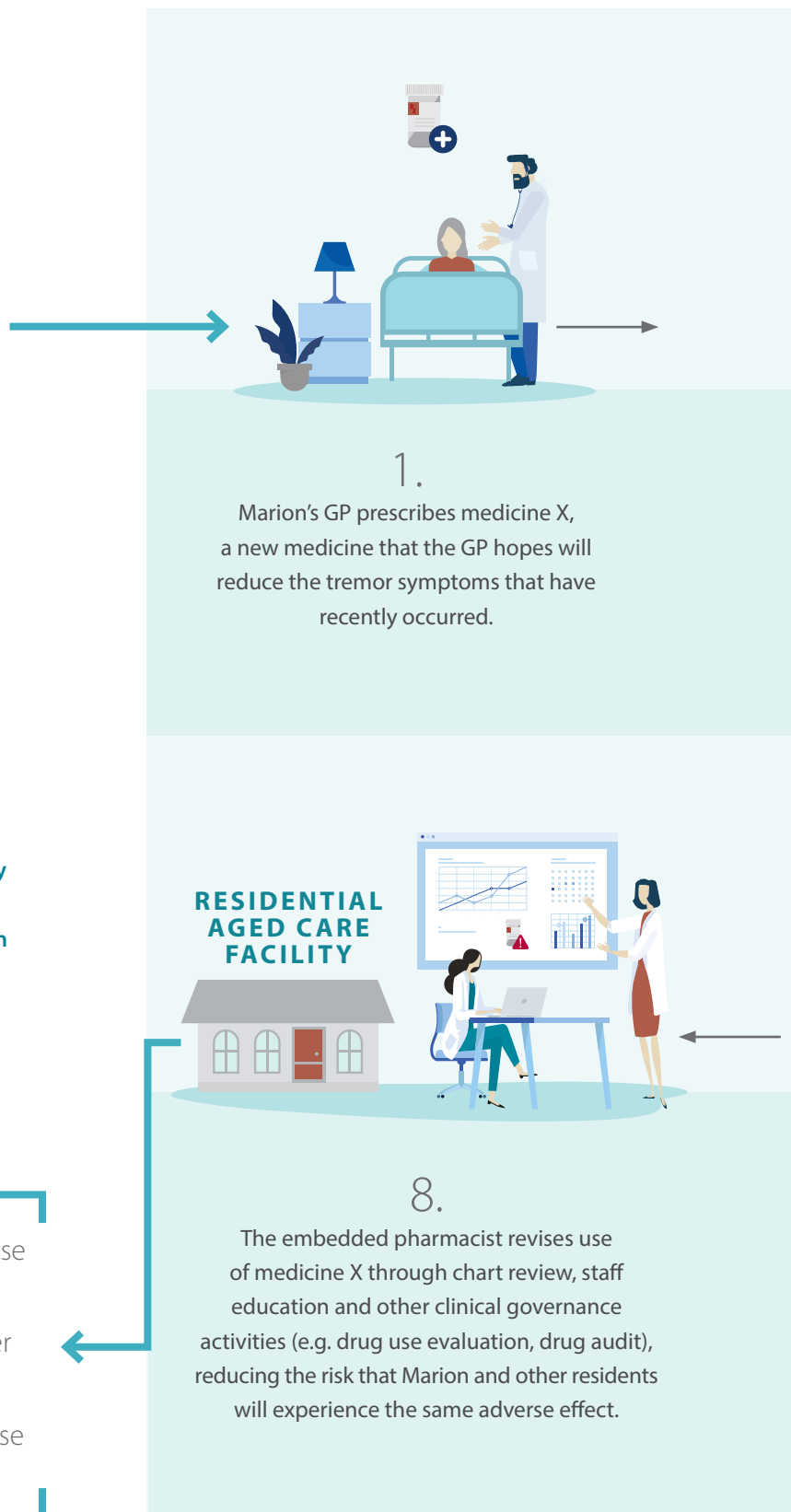


## HOW ELECTRONIC PHARMACOVIGILANCE SYSTEMS CAN INFORM SAFER AND MORE EFFECTIVE MEDICINE USE IN AGED CARE

Marion is a 91-year-old resident of an aged care facility who takes 13 medicines to manage a range of health conditions, including type 2 diabetes. Recently, Marion has been experiencing a tremor, which is making it difficult to eat, shower and read. She asks her care team what can be done to reduce the shaking.

Marion's experience with an unknown adverse effect with a new-to-market medicine:

- was able to be effectively managed by her care team, improving her quality of life
- helped alert others to the potential adverse effects in a timely and efficient manner



# EXAMPLE 4



2.

At a regular case conference 2 weeks later, the embedded pharmacist identifies cognitive decline that has occurred in the past 2 weeks, but has no obvious cause. As a precaution, the care team ceases medicine X and starts a different medicine for these symptoms. Marion's tremor and cognitive function both improve.

3.

The community pharmacy that supplies Marion's medicines is advised via secure messaging, and an electronic prescription is provided.

4.

The embedded pharmacist logs the change on the patient record, and uses the clinical system to instantly create and send a de-identified report to the pharmacovigilance system.



7.

Updates are communicated to health professionals directly, and via continuing professional development.

6.

The data inform a safety warning from the Therapeutic Goods Administration and product sponsor about a new adverse effect for medicine X, including an update to the Product Information. Clinical guidelines are updated to include impact of cognitive decline on recommended use.

5.

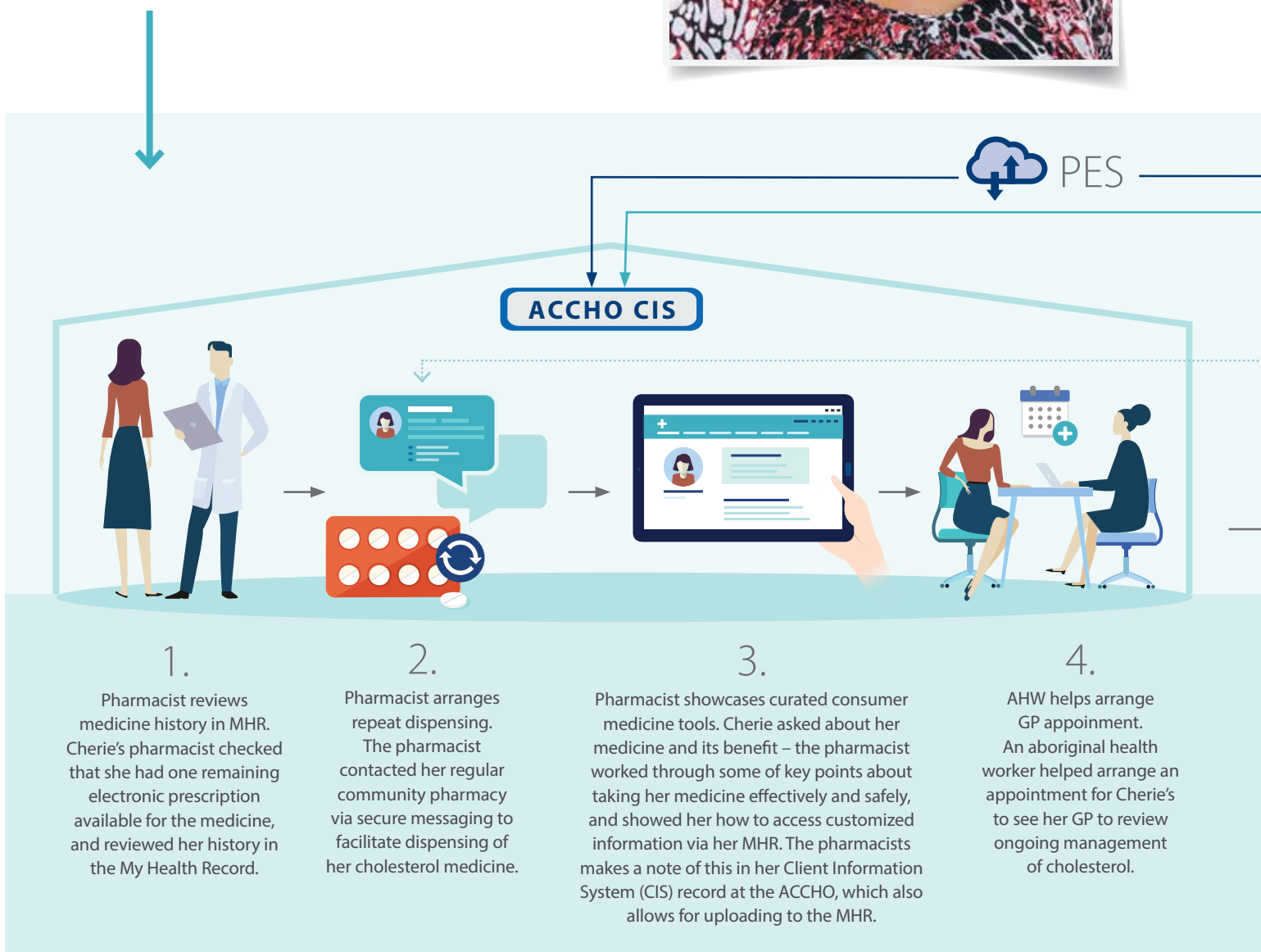
The report adds to the evidence base of adverse effects for the medicine, in addition to other de-identified population-level data.

RACF = residential aged care facility; TGA = Therapeutic Goods Administration



# SUPPORTING CHRONIC DISEASE MANAGEMENT

Cherie, a 45-year-old Aboriginal woman, has recently returned from a trip seeing family interstate. While she was away, she saw an interstate general practitioner (GP), who wrote her a prescription for a new cholesterol medicine to start taking following some recent blood tests for an unrelated matter. Cherie has now run out of the medicine. Cherie remembers that the medicine was for cholesterol, but doesn't recall the name or strength of the medicine. Cherie mentions this when visiting her local Aboriginal Community Controlled Health Organisation (ACCHO) and asks the pharmacist there to help her.

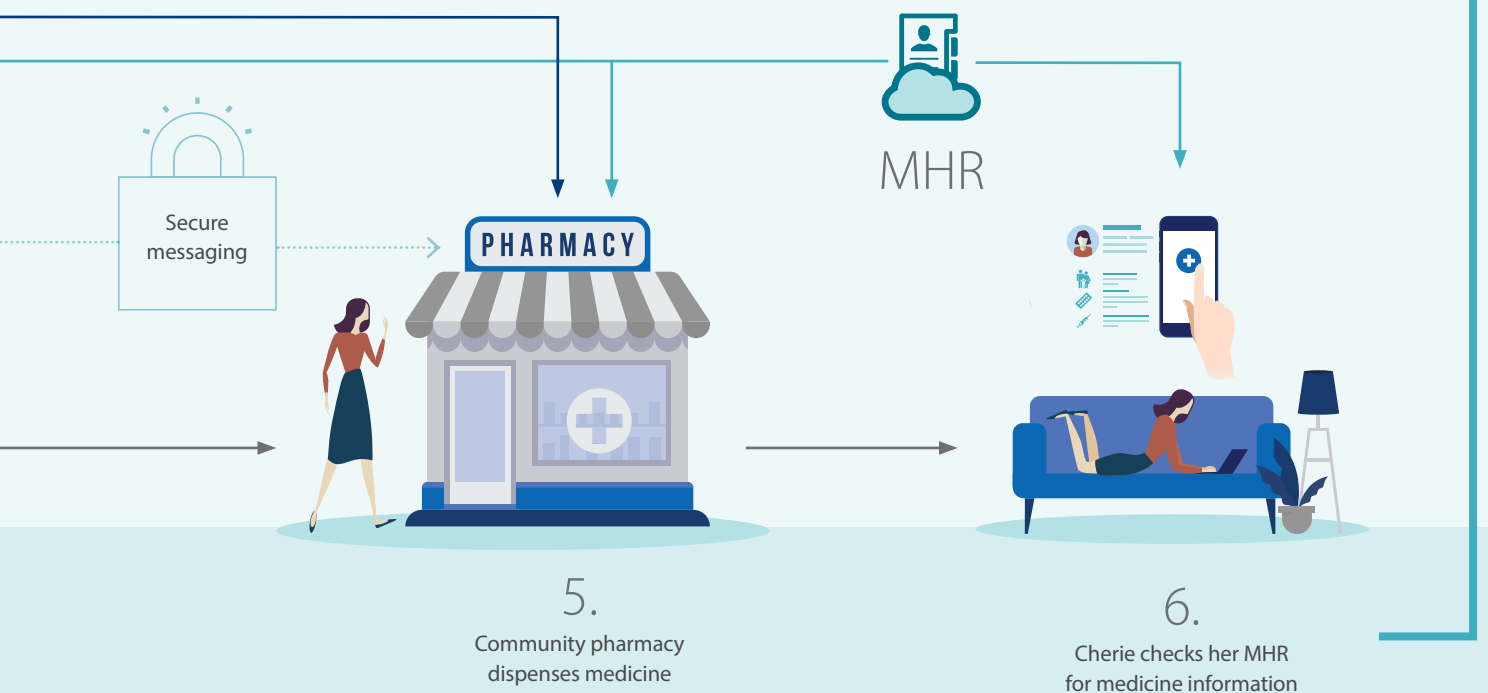


# EXAMPLE 5

Cherie was pleased that her health care experience was seamless and that she could now access her health information at any time. This was enabled by:

- access to curated consumer health information relevant to her health needs and health conditions.

- ability of the pharmacist to check her records, including for remaining prescriptions and contact her community pharmacy via secure messaging on her behalf.



AHW = Aboriginal health worker;  
CIS: Client Information System; GP = general practitioner; MHR = My Health Record;  
PES: Prescription Exchange Server.



'INNOVATION IN  
VENDOR DEVELOPMENT,  
INCLUDING GENUINE  
CO-DESIGN WITH END  
USERS, IS ESSENTIAL  
FOR THIS TO BE  
EFFECTIVELY ACHIEVED.'

# MAKING THE FUTURE HAPPEN

Digital replication of existing manual systems or isolated electronic systems will not achieve the medicine safety goal described in this document. Achieving safer medicine use through technology that empowers pharmacists requires investment, support, leadership and effective coordination.

**The system changes below, outlined in *Pharmacists in 2023*,<sup>3</sup> set out what needs to happen for this to be realised. They describe changes that professional bodies, government and health professionals must lead to create an environment in which pharmacists, software vendors and consumers make the change to a healthcare system that much more effectively protects the medicine safety of patients.**

## Establishing a connected healthcare community

Digital systems such as My Health Record will, for the first time, provide pharmacists with real-time access to health information that, generally, has previously been sourced through a discussion with the patient. Although the richness of this information can empower clinical decisions that support safer and more effective medicine use, suboptimal system design risks creating unnecessary ambiguity and information paralysis. Digital systems therefore must evolve and be connected in a way that supports health professionals to deliver care.

This necessitates design and development of systems that are:

- **intuitive** for pharmacists, consumers and other health professionals to interact with in a way that enhances patient interactions and clinical reasoning, rather than getting in the way of the practitioner–patient relationship. This includes design that presents information in a way readily understood by consumers, health professionals and other system users.
- **readily accessible** at the point where care is provided. This will increasingly require systems and infrastructure that enable straightforward and universal remote and mobile access.

Clinical information systems will need to evolve to patient management systems in the pharmacy, and pharmacists will need to be able to interact with other health professionals in a seamless, effective and efficient way. Innovation in vendor development, including genuine co-design with end users, is essential for this to be effectively achieved.

## Equipping a digitally enabled pharmacy health workforce

Pharmacists must be actively supported to use and interact with digital initiatives, with the aim of improving quality use of medicines and access to health care. This includes access to the infrastructure and systems required to provide safe, effective, patient-centred care in a digitally transformed health system.

The profession needs support and training to engage with, adopt, use and embrace digital transformation as a way of improving healthcare delivery. This extends to all development activities—from initial tertiary qualifications to continuing professional development and advanced practice. The nature of this guidance will evolve. Pharmacists will increasingly engage with digital technology as part of their undergraduate training and ongoing professional development, such as case-based simulations.

## Enabling flexible remuneration programs that incorporate digital interaction with patients

If digital transformation of health service delivery is to improve the care of patients, digital or virtual interactions must be recognised as suitable and flexible ways for pharmacists to support patients in their care.

Consumers expect to be able to access health information at home, and increasingly do so via online search tools. Although not replacing face-to-face interactions, the additional availability of pharmacists' medicine expertise in the home through digital technology is vital to improving safe medicine use in the home.

Remuneration programs for pharmacists need to recognise the use of digital interaction, such as telehealth, with patients. This is particularly important for people living in rural and remote areas without ready access to face-to-face interactions with a pharmacist.

## Ensuring that digital transformation is driven by data analysis

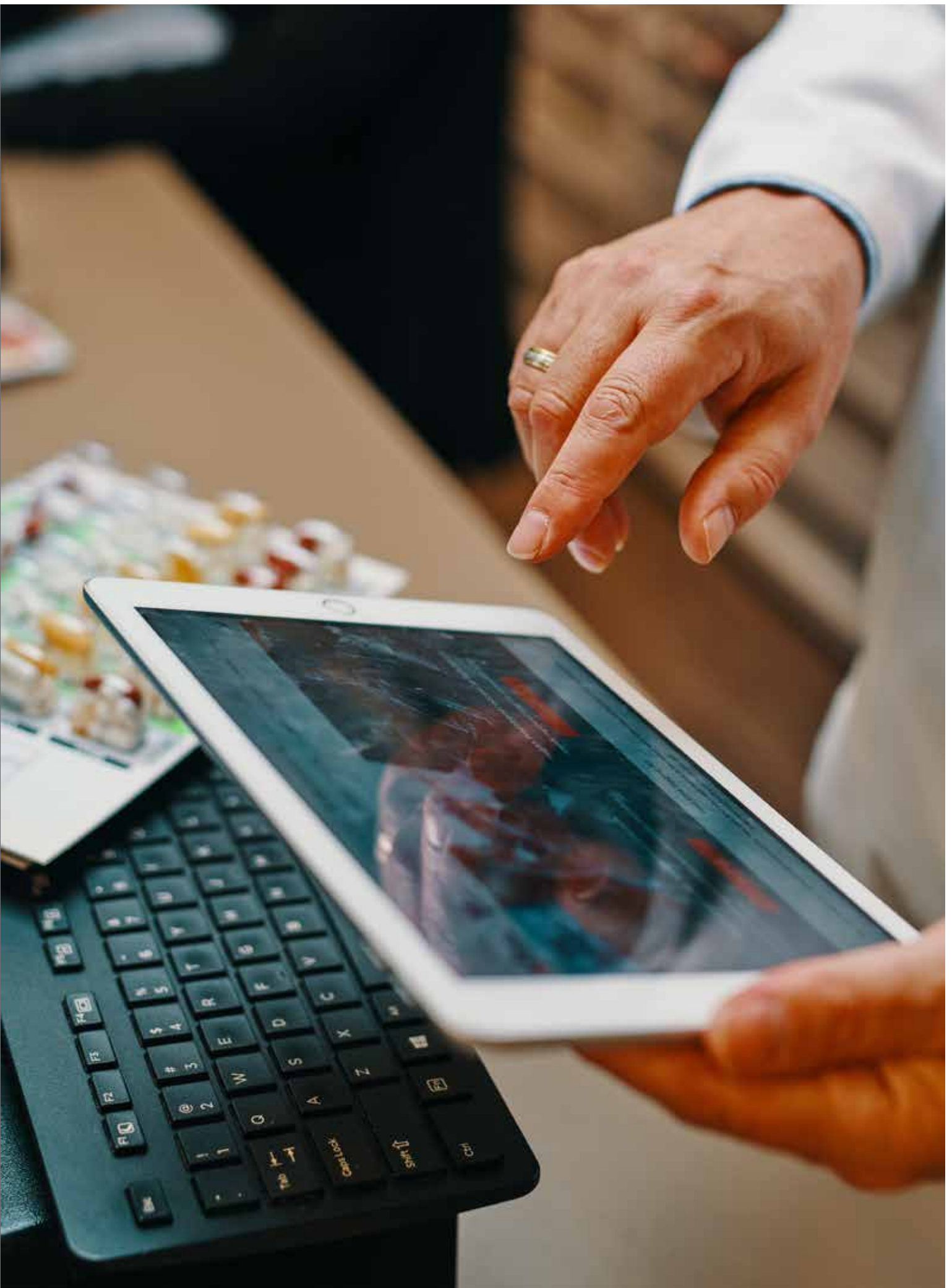
Effective implementation is crucial. Although electronic systems are known to reduce clinical, procedural and legal errors in prescribing, experience in electronic management systems in Australian hospitals and in the community overseas shows that further work is needed to effectively protect patients from the most severe harms medicines can cause.<sup>36,37</sup>

Access to an analysis of data must drive system improvement at the individual patient, population and system levels. This includes data on outcomes, interventions, patient journeys and practitioner workflows.

These changes will be achieved through:

- partnership of government agencies (e.g. the Australian Digital Health Agency, Australian and state/territory health departments), providers and professional bodies in delivering these actions in co-design with consumers
- technology vendors responding to government policy, customer (i.e. provider) demand, patient expectations, technological trends and competitive innovation
- advocacy and leadership of professional bodies, such as PSA on behalf of pharmacists.





# BEYOND 2023

Although significant projects over the next four years will provide the infrastructure for the future described in this document to be realised, full adaptation to the digital world will take time, as consumers and health providers develop trust, skill and knowledge of these systems.<sup>16</sup>

**Indeed, while this wave of technological transformation facilitating real-time connectivity to more complete health information is somewhat finite, innovation and change in how technology shapes our health system are constant.**

The full impact of longer-term digital health megatrends is difficult to predict, but is likely to involve<sup>16,38</sup>:

- **artificial intelligence** which guides and alerts consumers, their carers and their health providers to health events requiring urgent attention (e.g. signs of a heart attack). Indeed, it is likely that artificial intelligence may initiate care, such as deploying paramedics to a person's home following a health event
- **virtual reality and augmented reality** as tools to improve consumer understanding and health professional interventions and to facilitate teaching and training

- **robotics** to continue to automate more technical and administrative roles of health professionals
- **wearables and implants** that continuously monitor and manage acute chronic health conditions, providing earlier warning of health events and potentially enabling people to spend more time at home and less time in hospital.

Essential to the rate of adoption of technologies will be the same factors that will drive the realisation of the Pharmacists in 2023 vision: acceptability to health professionals and consumers, trust and engagement, affordability, interoperability, accessibility and ease of use.



# APPENDICES

## APPENDIX 1:

### COMPARATIVE MAPPING: PSA'S PHARMACISTS IN 2023 ACTIONS ALIGNMENT WITH THE AUSTRALIAN DIGITAL HEALTH AGENCY'S MEDICINE SAFETY ACTIONS

	ACTION 1 MEDICINE SAFETY	ACTION 2 COMMUNITY PHARMACY	ACTION 3 CARE TEAMS	ACTION 4 PHARMACIST PRESCRIBING	ACTION 5 TRANSITIONS OF CARE	ACTION 6 HEALTH HUBS	ACTION 7 WORKFORCE DEVELOPMENT	ACTION 8 FUNDING	ACTION 9 RURAL AND REMOTE	ACTION 10 RESEARCH AND EVALUATION	ACTION 11 DIGITAL TRANSFORMATION
4.1.1 Digital Medicines Program Blueprint	+++	++	N	N	N	N	N	N	N	N	++
4.1.2 Electronic Prescriptions	+++	+++	N	+	+++	+	N	N	++	N	+++
4.1.3 Best Possible Medicines List	+++	+++	+++	N	+++	++	N	N	++	N	+++
4.1.4 National Medicines Data Service	++	++	+	N	++	N	N	N	N	N	+
4.1.5 Medicines information for consumers	++	++	N	N	++	N	N	N	N	N	+
4.1.6 Medicines decision support tools	++	+++	++	+	+	N	N	N	+	N	+++
4.1.7 Enhance incident reporting capabilities	+++	+++	+++	+	+++	++	N	+	++	+	+++
4.1.8 Align National Allergy Strategy	++	+	+	+	++	N	N	N	+	N	++
4.1.9 Real time prescription monitoring	+++	+++	+	++	++	N	N	N	N	N	++

+++ = High relevance; ++ = moderate relevance; + = mild relevance; N = no direct relevance

Source documents:

- Medicines safety actions, National Digital Health Strategy<sup>15</sup>
- Pharmacists in 2023: Ffor patients, for our profession, for Australia's health system<sup>2</sup>

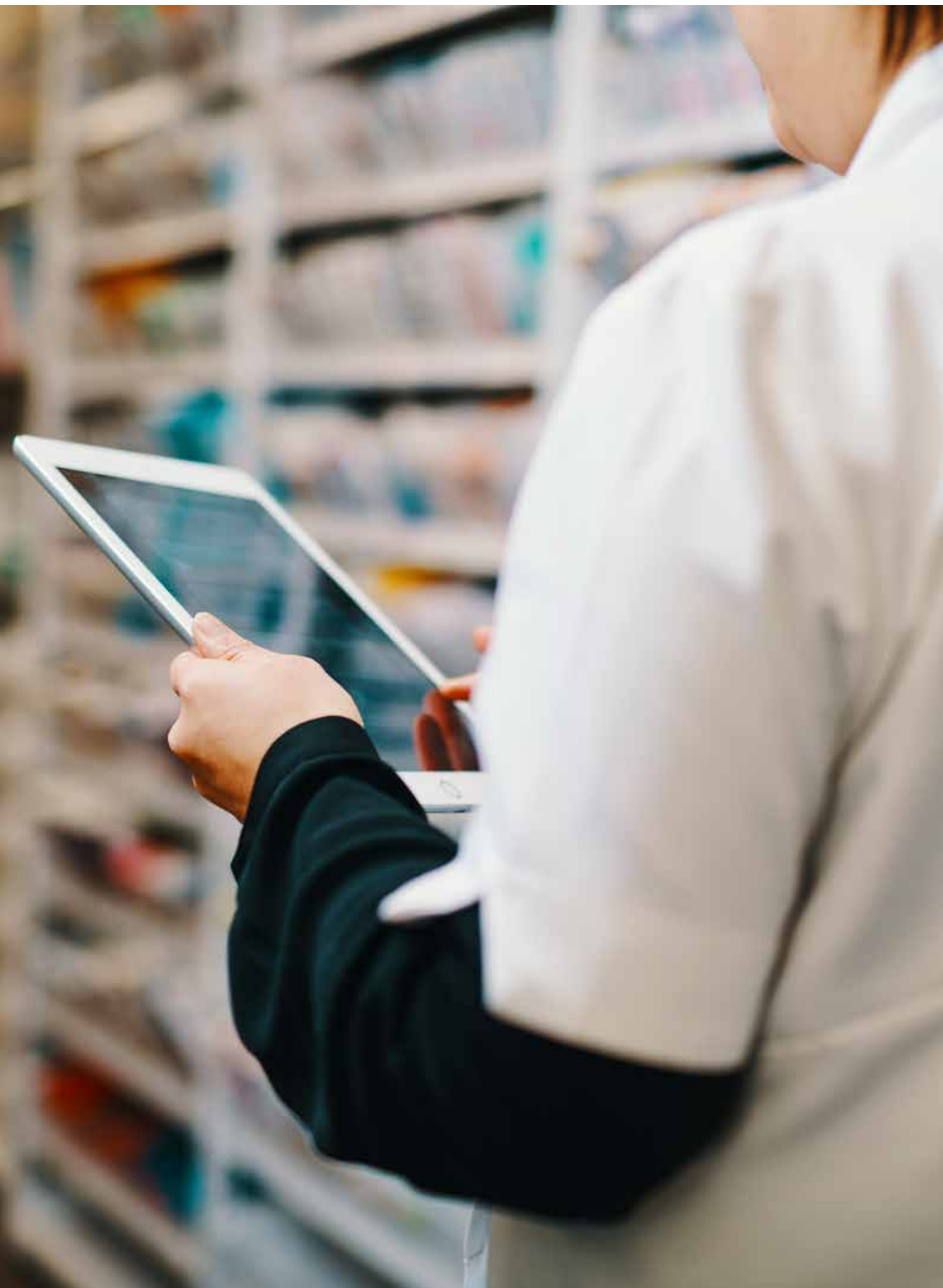



# APPENDIX 2:

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Digital transformation will connect the dots enabling pharmacists to make better clinical decisions with their patients.

