



CommunityCare

DIGITAL TRANSFORMATION PLAN

A guide for Community Care Organisations
to uplift and accelerate digitalisation efforts



Developed by:



Supported by:



In collaboration with:



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Mr Ng How Yue
Permanent Secretary
(Health Development),
Ministry of Health

The Ministry of Health's Healthier SG strategy will allow us to better support an ageing population and improve population health outcomes. To strengthen support for seniors in the community, we will need to raise the capabilities of our health and social ecosystems. Digitalisation of the Community Care sector will be a key pillar in this effort.

I encourage all Community Care Organisations to invest in digital solutions that can improve the quality of care for seniors, and also enhance their own productivity and efficiency. The Community Care Digital Transformation Plan is meant to ensure that all our partners have access to baseline capabilities, and that you are adequately supported to take the next step in successfully integrating technology into your current work processes. As always, the Agency for Integrated Care will support you in facilitating this transformation journey.

I look forward to seeing how going digital can help to facilitate a transformative change in the quality and delivery of our aged care services!

“Digitalisation of the Community Care sector will be a key pillar in our effort to raise the capabilities of our health and social ecosystems.”



Dr Gerard Ee
Chairman, Agency
for Integrated Care

“It will take every organisation in the Community Care sector to support the strategies laid out in the Community Care Digital Transformation Plan. Let us all join this journey as a community, to collectively build upon each other’s experience and success to deliver even better care to seniors.”

Over the past decade, the Community Care sector has grown tremendously and contributed significantly to Singapore. The priorities have been on increasing capacity, improving capabilities, and enhancing service quality to meet client needs and aspirations. Particularly over the COVID-19 period, the sector has done very well in overcoming the challenges of the pandemic, while continuing to safeguard the health and well-being of its clients and staff.

COVID-19 has also clearly highlighted the need for the sector to transform through digitalisation. It is timely for us to focus on helping Community Care Organisations (CCOs) to leverage fully on digitalisation and transform themselves, so that they can deliver even better care, and improve productivity and efficiency.

To tackle these, the Agency for Integrated Care (AIC) and the Ministry of Health (MOH) are launching the Community Care Digital Transformation Plan (CCDTP), which provides a structured and targeted approach to support CCOs in their digitalisation journey. Our partners can look forward to the roadmap and enabler programmes. These will guide their decision making in adopting proven technology, building digital capabilities, and leveraging on resources to enhance their organisational effectiveness and delivery of services. The extent of adoption will be indicative of how the Community Care sector is embracing digitalisation as it works and delivers care to its clients.

The CCDTP provides a clear and robust framework for CCOs to improve care and support to clients and their caregivers; increase productivity and job satisfaction by leveraging on technology; and build a digitally-driven sector that delivers timely, affordable and quality care to Singaporeans. Collectively, the CCDTP seeks to guide CCOs through their digital transformation, and for the CCOs to emerge as more effective organisations which deliver even better client-centric outcomes. It also supports their transformation journey through consultancy services, training and development programmes, and support from AIC.

While AIC and MOH have taken the first step in putting together this CCDTP for the sector, it will take every organisation in the Community Care sector to support the strategies laid out. I invite all of you to join this journey as a community, to collectively build upon each other’s experience and success, so that we can continue to learn and refine the CCDTP.

It does take all of us in the Community Care sector to help and empower Singaporeans to live well and age gracefully in place. We will continue to play this critical role for Singapore moving forward.

With this, the AIC team and I have the pleasure and honour to present to you, the CCDTP. I thank everyone who contributed to make this roadmap possible for the Community Care sector.

Foreword by Co-chairs of the Community Care Technology Council



Dr Loh Yik Hin
CEO, St Andrew's
Community Hospital



Ms Chan Su Yee
CEO, NTUC Health



Mr Tan Kwang Cheak
CEO, Agency for
Integrated Care

COVID-19 is undoubtedly one of the greatest national challenges that Singapore has faced. All of us in the Community Care sector have worked extremely hard and stayed strong collectively over the past two years as we came together to safeguard the health and well-being of our residents, clients and staff.

The last two years have also clearly shone a spotlight on the need to change the way we work as we adopted new ways of providing care. This is the clarion call to all of us in the sector.

The Community Care sector is a critical part of our health and social system. Together, we consist of more than 250 providers, providing more than 17,000 residential care beds, 8,100 centre-based places and 10,000 home care places. We continue to enable and empower Singaporeans to live and age well.

The community's needs have also evolved. With the Ministry of Health highlighting chronic illnesses as a larger overall threat than COVID-19, the Community Care sector will play a key role in supporting 'Healthier SG' – the national effort to keep our population healthy – and provide appropriate care to those with existing needs. This is even as we continue to deal with the challenge of Singapore's increasing age dependency ratio, as well as changing resident expectations and needs.

The core of our mission does not change. We will need to care for and meet the needs of Singaporeans, while ensuring that our care is safe and excellent. But we will need to leverage on innovation, digitalisation and technology to drive this mission more strongly, effectively and efficiently moving forward, all while staying true to our client-centric approach.

This is where the Community Care Digital Transformation Plan plays a key role. With its framework, structure, and resources, we as the Community Care sector can make that vital leap and transform ourselves to provide even better support and care to our clients.

We would like to encourage our partners in the Community Care sector to embark on their digitalisation journey by adopting the Community Care Digital Transformation Plan and transforming themselves for the future and for Singaporeans.

“ Digital transformation in the Community Care sector is important as leveraging on technology to augment our care models will open up new ways of providing even better care to seniors and clients in the community. ”

2

Executive Summary

The Community Care sector plays a key role in supporting Singaporeans to age well. It comprises more than 250 Community Care Organisations (CCOs) providing services in residential care, centre-based care and home-based care. The Community Care sector is a key pillar in the healthcare ecosystem and is supported by more than 18,000 community care professionals.

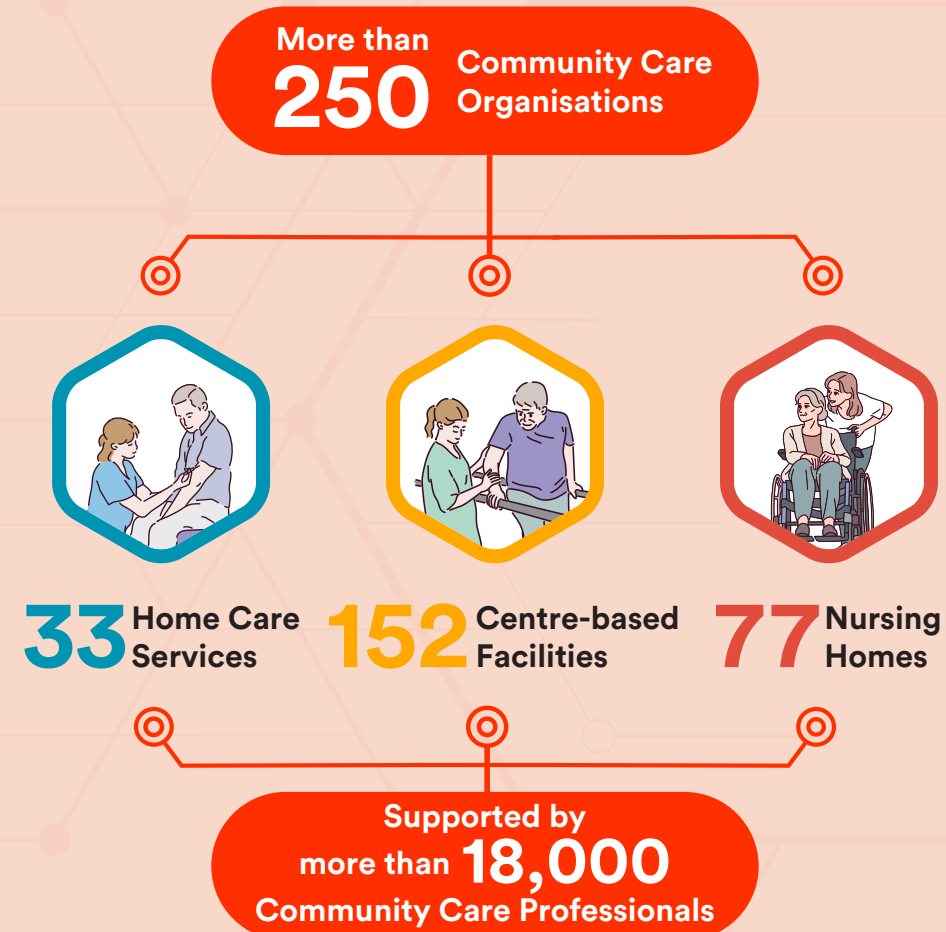
With Singapore's rapidly aging population, evolving client needs and rising care expectations, coupled with slowing workforce growth, the sector is faced with numerous challenges as it expands to meet the care needs of Singaporeans. Being a traditionally high-touch sector, the present approach of expansion through hiring of manpower will not be sustainable. Hence, it is imperative to relook at how quality and effective care can be delivered with leaner resources.

Digital transformation offers the Community Care sector an opportunity to overcome these challenges holistically. Digitalisation is key to uplift the sector, emphasising the importance of process optimisation, productivity and acknowledging that data is the new currency. The introduction of the sector-wide digitalisation plan serves as a guide for community care providers as they transform and accelerate their digitalisation journeys.

Accompanying the plan would be a suite of support such as consultancy support, the curation of technology listings for the CCOs to choose from, training for the workforce as well as funding support in this digitalisation journey.

Our Community Care Sector

The Community Care sector plays a key role in supporting Singaporeans to age well.

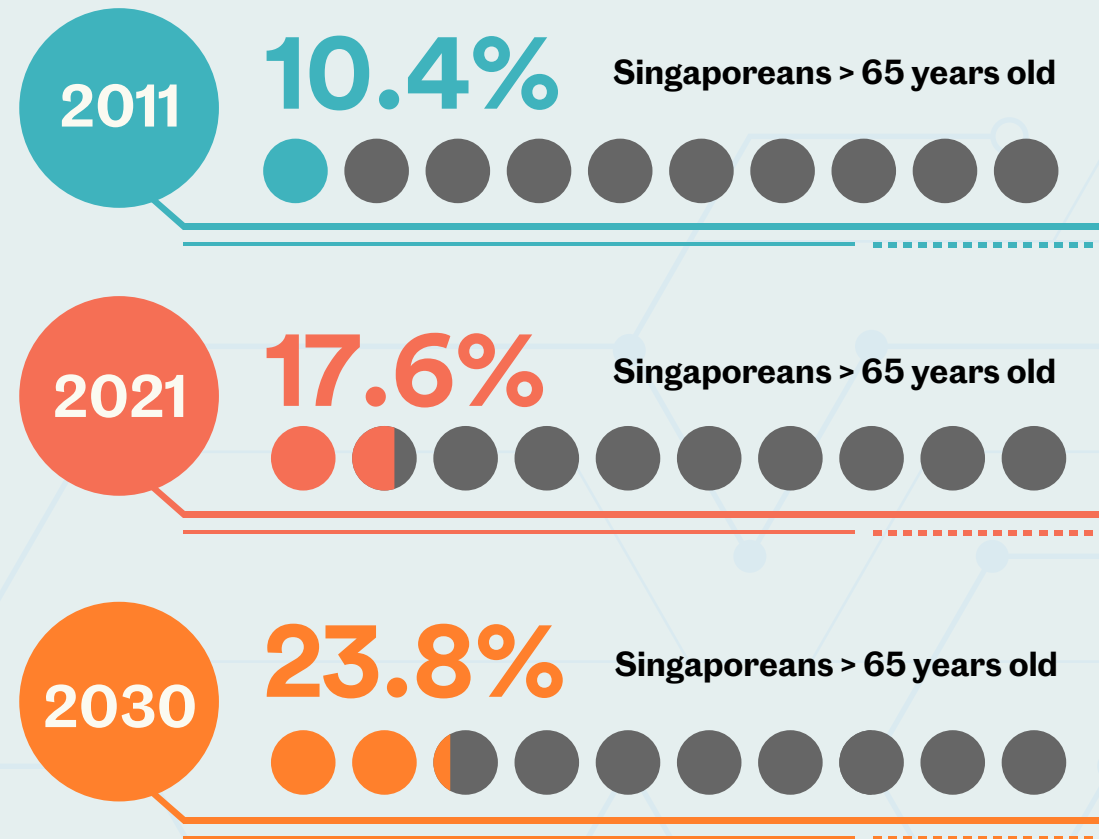


SOURCE: 2019 Healthcare Facilities
<https://www.moh.gov.sg/resources-statistics/singapore-health-facts/health-facilities>

3.1

Aligning Priorities of the Community Care Sector with Evolving Trends

Living Longer With Higher Aspirations



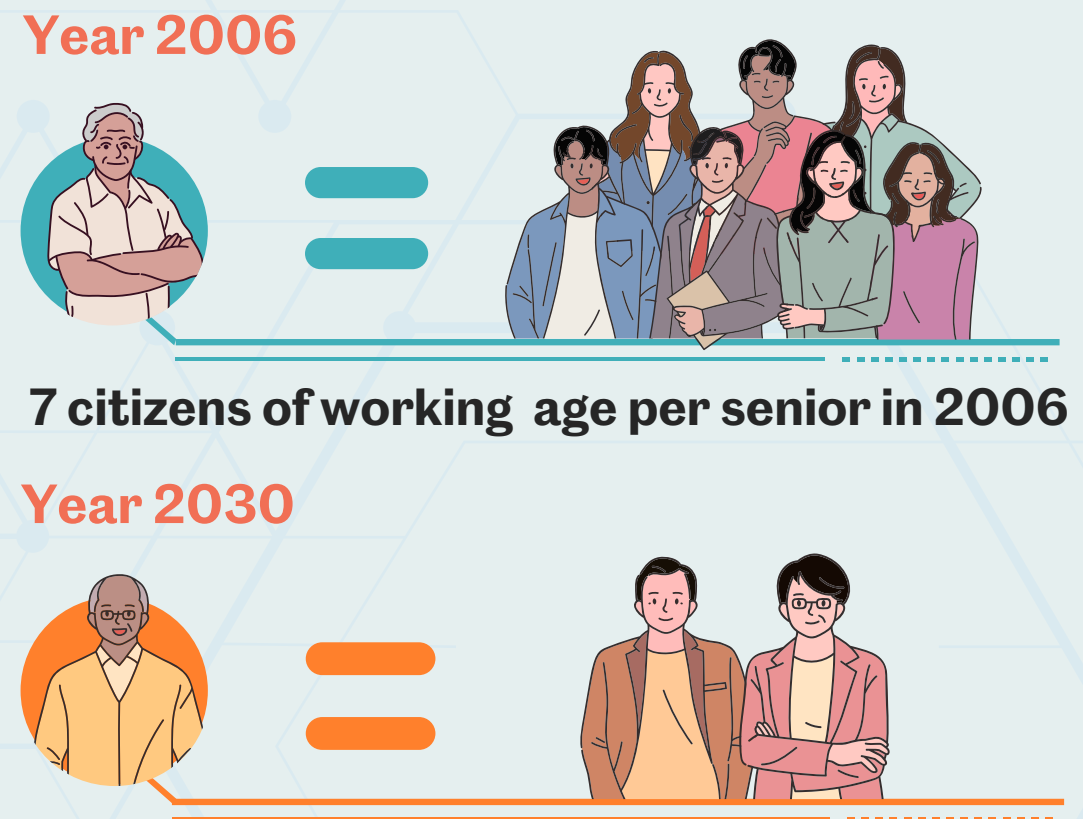
Source: Department of Statistics

1 in 4 Singaporeans to be > 65 years old in 2030

- More likely to be hospitalised and have longer stays
- Desire to live autonomously and be financially independent

Growing and increasingly complex needs to be met

Growing Strong Local Core Amidst Shrinking Workforce



Source: Department of Statistics

2.3 citizens of working age per senior by 2030

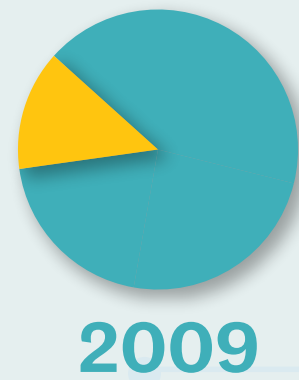
- Fewer working adults and lower fertility rate

Rising need to focus on productivity, digital advancement and manpower optimisation to ensure sustainability

3.1

Aligning Priorities of the Community Care Sector with Evolving Trends

Evolving Client Needs



20%
of seniors with
≥ 3 chronic
conditions.



37%
of seniors with
≥ 3 chronic
conditions.



Source: Duke-NUS Medical School's Centre For Ageing, Research and Education; Ministry of Health

More seniors with ≥ 3 chronic conditions

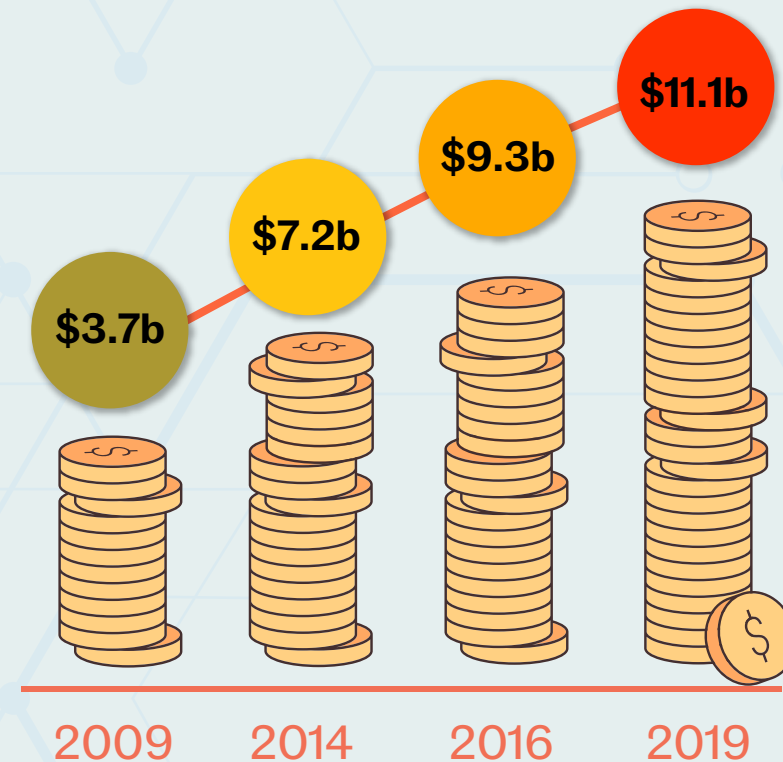
- More chronic and long-term care needs
- Greater need for social support



Meeting changing needs in the community based on a client-centric approach

Providing Sustainable Healthcare Services

Healthcare Expenditure of the Singapore Government



Source: Ministry of Health

\$11.1b spent in FY19 compared to \$3.7b in FY09

- Expenditure for the Long-Term Care (LTC) sector has increased by 20% per annum as compared to 11% per annum for the entire healthcare sector

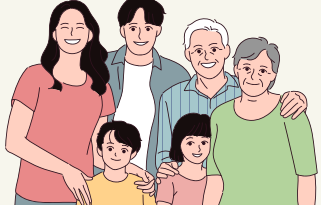


Ensuring seniors are able to continue affording their preferred care options in a sustainable manner

3.2


Community Care Sector Goals

With evolving trends, a growing sector and being aligned with national priorities (as highlighted in section 3.3), it was important to develop a holistic approach for the Sector to work in concert and uplift their capabilities. The Agency for Integrated Care, together with the Ministry of Health and the Sector, co-developed **Sector Goals** and a suite of **enablement roadmaps** for the Sector to **work cohesively** towards addressing the evolving trends and challenges, as well as to meet clients' needs and aspirations.



Client Goals
What do our Clients want?

- C1** Simplifying help-seeking journey
- C2** Enabling self-determination and decision-making
- C3** Beyond needs to dignity & strengths
- C4** Harnessing the power of family and community
- C5** Expanding financing options



Care System Goals
How are we doing as a Sector?

- S1** People are cared for longer in the community, by delaying institutionalisation and reducing unnecessary hospital use
- S2** Resilient and prepared sector able to meet demands of peacetime and crisis
- S3** Timely access to affordable and appropriate services
- S4** Holistic health and social care, with seamless care linkages between services, resources and settings in the community



Provider Goals
How can our Providers develop?

- P1** Develop, deliver and improve quality services to meet client needs and expectations, and the supporting structures and systems
- P2** Build resilience in corporate governance and risk management
- P3** Build a productive, skilled and sustainable workforce, with a strong local core and good leadership

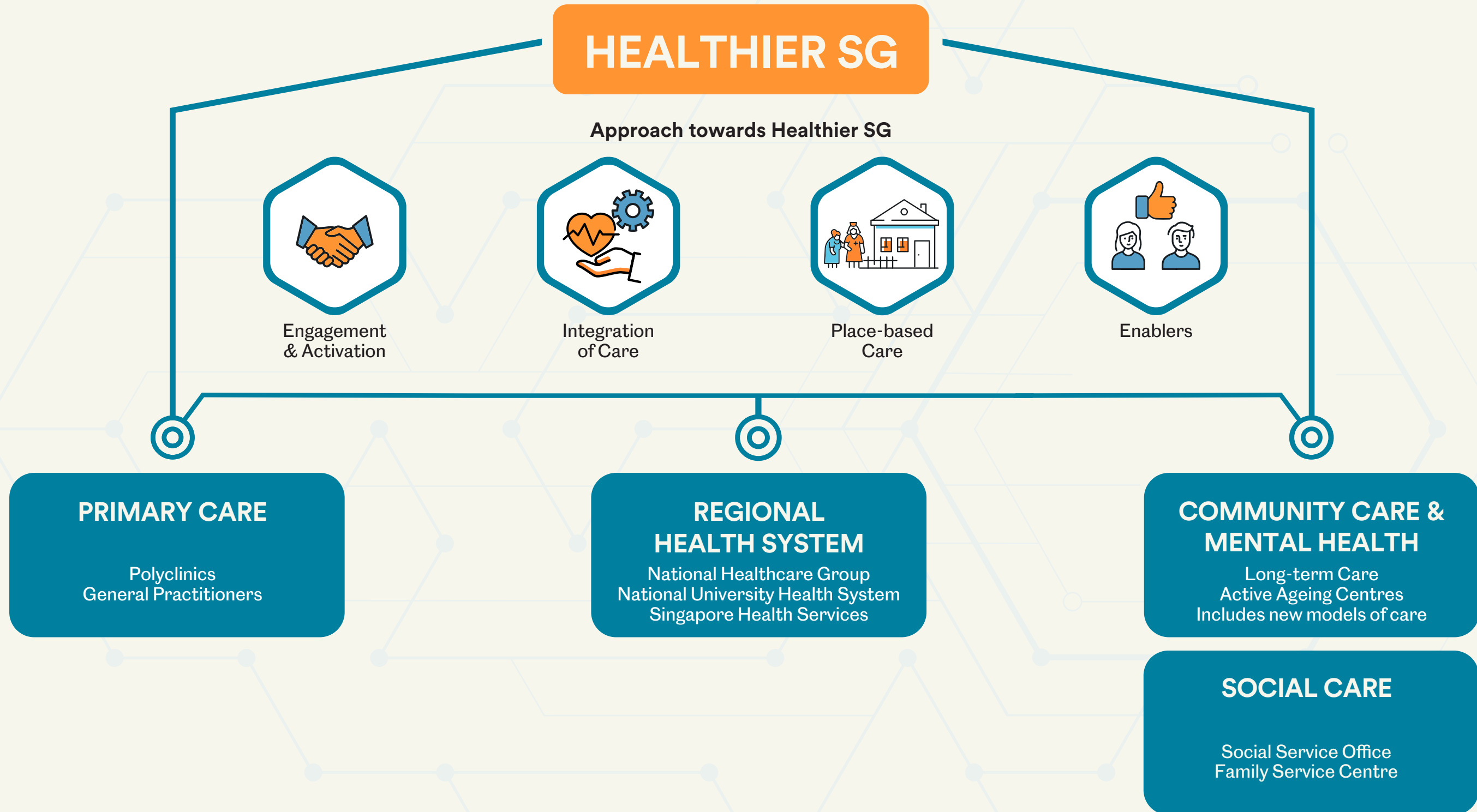
Overall Sector Enablement Strategy

- Digitalisation
- Productivity
- Manpower
- Quality
- Resilience

3.3

Our Community Care Sector Supports MOH's Strategic Shifts and 'Healthier SG' Focus

The approach towards 'Healthier SG' serves as a bridge connecting the Ministry of Health to community care partners, regional health systems, primary care providers and social care partners. We recognise the importance of further developing areas of work within these pillars, on top of service development and capability building.



4.1

Strategic Focus and Outcomes Across The Digitalisation Journey

Digital Transformation is an evolving journey from digitisation to digitalisation and ultimately digital transformation. It is important that we embark on this journey to pave the way to better deliver our services through improved client service experiences, enhanced organisation operational excellence, as well as well-connected ecosystems and partnerships.



Client Service Experiences

Transform the client service experience

Services that are:

- Simple, intuitive and easy to use
- Client-centric
- Accessible from multiple digital channels
- Predictive of client's needs



BETTER CARE



Organisation Operational Excellence

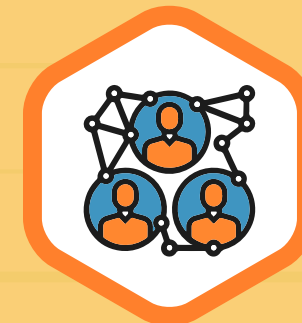
Transform how we work

Engagement and collaboration that is:

- Efficient on manpower, time and cost
- Automated where possible, to cut out unnecessary roles and processes
- Resilient with strong corporate governance and risk management
- Empowered by a sustainable workforce that is productive, updated and skilful



STRONGER ORGANISATIONS



Ecosystem Connectedness & Partnerships

Transform the way we connect

Connectivity that is:

- Synergised for a seamless client experience
- Integrated across different organisations and government agencies for greater value creation
- Informed by a single source of truth for optimal decision making



INTEGRATED ECOSYSTEM

4.2

Community Care Digital Transformation Plan (CCDTP)

Community Care Organisations need to uplift and accelerate their digitalisation journey through a structured framework.

2 BUSINESS PROCESS RE-ENGINEERING

Improve, design and engineer processes, operations and operating models, potentially moving towards zero-ops where unnecessary processes are removed or automated.

1 DIGITALISATION JOURNEY MAP

Assess the digitalisation state and set a clear vision and roadmap based on ambition and appetite.

3 TECHNOLOGY ADOPTION

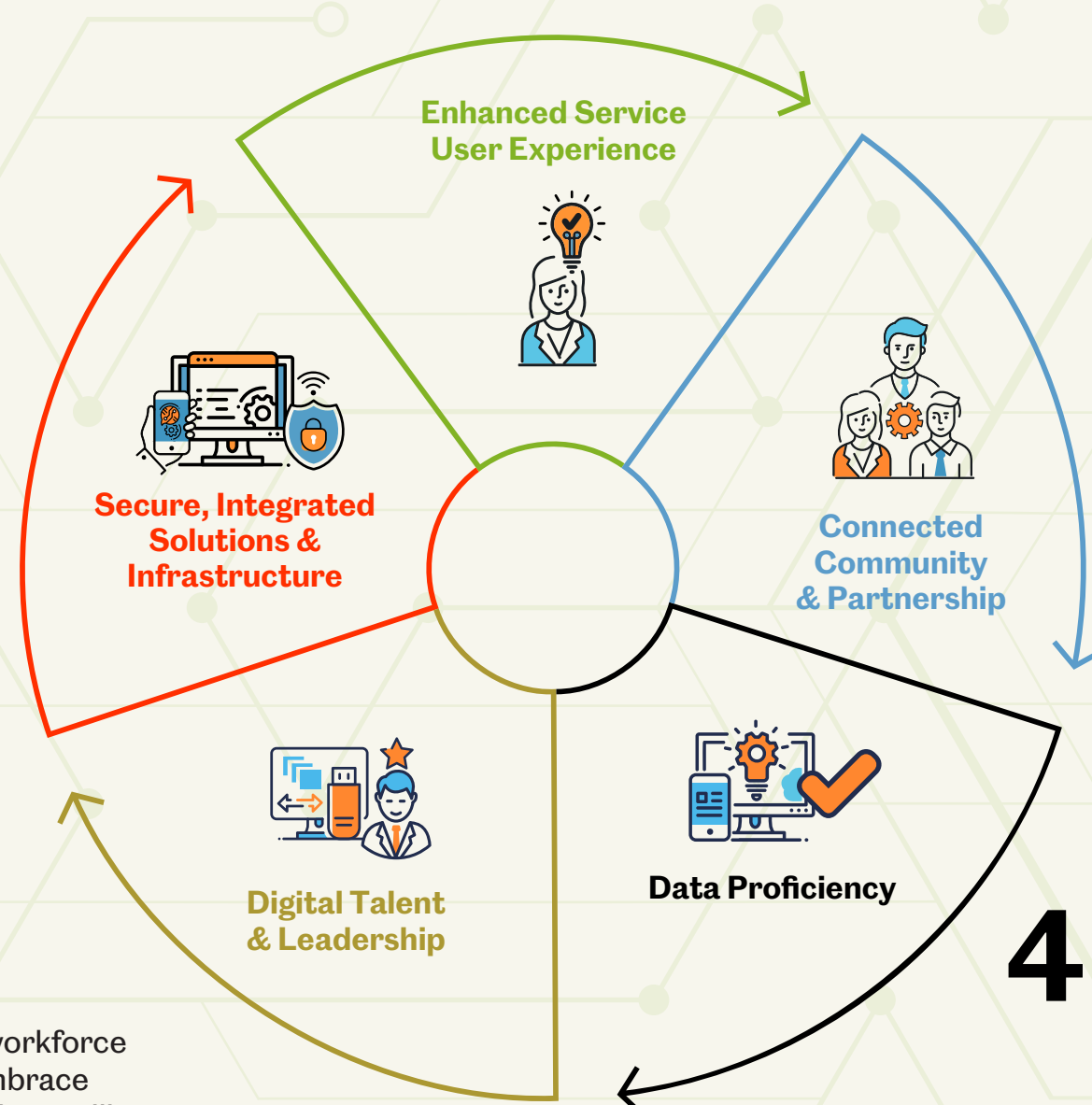
Adopt interoperable technology solutions, robust cybersecurity and data security/ protection to enable client-centric digital service delivery, and improve the efficiency and effectiveness of work processes.

4 DATA DRIVEN

Being data aware, data informed, data proficient, data secured and data protected through “client/ business backwards” approach.

5 CAPABILITY UPLIFT

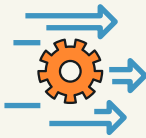




Foster a digital DNA with a workforce that has the know-how to embrace digitalisation with values such as agility, boldness, innovation and collaboration.



4.3

Community Care Digitalisation Roadmap

The Sector Digitalisation Roadmap serves as a guide to Community Care Organisations as they embark on their digitalisation journey and traverse through the three levels of digitalisation developments.

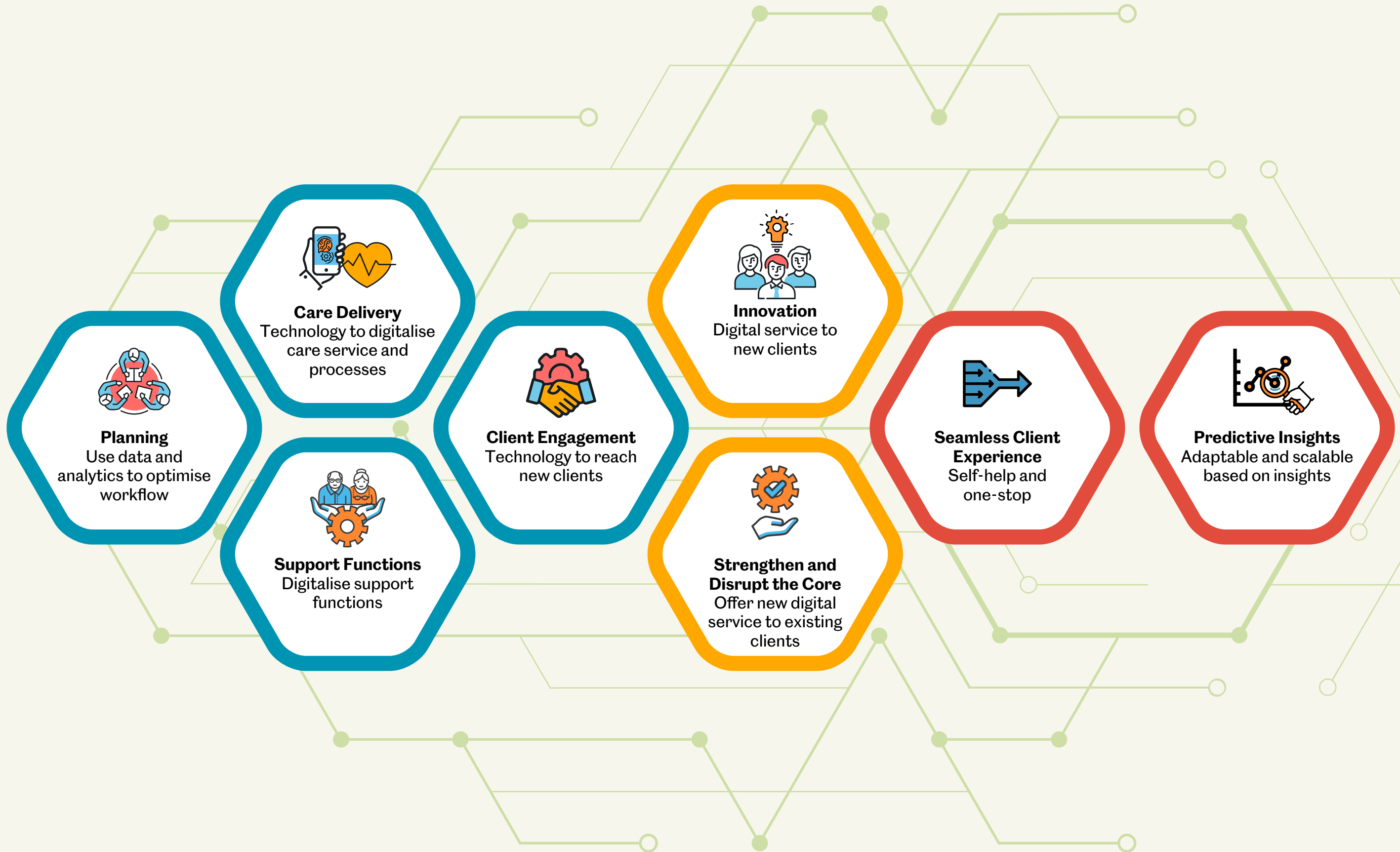
	DIGITISATION	DIGITALISATION	
	LEVEL 1 Uplift Foundation	LEVEL 2 Accelerate Digitalisation	LEVEL 3 Drive Transformation
PROCESS 	<ul style="list-style-type: none"> ✓ Baseline: Review/Streamline processes and implement foundational integration-ready solutions ✓ Capture essential data on service users and service delivery within each process and relevant data within the organisation ✓ Learn from peers and subject-matter experts in the healthcare and social service community ✓ Collaborate with Corporates and Institutes of Higher Learning (IHLs) through CSR-related internships and digitalisation projects 	<ul style="list-style-type: none"> ✓ Enhance processes and implement advanced service delivery solutions ✓ Enable a holistic view of service users within the organisation ✓ Derive insights through analysis of service user data to enhance the service user journey ✓ Develop mid to long term ecosystem partnerships with commitment from partners to devote digitalisation resources to Community Care Organisations for a specific period of time 	<ul style="list-style-type: none"> ✓ Adopt business process monitoring solutions to uncover process improvement opportunities ✓ Apply human-centred design methodology to improve service to users ✓ Collaborate with other Community Care Organisations and ecosystem partners to deliver integrated services ✓ Connect with other Community Care Organisations with similar use cases and needs to explore and develop new technology solutions
TECHNOLOGY 	<ul style="list-style-type: none"> ✓ Only manual control by humans ✓ Fundamental standalone solutions that are business as usual ✓ Baseline: Technology <ul style="list-style-type: none"> • Network connectivity • Case management system • Tele-consult • Digital payment • Finance and HR System • End user computing 	<ul style="list-style-type: none"> ✓ Semi-automated requiring supervision, especially in the control of processes ✓ Intermediate solutions requiring internal systems integration for better care delivery 	<ul style="list-style-type: none"> ✓ Fully automated or autonomous with alert feedback and dynamic optimisation ✓ Advanced solutions to enable novel care models and corporate functions; and seamless client experience
CYBERSECURITY 	<ul style="list-style-type: none"> ✓ Baseline: MOH Cybersecurity Essentials minimum hygiene requirement ✓ Become aware, identify, and plan <ul style="list-style-type: none"> • Develop policies and processes • Identify trusted cybersecurity provider/vendor • Develop an IT incident response and recovery plan 	<ul style="list-style-type: none"> ✓ Strengthen and expand <ul style="list-style-type: none"> • Adhere to cybersecurity and data protection baseline requirements • Establish checklists and advisory panel • Test the business continuity plan, incident response and disaster recovery plan 	<ul style="list-style-type: none"> ✓ Standards and certification <ul style="list-style-type: none"> • Conduct regular cybersecurity risk, IT risk and data protection compliance assessments • Establish third-party management programmes • Conduct regular exercises for the business continuity plan, incident response and disaster recovery plan
DATA PROFICIENCY 	<ul style="list-style-type: none"> ✓ Baseline: Data protection management ✓ Business risk management ✓ Data breach incident management ✓ Establish data management policies and procedures ✓ Digitise data and centralise data repository 	<ul style="list-style-type: none"> ✓ Develop a data exploitation plan ✓ Utilise data discovery / visualisation tools to derive insights; design-thinking practice 	<ul style="list-style-type: none"> ✓ Support service integration and referrals by sharing and fusing data with other Community Care Organisations and ecosystem partners ✓ Utilise advanced analytics to enhance service delivery and service planning
DIGITAL SKILLS AND TRAINING 	<ul style="list-style-type: none"> ✓ Appoint a digital lead and form a digital workplace workgroup and board sub-committee ✓ Develop a digital-first culture strategy plan ✓ Impart workforce digital skills to leaders and all staff covering processes, technology, cybersecurity and data protection 	<ul style="list-style-type: none"> ✓ Impart workforce digital skills to digitalisation specialists covering processes, technology, cybersecurity and data protection 	<ul style="list-style-type: none"> ✓ Impart workforce digital skills to digitalisation specialists covering processes, technology, cybersecurity and data protection

Note: Baseline refers to the foundation to enable further digitalisation within the organisation and sector. These alone would provide better facilities for staff and clients.

4.4

The Benefits of Digitalisation Are Far Reaching

Digital transformation creates a framework that can funnel services and data into actionable insights that can revolutionise many aspects of the role, functions and performance of a Community Care Organisation.



4.4

The Benefits of Digitalisation Are Far Reaching

Find out how some Community Care Organisations are utilising technology to optimise processes whilst enhancing care for their clients. Scan the QR codes to watch a short case study video.

HOME CARE



i-Boleh at Lions Befrienders

A personalised tablet which acts as a wellness companion that monitors the well-being of seniors and keeps them engaged in their homes



RESIDENTIAL CARE



Smart Geofencing System at Ren Ci @ Ang Mo Kio

Giving residents the freedom to move around the facility without compromising on their safety



CENTRE-BASED CARE



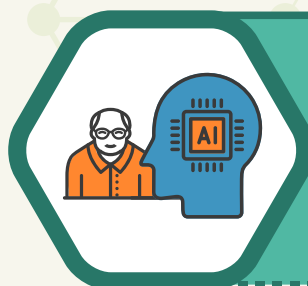
Immersive Room Experience at NTUC Health

Using Virtual Reality to let seniors safely "visit" attractions and participate in activities



Autonomous Mobile Robot at Ren Ci @ Ang Mo Kio

An efficient way to deliver meals and supplies to residents



Artificial Intelligence Screening at Lions Befrienders

Using Artificial Intelligence (AI) to facilitate the screening of seniors for negative emotions and mental health concerns

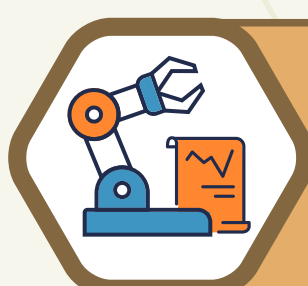


CARES4WOUNDS at Ren Ci @ Ang Mo Kio

An AI-enabled mobile app for contactless wound assessment

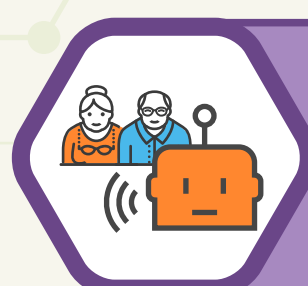


ORGANISATIONAL-WIDE PRODUCTIVITY



Robotic Process Automation at NTUC Health

Automating manual and repetitive tasks to enable staff to perform higher value tasks



Dexie, the Humanoid Robot at Bright Hill Evergreen Home

A robot that can converse with and facilitate activities for residents



5.1

One-Stop Digital Transformation Centre

Community Care Organisations can look forward to a suite of resources to navigate their digitalisation journey. Scan the QR code to find out more.



Support for the Development of:

Digital Operating Model and Data

Consultancy on advisory and project management



Digital Strategy (Digitalisation Journey Map)



Business Process



Data Protection



Change Management



Technology and Cybersecurity Sourcing and Recommendation



Digital Technology and Systems

Technology directory and grants



Pre-approved and Green-lane Solutions



Pilot Solutions



Proof of Concept / Proof of Value Solutions



MOH Cybersecurity Essentials



Digital Talent, Knowledge and Skills

Digitalisation skills and competency framework



Digital Leadership Programme



Digital Training for Middle Management



Digital Training for Workforce



Standards and Guides



Cybersecurity



Data Protection



Resources that are funded

5.2

Start Your Digitalisation Journey Today

Community Care Organisations will be supported at every stage of their digitalisation journey, **through three simple steps:**

1



Is my organisation digital-ready?

Find out if your organisation is digital-ready by completing the Digitalisation Self-Assessment Checklist that is available on the Community Care Digitalisation Portal. Scan this QR code to get started now.



2



How to get my organisation started?

Develop your own Digitalisation Roadmap to transform in three Focus Areas, supported by the Community Care Digitalisation Roadmap.

3



Where can my organisation get help?

Make an appointment with your AIC Account Manager. Scan the QR code here for details and to find out more about the tools and resources on the Community Care Digitalisation Portal to help in digitalising your organisation.





**The Heart
of Care**