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The Coordination Gap: How Penang's Elderly Navigate a Fragmented Care System

*By **Dr. Tay Lyn Xuan** (Visiting Researcher)*[1]

Executive Summary

- **The Problem: A System-Demographic Mismatch.** Penang is officially an "ageing society", with 7.7% of its population aged 65 and over. Malaysia as a whole is quickly moving to become an "Ageing Nation" by 2029. Despite being recognized as an Age-Friendly City (AFC) by the World Health Organization (WHO), Penang's key service systems remain disconnected. Health services, managed by the Federal government (MOH), and social care, managed by the State (JKM), operate in silos. This creates a "coordination gap," which was a situation confirmed by an AFC stakeholder survey. The survey found a major disconnect where the service providers believe coordination exists while the community is "mostly unaware" of available services.
- **The Analysis: The Cost of Fragmentation.** While often underestimated, this structural gap frequently leaves elderly patients and their families to act as their own care coordinators. This separation is a significant cause of costly, preventable hospital readmissions and reduced quality of life. Furthermore, this inefficiency places a burden on family caregivers and strains already limited healthcare resources. The current AFC framework represents a great vehicle for change, but a stronger mechanism is needed for proper integration. Its health-related actions (Domain 8) are treated as a separate project rather than a core approach to structurally connect existing Federal and State services.
- **The Solution: A Three-Part Roadmap.** This paper proposes a three-part roadmap to build the missing connection:
  i. **Establish a high-level, state-led Penang Integrated Care Coordinating Body (PICCB)**, designed as a strategic Federal-State partnership to create unified care pathways, and to align leadership.
  ii. **Pilot a place-based "Integrated Care District" Model** centred at the local Klinik Kesihatan (health clinic) and led by dedicated "Care Coordinators" to connect existing and separate services.
  iii. **Invest in "Enabling Infrastructure,"** specifically a shared digital care record system to overcome the critical 7% Clinical Information System adoption gap, targeted workforce training and empowerment of enhanced AI in managing information from different sources.

[1] Dr. Tay Lyn Xuan is currently a Postdoctoral Research Fellow at the Vanke School of Public Health, Tsinghua University, Beijing.

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THE PARADOX OF PROGRESS: PENANG'S FRAGMENTATION PROBLEM

The World Health Organisation has officially designated the state as a member in the Age-Friendly City (AFC) global network (see Appendix 1 & 2). [1][2] This is recognition of the existence in the state of strong political will and a solid framework for meeting the needs of an ageing population. However, alongside these developments lies a structural challenge: highly dependent senior citizens more often than not face a disjointed continuum of care. The services designed to support them are separated by different levels of government, technology, and information; this creates a "coordination gap" holding consequential risks to patient health integration and the state's long-term finances.

The Demographic Collision Course

Penang is not just ageing; the rate of ageing is greater compared to the rest of the country. This places extra pressure on the existing healthcare system.

- With 7.7% of its population aged 65 and over, it has already crossed the 7% line to be considered an "ageing society". [3]
- Projections show that by 2040, Penang will have the largest proportion of residents aged 60 and above in Malaysia, at 26.2%. [4]
- Most critically, Penang is projected to become the second state in Malaysia (after Perak) to become an "Ageing Nation" (defined as 15% of the population being 60 or over) by the year 2029. [5]

This 2029 projection creates a crucial timeframe for policy action. It means that the Penang state government's goal to become an "age-friendly state by 2028" is not just an aspiration; it is a strategic necessity. [6] This means that the current healthcare delivery system will require structural adaptations to meet the long-term continuous care needs of an aging population. [7]

Acute hospitals, primary care clinics, rehabilitation centres, nursing homes, and home care services in Malaysia operate as separate entities with different funding mechanisms, information systems, and care philosophies. [8][9] For instance, when a 70-year-old patient is discharged from a federal-operated hospital after a critical medical event (like a stroke), the hospital's care is considered completed after issuing a follow-up appointment at department clinics. [9][10] The primary caregiver, who is usually a family member, is given a physical discharge summary, discharge medications and follow-up instructions. [11] At this point, the patient falls into a systemic gap defined by three distinct problems.

[1] Dr. Tay Lyn Xuan is currently a Postdoctoral Research Fellow at the Vanke School of Public Health, Tsinghua University, Beijing.

The Three Chasms of Coordination

1. The Digital Chasm: The hospital's information system is currently not integrated to Klinik Kesihatan (health clinic) primary care centres. [12] Largely reliant on physical, handwritten medical records, the public primary health care network is still lagging in digitalisation, a challenge that is further compounded by an uneven infrastructure development. As of 2019, only 24% of public hospitals and 7% of all public health clinics in Malaysia were equipped with a Clinical Information System (CIS). [13]

This single statistic shows the physical reality of the coordination gap. It leaves the patient's family to become an information hub, making the transfer of physical medical records from the specialist hospital to the local clinic their direct responsibility. At every step, they are required to do due diligence in visualising complex medical histories, which carries risks without sufficient health literacy. While the Ministry of Health (MOH) has pilot projects like HIS@KKM, these focus on MOH-internal processes and do not yet bridge the digital divide to the official departments of social care services. [14]

2. The Jurisdictional Chasm: The digital gap is exacerbated by jurisdictional boundaries, resulting in both systems operating in parallel. In addition, there is currently no formal integration process for the Federal hospitals (MOH) to notify the State-run social care system, the Jabatan Kebajikan Masyarakat (JKM), of a patient's non-medical needs.

While the Ministry of Health (MOH) is responsible for health services under policies like the National Health Policy for Older Persons 2011 and the Plan of Action for Older Persons Health Services revision 2017/2018 [15], the State government is responsible for social welfare, providing institutional care for the poor (Rumah Seri Kenangan) and volunteer-based Home Help Services. [16]

Also, while the public healthcare institutions manages healthcare-related needs, the existing social system is not designed to handle the complexity of social-health referral and continuity of care.[16] This fragmentation creates a substantial gap for patients who may not qualify for poverty assistance but still need essential social support (such as caregiving aid or post-discharge monitoring) to avoid compromising the household's financial stability. Furthermore, even when families successfully navigate to JKM, they face strict eligibility criteria and long review durations. For instance, only 151,833 individuals, representing the 15% B40 segment, meet the stringent eligibility of receiving national support, including admission to public long-term care institutions (Rumah Seri Kenangan and Rumah Ehsan), where the facilities are already limited.[17]

3. The Perception Chasm: The consequence of the digital and jurisdictional gaps is a "last mile" disconnect. A stakeholder outcome survey reported in an AFC policy brief [18] revealed widely differing views between service providers and the public. For instance, under policy area 3 (housing and infrastructure) and policy area 5 (social participation):

- **Providers** state that services are "Mostly available."
- **The Community** state that they are "Mostly unaware of available government programmes".

This survey finding reveals that the challenge is more than just a lack of services, but that low public awareness raises important issues regarding inter-level navigation at the community level. Even when social support is available, system fragmentation defaults the role of the care coordinator back to the family, increasing the strain to balance between work and care responsibilities.[19][20] This fragmentation results in several pressing concerns:

- patients face barriers in navigating the complex systems;
- information rarely transfers fully;
- preventive care is deprioritised in favour of more acute treatments; and
- resources are concentrated in hospitals while community-based services remain underdeveloped.

Quantifying the Consequences

This structural disconnect has direct, measurable, and costly impacts on care delivery and the sustainability of public resources.

- **Systemic Cost (Preventable Readmissions):** Enhancing the coordination of post-discharge follow-up is an important step to take towards reducing costly and preventable hospitalizations. Malaysian national data shows that **11-13%** of stroke patients are readmitted within 28 days [21] and **18%** of heart failure patients are readmitted within 30 days, some of which are preventable.[22][23][25]
- **Humanistic Cost (Caregiver Burden):** These systemic gaps then act to shift the burden of care onto the family. A Malaysian study on the societal cost of Alzheimer's disease found it to be **USD 8,618.83** per patient annually. A staggering 77.7% of this cost was attributed to informal care constituting the unpaid time, lost productivity, and burnout of the family.[24]

Consequently, the state's healthcare system then absorbs the cost of this, first through a revolving door of high-cost hospital stays, and second by shifting a substantial and often hidden burden onto families. This is not an isolated issue; it is the outcome of the current system's operating framework.

Table 1: The Fragmentation Matrix: A Patient's Post-Discharge Journey

Patient Stage	Federal (MOH) Action	State (JKM) Action	The "Gap" (Patient/Family Experience)
Discharge	Hospital (MOH) discharges patient with paper summary. [11] Acute episode is "complete"	JKM is not notified. No protocol exists for social-health referral. [15]	**Jurisdictional & Digital Chasm:** No formal handoff. Patient's social needs (e.g., lives alone, caregiver burnout) are unaddressed.
Primary Care	Patient is taken to Klinik Kesihatan (MOH).	NA	**Digital Chasm:** Clinic has no digital record due to 7% CIS adoption. [13] Family must act as human information hub, re-explaining history.
Social Support	Resources available on state level	Family must discover JKM or NGOs on their own.	**Perception Chasm:** Family is "mostly unaware" of available services.[18] JKM eligibility is strict.
Outcome	Patient's condition may worsen due to uncoordinated care. Patient is readmitted to Federal Hospital.	N/A	**System Failure:** A costly, preventable readmission (11-18%) occurs. The cycle of separation repeats.

CONTEXT AND PRECEDENTS: ACTIONABLE INTERNATIONAL MODELS

Addressing the challenge does not require inventing a new system from scratch, but rather adapting proven, practical principles from international models. By putting eyes on existing policies and care models from other countries, a blueprint for building the "engine" of integration that will greatly strengthen Penang's AFC framework is possible to achieve.

What the AFC Gets Right (The Vehicle)

Penang's existing AFC initiative has established a strong, multilevel governance structure that is critical for success [27]:

- **Project Implementer:** Majlis Bandaraya Pulau Pinang (MBPP)
- **Project Manager:** Penang Women's Development Corporation (PWDC)
- **Project Consultant:** Malaysian Healthy Ageing Society (MHAS)
- This three-way partnership provides the vision, the political will, and, most importantly, a neutral platform.[28] that is already supporting the necessary high-level dialogues between key State EXCO functions (such as Health and Social Development) and Federal officials (such as the State Health Director).[29]

The Critical Gap (The Missing Engine)

The AFC framework is the vehicle, but integrated care pathway is the engine. The framework's primary gap is that its health-related component, Domain 8 (Community & Health Services), is treated as one of eight separate projects (alongside others like housing, transport, and social

participation)[28]. While its current actions, such as community health campaigns or mobile apps, are valuable, positive interventions at the community level and long-term resilience can be better achieved by aligning State (JKM) and Fed-ral (MOH) health systems to create an integrated network of care for Penang's aging population. [18][28] The AFC's potential to support senior citizens in need, for instance, those requiring basic activity assistance or at risk of hospitalization, can only be fully realised once this structural gap is bridged.

Actionable Principles from International Models

The following international models provide proven, practical principles for building our own integration engine.

Table 2: Comparative Analysis of International Integrated Care Models

Country (Model)	Model Type	Key Actors	Core Mechanism	Actionable Principle for Penang
Singapore (AIC)[30]	National Integrator	MOH, Agency for Integrated Care (AIC), Community Partners	A single, independent corporate body coordinates across both health and social domains.[30][31]	**The PICCB Function:** A single coordinating body is a viable solution for health-social integration.
United Kingdom (ICS)[32]	Statutory Partnership	NHS (Health), Local Councils (Social Care)	A legal requirement for health and social actors to form an "Integrated Care Partnership" (ICP) with a single, unified strategy. [33]	**The PICCB Governance:** A formal Federal-State partnership is the necessary governance structure.
Taiwan (LTC 2.0) [34]	Community Network	MOHW, Local Government, "ABC" Community Centers [35][37]	A hyper-local, three-tiered "ABC" network delivers integrated services close to home, enabling "aging in place".[36][37]	**The Pilot Model:** Usage of a place-based, hyper-local "Integrated Care District" to pilot the integration.
Australia (PHN)[38]	Regional Coordinator	Federal Government (Funder), State Hospitals, Primary Care	Federally-funded regional "integrators" bridge the gap between Federal primary care and State hospitals to reduce preventable admissions.[39]	**The Structural Model:** A coordinator body is a proven structure for bridging Federal/State divides.

THE WAY FORWARD: A ROADMAP FOR INTEGRATED CARE

The principle

This roadmap does not propose the creation of a new, expensive service delivery system. Instead, it uses the international principles from Table 2 to build the integration mechanism (the "engine") that the existing AFC framework (the "vehicle") currently needs. Hence, this is a proposed roadmap to connect existing assets and make the entire system function for high-needs seniors.

Establishing the "Penang Integrated Care Coordinating Body" (PICCB)

What it is: The PICCB would be a lean, high-level, state-led coordinating entity, not a new service provider. It is the "Penang version" of Singapore's AIC [31] and Australia's PHNs [38], designed to act as the central "integrator" for elderly care.

Governance (The UK Model): To be effective, the PICCB should be structured as a formal Federal-State partnership, adopting the principle of the UK's ICS model.[33] This structure will function as a collaborative framework bridging the gap between state and federal jurisdictions.

- **Leadership:** The AFC's potential for senior citizens in need (for instance, those requiring basic activity assistance or at risk of hospitalization) will be substantially achieved once this structural gap is bridged.
- **Members**: the board's membership should involve leadership from JKM, as well as the core AFC implementers (MBPP and PWDC).[27][40]

Function (The AIC/PHN Model): The PICCB would function as a small technical office with three core functions:

I. **Map Pathways:** Formally map unified care pathways for high-risk conditions (e.g., post-stroke, post-heart failure, neurological disorders or highly life-dependent conditions).
II. **Facilitate Integration:** Act as the central authority to facilitate the data-sharing [41] and inter-agency barriers [15] from multiple public and private channels via mutual agreements.
III. **Monitor Outcomes:** Be accountable for designing and monitoring system-level metrics, such as 30-day readmission rates, frequency of home help services per month, rate of successful application for long-term care institutions (RSK, RE), and caregiver satisfaction.

The PICCB would become the official implementation engine for Domain 8 of the Age-Friendly City plan [28], moving it from a "soft" campaign to a "hard" structural reform.

Pilot an "Integrated Care District" Model

What it is (The Taiwan/Australia Model): This roadmap proposes a place-based, hyper-local pilot, modelled on Taiwan's community networks [36] and the regional focus of Australia's PHNs.[38] This pilot would be centred around the catchment area of a single Klinik Kesihatan.

The Key Role: The "Care Coordinator": This role provides the essential coordination needed to bridge current structural gaps.

- **Role:** A new dedicated position (e.g., a specially-trained nurse or social worker) based at the Klinik Kesihatan.
- **Function:** When a highly dependent elderly patient from the pilot district is discharged from the hospital, an alert is sent to this Care Coordinator. The patient or the family could opt for help from PICCB. The coordinator then evaluates available social supports in community level. After discussing with the elderly patient and/ or primary caregiver, eligible services are contacted to provide aid tailored to their real-world needs

- For instance, the mobile healthcare team that consists of doctors, nurses, pharmacists, social care officers and admin staff could conduct home visits for those with very limited mobility or located far away (>5km radius) from local clinics.
- According to available resources and service needs, the PICCB develops a single, shared care **plan, and acts as the family's single point-of-contact.**

- **Connecting the Dots:** This coordinator's sole job is to connect existing, separate assets into a single care plan. Apart from follow-ups at the MOH clinics[11], PICCB activates JKM HomeHelp services[42], connects the patient to local Senior Citizen Activity Centres (PAWE)[40], and refers families to relevant NGO support.[43] This intervention directly addresses the "mostly unaware" perception gap.[18]
- **Mitigating Risk:** Evidence also shows that such roles can be seen as an "additional burden" if implemented incorrectly.[44] The pilot must address this risk by ensuring the Care Coordinator is a dedicated, funded position, rather than an additional task assigned to a clinic nurse who already has other core responsibilities.

Invest in Enablers: Digital & Workforce

Digital: The pilot must be supported by a simple, shared digital care record.

- **The Problem:** This directly addresses the 7% CIS adoption gap in public clinics.[13]
- **The Solution:** Given the significant implementation risks associated with large-scale public IT projects[45], a lean, cloud-based model is needed. This could be a secure, shared platform that allows the hospital discharge team, the Klinik Kesihatan doctor, and the community Care Coordinator to view and update the same care plan and coordinate the patient's recovery as an integrated team.

Workforce: The pilot requires investment in formal training in resource management and coordination. This professionalizes the new Care Coordinator role and begins to build a skilled workforce, addressing the recognized national shortage of healthcare professionals trained in elderly care.[46][47]

Enhanced AI: With the empowerment of task-specific large language models (LLMs), the care coordinator could efficiently gather information on the current status of the patient and provide care plan suggestions based on pre-specified resource allocation in each case scenario. Application of artificial intelligence would overcome the digital chasm.

This is a High-Return Investment, not a New Cost

This roadmap should be framed as a high-return investment, rather than a new expenditure. The cost of maintaining the status quo risks unsustainability, therefore the new framework has to be designed as a proactive step towards long-term resilience.

- The economic burden of elderly healthcare in Malaysia is projected to hit RM 21 billion by 2040. [46]
- The societal cost of a single condition like Alzheimer's is already approximately USD 8,600 per patient annually, with the majority of that burden falling on families. [24]

This programme can be designed to be fiscally self-sustaining by shifting expenditure from reactive to proactive care. Reducing preventable medical events such as readmission rate by even a few percentage points within the pilot district would generate direct, measurable savings in hospital costs. These operational savings are projected to outweigh the funding requirements of the PICCB and the Care Coordinators.

CONCLUSION: FROM AGE-FRIENDLY FRAMEWORK TO FUNCTION

With projections showing Penang becoming an “Ageing Nation” by 2029 [4][6], continuing a silo-ed system is both financially and socially unsustainable.[47] Penang may possess an excellent, WHO-recognized Age-Friendly Cities framework [1][2], but this report has argued that this framework currently lacks the functional procedures and infrastructure to bridge the divide between the Federal health (MOH) and State social care (JKM) systems.

This “coordination gap” is a critical systemic issue, evidenced by the visible “perception gap” among its citizens [18], high rates of preventable, costly hospital readmissions [22][23][25], and the overwhelming pressure placed on family caregivers.[26]

The three-part roadmap proposed in this paper provides an engine to make that framework function. With an integrated system in place, the current gaps can be further closed, and a patient’s journey to recovery can be made continuous and coordinated. In this system, a hospital discharge triggers a digital automated alert (overcoming the 7% CIS gap [13]) to a dedicated community Care Coordinator. The coordinator (based at local hospitals and Klinik Kesihatan), then manages a single, shared care plan to efficiently align MOH follow-ups, JKM social support [17], and local NGO services.[43] This is a tangible, ground-level solution. The Federal-State gap can be bridged, and Penang's goal of becoming an age-friendly state by 2028 [6] can become a functional reality for its most vulnerable seniors.

References

[1] Official Portal of City Council of Penang Island - Age Friendly City - Majlis Bandaraya Pulau Pinang, accessed November 18, 2025, https://www.mbpp.gov.my/en/services/bandar-mesra-usia?view=article&id=595:bandar-mesra-usia&catid=86

[2] World Health Organization (2007). Global age-friendly cities: a guide. World Health Organization. https://iris.who.int/handle/10665/43755

[3] Penang population 7.7% aged 65 and over. Available from: https://www.mbpp.gov.my/en/services/bandar-mesra-usia?view=article&id=595:bandar-mesra-usia&catid=86

[4] Malaysia's states set to rapidly age as they fail to retain young talent, accessed November 18, 2025, https://www.scmp.com/news/asia/southeast-asia/article/3047100/malaysias-states-set-rapidly-age-they-fail-retain-young

[5] POPULATION PROJECTIONS, 2020-2060 - Department of Statistics Malaysia, accessed November 18, 2025, https://www.dosm.gov.my/site/downloadrelease?id=population-projections-2020-2060-&lang=English&admin_view=
[6] Penang Gears Up To Become Age-friendly State By 2028 - bernama, accessed November 18, 2025, https://www.bernama.com/en/news.php?id=2337919
[7] Thomas S, Beh L, Nordin RB. Health care delivery in Malaysia: changes, challenges and champions. Journal of public health in Africa. 2011 Sep 5;2(2):e23. Available from: https://doi.org/10.4081/jphia.2011.e23
[8] Khor SK, Chua EP, Fried C. Sustainability and resilience in the Malaysian health system. Center for AsiaPacific Resilience and Innovation (CAPRI). 2024 Aug;2. Available from: https://www3.weforum.org/docs/WEF_PHSSR_CAPRI_Malaysia_2024.pdf
[9] Ramli AS, Taher SW. Managing chronic diseases in the Malaysian primary health care–a need for change. Malaysian family physician: the official journal of the Academy of Family Physicians of Malaysia. 2008 Apr 30;3(1):7. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC4267020/#ref-list1
[10] Health White Paper for Malaysia – Ministry of Health Malaysia (2023) accessed November 21 2025. Available from: https://www.moh.gov.my/moh/resources/Penerbitan/Penerbitan%20Utama/Kertas%20Putih%20Kesihatan/Kertas_Putih_Kesihatan_(ENG)_compressed.pdf
[11] General Hospital Operational Policy - Kementerian Kesihatan Malaysia, accessed November 18, 2025, https://www.moh.gov.my/moh/resources/Penerbitan/Garis%20Panduan/Garis%20Panduan%20Umum(KKM)/GHOP_2013.pdf
[12] Abd Razak N, Ithnin N, Osman MZ. Investigating the barriers of health information system implementation in Malaysian Public Hospitals. InIOP Conference Series: Materials Science and Engineering 2020 Feb 1 (Vol. 769, No. 1, p. 012054). IOP Publishing. Available from: https://doi.org/10.1088/1757-899X/769/1/012054
[13] Naim N, Kuroda Y, Yamada S, Mori Y, Liu C, Espinoza R, Yamamoto G, Kuroda T. The evolution of healthcare digitalisation policies in Malaysia: A four-decade narrative review (1985–2025). Digital Health. 2025 Jul;11:20552076251353279. Available from: https://doi.org/10.1177/20552076251353279
[14] Public Service Delivery and Local Government | eService Delivery | G2C | HIS@KKM, accessed November 18, 2025, https://www.malaysia.gov.my/portal/content/31329
[15] Malaysia's Input For Cluster On Long-Term Care And Palliative Care For Deliberation At The 9th Session Open-Ended Working Group On Ageing 23-26 July 2018. Accessed November 21, 2025. Available from: https://social.un.org/ageing-working-group/documents/ninth/Inputs%20Member%20States/Malaysia_LTC.pdf
[16] Chan SL, Matsah NS, Yusuf AA, Khaidir AS, Hamdan NH, Kamizi ZN. A review on family caregiving challenges in Malaysia. ProGCouns: Journal of Professionals in Guidance and Counseling. 2022 May 31;3(1):1-9. Available from: https://doi.org/10.21831/progcouns.v3i1.48386
[17] Laporan Tahunan 2022 - Jabatan Kebajikan Masyarakat Malaysia (2023) Accessed November 21, 2025.Available from: https://www.jkm.gov.my/uploads/content-downloads/file_20241025152318.pdf

[18] Policy Brief: Age-Friendly City Penang Stakeholders Engagement Outcomes – Malaysian Healthy Ageing Society (MHAS). Accessed November 21, 2025. Available from: https://healthyageing.org/wp-content/uploads/2023/10/PENANG-POLICY-BRIEF_FINAL-April-2023.pdf
[19] Sajali NS, Khalid NM, Razak NA. Lived experiences of Malaysian family caregivers of patients with chronic illnesses: A qualitative study. Malaysian Family Physician: the Official Journal of the Academy of Family Physicians of Malaysia. 2025 May 8;20:31. Available from: https://doi.org/10.51866/oa.683
[20] Availability and Burden of Family Caregivers in Caring for a Recurrent Stroke Survivor in the Community During a Pandemic | The Malaysian Journal of Nursing (MJN), accessed November 18, 2025, https://ejournal.lucp.net/index.php/mjn/article/view/1684
[21] Ang SH, Hwong WY, Bots ML, Sivasampu S, Abdul Aziz AF, Hoo FK, Vaartjes I. Risk of 28-day readmissions among stroke patients in Malaysia (2008–2015): Trends, causes and its associated factors. PloS one. 2021 Jan 19;16(1):e0245448. Available from: https://doi.org/10.1371/journal.pone.0245448
[22] Lim YM, Ong SM, Koudstaal S, Hwong WY, Liew HB, Rajadurai J, Grobbee DE, Asselbergs FW, Sivasampu S, Vaartjes I. Trends for readmission and mortality after heart failure hospitalisation in Malaysia, 2007 to 2016. Global Heart. 2022 Mar 8;17(1):20. Available from: https://doi.org/10.5334/gh.1108
[23] Ziaeian B, Fonarow GC. The prevention of hospital readmissions in heart failure. Progress in cardiovascular diseases. 2016 Jan 1;58(4):379-85. Available from: https://doi.org/10.1016/j.pcad.2015.09.004
[24] Ong SC, Tay LX, Ong HM, Tiong IK, Ch 'ng AS, Parumasivam T. Annual societal cost of Alzheimer's disease in Malaysia: a micro-costing approach. BMC geriatrics. 2025 Mar 6;25(1):154. Available from: https://doi.org/10.1186/s12877-025-05717-y
[25] Glette MK, Kringeland T, Røise O, Wiig S. Hospital physicians' views on discharge and readmission processes: a qualitative study from Norway. BMJ open. 2019 Aug 1;9(8):e031297. Available from: https://doi.org/10.1371/journal.pone.0233457
[26] Lack of coordinated care for patients with long-term health issues – Healthcare Today (2025). Accessed November 21, 2025. Available from: https://healthcaretoday.com/article/lack-of-coordinated-care-for-patients-with-long-term-health-issues
[27] Official Portal of City Council of Penang Island - Age Friendly City - Majlis Bandaraya Pulau Pinang, accessed November 18, 2025, https://www.mbpp.gov.my/en/services/bandar-mesra-usia
[28] AGE-FRIENDLY CITY - Resilient Cities Network, accessed November 18, 2025, https://resilientcitiesnetwork.org/wp-content/themes/Divi-Child/penangpage/projects/Penang_project_sheet_27.pdf
[29] Connecting care across generations: WHO visits Penang, accessed November 18, 2025, https://www.who.int/westernpacific/newsroom/feature-stories/item/connecting-care-across-generations--who-visits-penang
[30] About Us - Agency for Integrated Care - AIC.sg, accessed November 18, 2025, https://www.aic.sg/about-us/

[31] Orchestrating Elderly Care: Singapore's Integration Solution - Istanbul Innovation Days, accessed November 18, 2025, https://istanbulinnovationdays.org/orchestrating-elderly-care-singapores-integration-solution/
[32] Integrated Care Partnerships: Driving the future vision for health and care, accessed November 18, 2025, https://www.local.gov.uk/publications/integrated-care-partnerships-driving-future-vision-health-and-care
[33] What are integrated care systems? - NHS England, accessed November 18, 2025, https://www.england.nhs.uk/integratedcare/what-is-integrated-care/
[34] Chen CF, Fu TH. Policies and transformation of long-term care system in Taiwan. Annals of geriatric medicine and research. 2020 Sep 24;24(3):187. Available from: https://doi.org/10.4235/agmr.20.0038
[35] Yeh MJ. Long-term care system in Taiwan: the 2017 major reform and its challenges. Ageing & Society. 2020 Jun;40(6):1334-51. Available from: https://doi.org/10.1017/S0144686X18001745
[36] Long-term Care Plan 2.0 - Executive Yuan, accessed November 18, 2025, https://english.ey.gov.tw/News3/9E5540D592A5FECD/332a78c0-0c8e-4064-bd71-8c22477dae75
[37] Hung JY, Chiang PH, Li KL. Analysis of Different Perspectives of Community-Based Long-Term Day-Care Centers. International Journal of Environmental Research and Public Health. 2025 Jun 27;22(7):1017. Available from: https://doi.org/10.3390/ijerph22071017
[38] What Primary Health Networks are | Australian Government Department of Health, Disability and Ageing, accessed November 18, 2025, https://www.health.gov.au/our-work/phn/what-PHNs-are
[39] Booth M, Hill G, Moore MJ, Dalla D MM, Messenger A. The new Australian Primary Health Networks: how will they integrate public health and primary care. Public Health Res Pract. 2016 Jan 28;26(1):e2611603. Available from: https://doi.org/10.17061/phrp2611603
[40] Connecting care across generations: WHO visits Penang, accessed November 18, 2025, https://www.who.int/westernpacific/newsroom/feature-stories/item/connecting-care-across-generations--who-visits-penang
[41] Naim N, Kuroda Y, Yamada S, Mori Y, Liu C, Espinoza R, Yamamoto G, Kuroda T. The evolution of healthcare digitalisation policies in Malaysia: A four-decade narrative review (1985–2025). Digital Health. 2025 Jul;11:20552076251353279.Available from: https://doi.org/10.1177/20552076251353279
[42] Empower support system for Elderly's well-being – Bernama. Accessed November 21, 2025. Available from: https://www.bernama.com/en/news.php?id=2129989
[43] PgCare Society | One Stop Center For Mental Health, Job, Food Aid & Financial Consultation, accessed November 18, 2025, https://www.pgcarealliance.com/
[44] Foo CD, Yan JY, Chan AS, Yap JC. Identifying key themes of care coordination for patients with chronic conditions in Singapore: a scoping review. InHealthcare 2023 May 25 (Vol. 11, No. 11, p. 1546). MDPI. Available from: https://doi.org/10.3390/healthcare11111546
[45] Tun SY, Madanian S. Clinical information system (CIS) implementation in developing countries: requirements, success factors, and recommendations. Journal of the American Medical Informatics Association. 2023 Apr 1;30(4):761-74. Available from: https://doi.org/10.1093/jamia/ocad011

[46] Abdullah JM, Ismail A, Yusoff MS. Healthy ageing in Malaysia by 2030: Needs, challenges and future directions. The Malaysian Journal of Medical Sciences: MJMS. 2024 Aug 27;31(4):1. Available from: https://doi.org/10.21315/mjms2024.31.4.1

[47] Haron SA, Koris R, Orhun NM, Nur AM, Aljunid SM, Shafie AA. Economic Burden of Healthcare Utilisation by Older Persons Living in the Community in Malaysia. Journal of Health Policy & Outcomes Research. 2024 Mar;3. Available from: https://doi.org/10.7365/JHPOR.2024.1.1

Managing Editor:
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Editorial Team:
Tan Lee Ooi and Nur Fitriah (designer)

PENANG INSTITUTE
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10 Brown Road
10350 George Town
Penang, Malaysia

Tel : (604) 228 3306
Web : penanginstitute.org
Email : issues@penanginstitute.org