

## Figures

|     |  |                |
|-----|--|----------------|
| 2.1 | The susceptible–infected–recovered (SIR) system  | <i>page</i> 21 |
| 2.2 | A causal loop diagram (CLD)  | 22             |
| 2.3 | Two types of feedback structure  | 23             |
| 2.4 | An influence diagram (ID)  | 24             |
| 4.1 | Pap smear slides taken and coverage in Malaysia, 1994–2003   | 79             |
| 4.2 | Trends in the utilisation pattern of OPDs  | 81             |
| 4.3 | Estimated outpatient visits to clinics per capita per annum, Malaysia, 1930s–2000s   | 87             |
| 4-A | Expansion of scope in PHC services   | 98             |
| 4-B | Approaches to healthcare require supportive practices and systems, which in turn create an ecosystem that is aligned to and facilitates that approach  | 100            |
| 4-C | Four changes to the PHC clinics’ setting were critical to the ecosystem change: locus of financing and decision-making, scope and alignment of healthcare staff responsibilities, professional development pathways, and facilities and operations | 101            |
| 4-D | Reviewed approach of primary healthcare (REAP-WISE)  | 102            |
| 4-a | Employee expectations and unionisation determine the effectiveness of their demands of employers for healthcare benefits   | 108            |
| 4-b | MCO-imposed caps on per-visit reimbursement generates hidden costs through multiple visits (R1) or inadequate provision of care (B2)   | 110            |
| 4-c | Impact of MCOs on employer–employee–union dynamics changing the prior system (Figure 4-a) in ways that result in lower health benefits for the workforce   | 112            |

|      |   |     |
|------|---|-----|
| 4-d  | Pathways toward government regulation of practices related to healthcare benefits are ineffectual due to limited ability of the public and medical professionals to organise (B4 loop) and lack of information on how these practices affect the burden on the public healthcare system (B5 loop) | 113 |
| 5.1  | Evolving profile of types of hospitals, number of TB and leprosy beds, and childbirth in hospitals  | 120 |
| 5.2  | Utilisation of Ministry of Health hospitals in Peninsular Malaysia, 1970 and 1996   | 122 |
| 5.3  | Dynamics of providing more sophisticated clinical services  | 126 |
| 5.4  | Rising demand for medical care outpaced public hospital resources, creating a gap in public sector capacity   | 129 |
| 5.5  | Dynamics of improving clinical outcomes and establishing a quality culture at every level   | 132 |
| 5.6  | Dynamics of improving resource utilisation and client satisfaction  | 133 |
| 5.7  | Bed occupancy rates in MoH hospitals  | 137 |
| 5.8  | Harnessing technology to improve access to seamless, integrated care  | 141 |
| 5.9  | Composition of inpatient care utilisation in public and private sector by socio-economic status   | 142 |
| 5.10 | Interactions between the larger ecosystem and the healthcare provider sub-system with its enabling or constraining sub-systems  | 147 |
| 5-a  | The rising demand for more sophisticated STC stressed the capacity of the public sector, thereby requiring greater investment   | 151 |
| 5-b  | In the 1970s and 1980s, rising societal affluence further increased the demand for sophisticated healthcare, resulting in the growth of the private sector STC, drained specialists from the public sector to the private sector and counteracted efforts to increase public sector capacity      | 152 |
| 5-c  | Increased investment resulted in increased availability of specialist services but was associated with the unanticipated effect of increased compartmentalisation of care   | 153 |

|     |  |     |
|-----|--|-----|
| 5-d | Investment in public sector organisational structure improved the capacity to deal with compartmentalisation   | 154 |
| 5-A | The gap between demand and supply  | 165 |
| 5-B | A view of the wider system affecting dialysis demand and supply  | 166 |
| 5-C | Changing the behaviour of the system through new policy  | 167 |
| 5-D | Effect of the rapid expansion of services on the workforce   | 170 |
| 6.1 | Incidence rate of communicable diseases per 100,000 population, Malaysia, 1975–1997  | 173 |
| 6-A | A criminalisation approach emphasising criminal enforcement, education and rehabilitative efforts failed to reduce the number of new HIV cases from injecting drugs use  | 209 |
| 6-B | Stigmatisation and the paradigm of regarding the MoH as the main provider of outreach and services were barriers to a harm reduction programme   | 212 |
| 6-C | Commitment to MDG goals and local advocacy were critical enabling factors that overcame barriers to the adoption of the harm reduction approach  | 213 |
| 6-D | Success of the pilots created favourable conditions for institutional changes that persisted even after key enabling factors for the adoption of the harm reduction approach (MDGs and local advocacy) receded | 215 |
| 6-E | While harm reduction strategies have reduced HIV in IDUs, the gains are being threatened by the increasing incidence of sexual transmission of HIV   | 217 |
| 7-A | The PWD strategy for expanding the water and sanitation network was unable to respond to rural disease burdens in a timely manner  | 236 |
| 7-B | Inadequate rural infrastructure investment in sanitation undermined community trust in government actors, hindering educational efforts that attempted to address the sanitation issues                        | 237 |
| 7-C | The paradigm that the MoH mission is limited to healthcare delivery created internal and external barriers to its involvement in rural water and sanitation  | 240 |

|     |  |     |
|-----|--|-----|
| 7-a | Factors that led to poor clinical waste management   | 242 |
| 7-b | Inability of the government to allocate sufficient resources for clinical waste management undercut both the enforcement of standards that did exist and the development of further standards necessary for 'cradle-to-grave' management | 243 |
| 7-c | Outsourcing of clinical waste services enabled necessary capital investment for clinical waste management, enabling the B1, B2 and B3 loops to function properly   | 244 |
| 8.1 | Malaysian doctors in the public and private sectors, 1955–2013   | 265 |
| 8.2 | Regional disparities in availability of doctors, 1970–2010   | 266 |
| 8.3 | Utilisation of outpatient services in Malaysia   | 270 |
| 8.4 | Distribution of selected specialist doctors in Malaysia, 2013  | 282 |
| 8.5 | Reported satisfaction with public and private clinics, 2015  | 284 |
| 8.6 | Reported satisfaction with public and private hospitals, 2015  | 284 |
| 8-A | New graduates entering the workforce as HOs  | 293 |
| 8-B | Doctors' average career path in Malaysia   | 295 |
| 8-C | Meeting the demand   | 296 |
| 8-D | Lack of capacity planning  | 297 |
| 8-E | Impact of the bottleneck on the HO experience  | 298 |
| 8-F | The specialist bottleneck  | 300 |
| 8-G | Systems responses to the crisis  | 302 |
| 9.1 | Public and private health financing sources, Malaysia, 1997–2017   | 310 |
| 9-A | Concerns over sustainable health care financing and quality of care are creating an impetus to improve hospital performance  | 332 |
| 9-B | Institutional pressures keep generic accounting approaches in place over the adoption of the case-mix approach   | 334 |

|      |   |     |
|------|---|-----|
| 10.1 | Reinforcing loop showing how compliance with data collection improves the quality of data, enabling positive impacts on health outcomes   | 350 |
| 10-A | For telehealth functions that cut across health facilities, the more health facilities adopt and operate within a particular interoperable telehealth standard, the greater the benefit for other facilities to adopt that standard, creating a reinforcing cycle (R1 loop) | 362 |
| 10-B | The push for the adoption of telehealth could increase the number of facilities adopting an interoperable telehealth standard or lead to the proliferation of incompatible standards  | 363 |
| 10-C | The proliferation of incompatible telehealth standards actually increases the cost of adopting interoperable standards (R3 loop) due to health facility operations and structures coming to rely on incompatible telehealth software  | 364 |
| 10-D | The lack of a critical mass of health facilities operating on the same telehealth standard reduces benefits for certain functions, such as health information exchange  | 365 |
| 11.1 | Number of received reports of ADR   | 378 |
| 11.2 | Number and ratio of pharmacists per 10,000 population   | 381 |
| 11.3 | Number and ratio of assistant pharmacists per 10,000 population   | 382 |
| 11.4 | MoH medicine expenditure, 2008–2017   | 384 |
| 11.5 | Number of outpatient prescriptions received, 2011–2017  | 385 |
| 11.6 | Export and import value of pharmaceutical products to Malaysia, 2013 and 2017   | 390 |
| 11-A | The registration and regulation of traditional medicines was in response to the adverse health impacts from the improper manufacture and use of traditional medicines and has successfully reduced poor practice and consequent outcomes                                    | 397 |
| 11-B | Regulation of traditional medicines creates costs to traditional medicine businesses, which some actors attempt to bypass (R1), creating a race to close  |     |

|      |   |     |
|------|---|-----|
|      | regulation loopholes (B1) and enforce existing regulations (B2)   | 398 |
| 11-C | Creating benefits for traditional medicine businesses for compliance with regulation can reward good actors and reduce attempts to bypass regulation  | 400 |
| 12-A | The paradigm that affordable medical treatment should be a right has led to the creation of tools meant to limit the price of treatment (B1 loop). These tools have provided governments with important leverage to negotiate treatment prices with suppliers (B2 loop).  | 434 |
| 12-B | Reliance on the private sector for developing treatment solutions creates a competing paradigm that distrusts interference with market mechanisms (R1 loop). This paradigm undermines the availability of price control tools (B3 loop).  | 435 |
| 12-C | Advocates for market-driven development of medical products have pushed for trade agreements, IPR protection and the use of political pressure and sanctions that increase the risk of using price control tools to limit government actions to control treatment prices (B4 loop). For governments to successfully utilise these tools, they must take a variety of actions to mitigate against these risks. | 435 |
| 13.1 | The WHO health system framework   | 450 |
| 13.2 | Proposed revised layout of the WHO building blocks depicted in Figure 13.1  | 466 |
| 14.1 | The health systems in society model contains eight linkages that form the macro-level feedback loops that shape the health system and its component building blocks   | 482 |