Healthcare Systems
Future Predictions for Global Care

Edited by
Jeffrey Braithwaite
Russell Mannion
Yukihiro Matsuyama
Paul G. Shekelle
Stuart Whittaker
Samir Al-Adawi

CRC Press
Taylor & Francis Group
## Contents

Preface......................................................................................................................xi
Acknowledgments ..............................................................................................xiii
About the Editors ..................................................................................................xv
About the Contributors ...................................................................................... xix
Contributors............................................................................................................lv

### Introduction

Jeffrey Braithwaite, Russell Mannion, Yukihiro Matsuyama, Paul G. Shekelle, Stuart Whittaker, Samir Al-Adawi, Kristiana Ludlow, and Wendy James

### Part I  The Americas

Paul G. Shekelle

1 Argentina: Achieving Universal Coverage .............................................15
   Hugo Arce, Ezequiel García-Elorrio, and Viviana Rodríguez

2 Brazil: Patient Safety: Distance-Learning Contribution ......................23
   Walter Mendes, Ana Luiza Pavão, Victor Grabois, and Margareth Crisóstomo Portela

3 Canada: The Future of Health Systems: Personalization .................31
   Anne W. Snowdon, Charles Alessi, John Van Aerde, and Karin Schnarr

4 Chile: The Struggle for an Integrated Health Insurance System ......37
   Oscar Arteaga

5 Guyana: Paradigm Shift: From Institutional Care to Community-Based Mental Health Services ............................................45
   William Adu-Krow, Vasha Elizabeth Bachan, Jorge J. Rodríguez Sánchez, Ganesh Tatkan, and Paul Edwards

6 Mexico: Leveraging Conditional Cash Transfers and Universal Health Coverage to Tackle Non-Communicable Diseases ..........55
   Jafet Arrieta, Enrique Valdespino, and Mercedes Aguerrebere

7 Trinidad and Tobago: Nurse Training: A Competency-Based Approach .................................................................61
   Claudine Richardson-Sheppard
8 The United States of America: The U.S. Healthcare System: A Vision for the Future ................................................................. 69
   Robert H. Brook and Mary E. Vaiana

9 Venezuela: Learning from Failure and Leveraging Technology: Innovations for Better Care ..................................................... 75
   Pedro Delgado, Luis Azpurua, and Tomás J. Sanabria

Part II  Africa
Stuart Whittaker

10 Namibia: Lessons from Patient Involvement in HIV Care: A Paradigm for Patient Activation and Involvement across Health Systems .................................................................................. 83
   Bruce Agins, Joshua Bardfield, Margaret K. Brown, Daniel Tietz, Apollo Basenero, Christine S. Gordon, Ndapewa Hamunime, and Julie Taleni Neidel

11 Nigeria: Doing More with Less: Lean Thinking in the Health System ......................................................................................... 93
   Emmanuel Aiyenigba

12 South Africa: Regulated Standards: Implementation and Compliance ......................................................................................... 103
   Stuart Whittaker, Lizo Mazwai, Grace Labadarios, and Bafana Msibi

13 Rwanda: Embracing One Health as a Strategy to Emerging Infectious Diseases Prevention and Control ........................................ 113
   Roger Bayingana and Edward Chappy

14 Africa: Equity for All: A Global Health Perspective for the Continent ......................................................................................... 119
   Jacqui Stewart and Shivani Ranchod

Part III  Europe
Russell Mannion

15 Austria: Primary Healthcare Centers: A Silver Bullet? ....................... 131
   Maria M. Hofmarcher, Susanne Mayer, Nataša Perić, and Thomas E. Dorner

16 Denmark: Patient-Reported Outcomes: Putting the Patient First .... 139
   Liv Dørflinger, Jesper Eriksen, Janne Lehmann Knudsen, and Carsten Engel
Contents

17 England: Getting Personal? Personal Health Budgets ....................... 147
   Martin Powell and Russell Mannion

18 Estonia: e-Consultation Services: Cooperation between Family
   Doctors and Hospital Specialists ............................................................ 153
   Ruth Kalda, Kaja Põlluste, and Margus Lember

19 Finland: A Real-Life Experiment in Precision Medicine .................... 159
   Persephone Doupi

20 France: Horizon 2030: Adopting a Global-Local Approach to
   Patient Safety .......................................................................................... 167
   Catherine Grenier, René Amalberti, Laetitia May-Michelangeli, and
   Anne-Marie Armanteras-de-Saxcè

21 Germany: Health Services Research and Future Planning in
   Pediatric Care .......................................................................................... 175
   Wolfgang Hoffmann, Angelika Beyer, Holger Pfaff, and Neeltje van den Berg

22 Greenland: Everyday Life with Chronic Illness: Developing a
   Democratic and Culture-Sensitive Healthcare Practice ...................... 183
   Tine Aagaard and Lise Hounsgaard

23 Italy: The Introduction of New Medical Devices in an Era of
   Economic Constraints ........................................................................... 191
   Americo Cicchetti, Valentina Iacopino, Silvia Coretti, and Marcella Marletta

24 Malta: The National Cancer Plan: Strengthening the System .......... 199
   Sandra C. Buttigieg, Kenneth Grech, and Natasha Azzopardi-Muscat

25 The Netherlands: Reform of Long-Term Care ................................. 205
   Madelon Kroneman, Cordula Wagner, and Roland Bal

26 Northern Ireland: Developing a Framework to Support
   Building Improvement Capacity across a System .............................. 213
   Gavin Lavery, Cathy McCusker, and Charlotte McArdle

27 Norway: Bridging the Gap: Opportunities for Hospital Clinical
   Ethics Committees in National Priority Setting .................................... 221
   Ånen Ringard and Ellen Tveter Deilkås

28 Portugal: Prevention of Antimicrobial Resistance through
   Antimicrobial Stewardship: A Nationwide Approach ....................... 227
   José-Artur Paiva, Paulo André Fernandes, and Paulo Sousa
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>29</td>
<td>Russia: The Future of Physicians’ Specialization</td>
<td>Vasily V. Vlassov and Mark Swaim</td>
</tr>
<tr>
<td>30</td>
<td>Scotland: Deliberative Engagement: Giving Citizen Involvement Meaning</td>
<td>Richard Norris, Andrew Thompson, and David R. Steel</td>
</tr>
<tr>
<td>31</td>
<td>Spain: How Can Patient Involvement and a Person-Centered Approach</td>
<td>Laura Fernández-Maldonado, Sergi Blancafort Alias, Marta Ballester</td>
</tr>
<tr>
<td></td>
<td>Improve Quality in Healthcare? The Patients’ University</td>
<td>Santiago, Lilisbeth Perestelo-Pérez, and Antoni Salvà Casanovas</td>
</tr>
<tr>
<td>32</td>
<td>Spain: How Can Patient Involvement and a Person-Centered Approach</td>
<td>Laura Fernández-Maldonado, Sergi Blancafort Alias, Marta Ballester</td>
</tr>
<tr>
<td></td>
<td>Improve Quality in Healthcare? The Patients’ University</td>
<td>Santiago, Lilisbeth Perestelo-Pérez, and Antoni Salvà Casanovas</td>
</tr>
<tr>
<td>33</td>
<td>Norway: Teamwork and Simulation</td>
<td>Anthony Staines and Adriana Degiorgi</td>
</tr>
<tr>
<td>34</td>
<td>Turkey: Moving Quality in Healthcare Beyond Hospitals: The Turkish</td>
<td>Mustafa Berktaş and Ibrahim H. Kayral</td>
</tr>
<tr>
<td></td>
<td>Accreditation Model</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Wales: Realizing a Data-Driven Healthcare Improvement Agenda: A</td>
<td>Andrew Carson-Stevens, Jamie Hayes, Andrew Evans, and Sir Liam Donaldson</td>
</tr>
<tr>
<td></td>
<td>Manifesto for World-Class Patient Safety</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>Central and Eastern Europe: Strengthening Community-Based Family</td>
<td>Jeffrey Braithwaite, Wendy James, Kristiana Ludlow, and Russell Mannion</td>
</tr>
<tr>
<td></td>
<td>Care and Improving Health Equities</td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>Central Asia: From Russia with Love: Health Reform in the Stans of</td>
<td>Jeffrey Braithwaite, Wendy James, Kristiana Ludlow, and Yukihiro Matsuyama</td>
</tr>
<tr>
<td></td>
<td>Central Asia</td>
<td></td>
</tr>
<tr>
<td>Part IV</td>
<td>Eastern Mediterranean</td>
<td>Samir Al-Adawi</td>
</tr>
<tr>
<td>38</td>
<td>Iran: Hospital Accreditation: Future Directions</td>
<td>Ali Mohammad Mosadeghrad</td>
</tr>
<tr>
<td>39</td>
<td>Jordan: Improving Quality of Care by Developing a National Human</td>
<td>Reem Al-Ajlouni and Edward Chappy</td>
</tr>
<tr>
<td></td>
<td>Resources for Health Strategy</td>
<td></td>
</tr>
</tbody>
</table>
40 Lebanon: m-Health for Healthcare Delivery Reform: Prospects for Lebanese and Refugee Communities.................................................................311
Nasser Yassin, Rawya Khodor, and Maysa Baroud

41 Oman: Paradigm Change: Healthy Villages to Meet Tomorrow’s Health Needs ...............................................................................................319
Ahmed Al-Mandhari, Huda Alsiyabi, Samia Al Rabhi, Sara S. H. Al-Adawi, and Samir Al-Adawi

42 Pakistan: The Way Forward ..................................................................... 327
Syed Shahabuddin and Usman Iqbal

43 Qatar: Hospice Palliative Care .................................................................333
Yousuf Al Maslamani, Noora Alkaabi, and Nagah Abdelaziz Selim

44 The United Arab Emirates: Improving Healthcare through a National Unified Medical Record ...........................................................341
Subashnie Devkaran

45 Yemen: Integrating Public Health and Primary Care: A Strategy for the Health System of the Future ........................................................349
Khaled Al-Surimi

46 Middle East and North Africa (MENA): Health Systems in Transition .....................................................................................................355
Jeffrey Braithwaite, Wendy James, Kristiana Ludlow, and Subashnie Devkaran

Part V South-East Asia and the Western Pacific
Jeffrey Braithwaite and Yukihiro Matsuyama

47 Australia: The Silver Tsunami: The Impact of the Aging Population on Healthcare ......................................................................................367
Ken Hillman, Fakhri Athari, Steven Frost, and Jeffrey Braithwaite

48 China: Integrated Stratified Healthcare System ........................................373
Hao Zheng

49 Hong Kong: Integrated Health Services: A Person-Centered Approach .....................................................................................................381
Eliza Lai-Yi Wong, Hong Fung, Patsy Yuen-Kwan Chau, and Eng-Kiong Yeoh

50 India: How to Build a First-World Health System on a Third-World Budget ..................................................................................................389
Girdhar Gyani
51 Japan: Toward a Community-Friendly Dementia Strategy ..........397
Yukihiro Matsuyama

52 Malaysia: The Future Malaysian Antenatal Care System:
Building upon the Old.................................................................405
Ravindran Jegasothy and Ravichandran Jeganathan

53 Mongolia: Health System Financing........................................413
Tumurbat Byamba and Tsolmongerel Tsilaajav

54 New Zealand: Strengthening Primary Healthcare..............421
Jacqueline Cumming

55 Papua New Guinea: Strengthening the Collection, Analysis,
and Use of Health Data through eHealth Solutions ..............427
Paulinus Lingani Ncube Sikosana

56 Taiwan: “My Data, My Decision”: Taiwan’s Health
Improvement Journey from Big Data to Open Data ...............433
Yu-Chuan (Jack) Li, Wui-Chiang Lee, Min-Huei (Marc) Hsu, and
Usman Iqbal

57 South-East Asia: Taming Communicable Diseases.............443
Jeffrey Braithwaite, Wendy James, Kristiana Ludlow, and Yukihiro Matsuyama

Discussion and Conclusion .........................................................451
Jeffrey Braithwaite, Russell Mannion, Yukihiro Matsuyama, Paul
G. Shekelle, Stuart Whittaker, Samir Al-Adawi, Kristiana Ludlow,
Wendy James, and Elise McPherson

References ....................................................................................467

Index .............................................................................................517
Russia

The Future of Physicians’ Specialization

Vasiliy V. Vlassov and Mark Swaim

CONTENTS
Russian Data ........................................................................................................236
Background ..........................................................................................................236
Future Reflections ...............................................................................................237
Impact ...................................................................................................................239
Prospects ...............................................................................................................239
Conclusion ...........................................................................................................240
Russian Data

- Population: 144,342,396
- GDP per capita, PPP: $23,162.6
- Life expectancy at birth (both sexes): 70.5 years
- Expenditure on health as proportion of GDP: 7.07%
- Estimated inequity, Gini coefficient: 41.6%

Source: All data are from the World Health Organization and World Bank. Latest available data used as at October 2017.  
GDP = Gross Domestic Product  
PPP = Purchasing Power Parity

Background

By the eighteenth century, medicine was grappling with rapidly expanding knowledge and technologies (Williams, 2000). So that multiple standards of care for the same condition were not in conflict, specialties based on physician affinity developed out of generalist practice. By the late twentieth century, nations diverged in a number of specialties earning official recognition, but a singular trend of growth in specialization was unchanged. Specialization may seem to be ornamentation that denotes technical prowess and knowledge advancement, but it is essential in that it alters workforce self-organization and delivery of care, and channels patients into more finely distinguished pathways of care.*

Specialization legitimates medical professionalism in the public eye, especially when physicians validate the importance of generalists. In 1999, major medical organizations promulgated a “Charter on Medical Professionalism” that espoused professionals, including specialists, as activists in healthcare reform (Haynes et al., 1986).  

When does a new (sub)specialty germinate? When does it crystallize? New specialties emerge when physicians recognize a scope of services employing a set of technologies dictated by a set of problems to be treated. A specialty or its subspecialty may form around an organ, a set of related organs, or a particular anatomical area. However, while this is a necessary precondition, a specialty will only develop if its objectives align with those of the society in question, along with its healthcare system. Thus, the hepatitis C viral epidemic led to a

* For this review we searched MEDLINE using next strategy: (specialization[mh] OR specialty OR specialized) AND (training OR education) AND (doctors OR physician* AND 2000:2017[dp] AND (trend* OR future OR progress* OR tendency OR perspective). Excluded were issues of race and gender pertaining to specialization, physician (e/im)migration, international cooperation, aging and reimbursement. A reference list was bolstered by deploying the similar search strategy at scholar.google.com and snowballing. The Russian perspective is enriched from author VVV’s collection and the database “Rossiiskaia Meditsina”.
new American specialty, transplant hepatology. Every specialty must be recognized by the system’s power brokers and represented in the healthcare structure. A hospitalist proctologist designation, for instance, lacks standing where all in-hospital care (such as in post-Soviet Russia) is provided by hospitalists.

Early-career physicians inexorably seek more (sub)specialty training because specialties are perceived to be more prestigious, providing a better lifestyle, improved work conditions, higher incomes, and scope of services consistent with personal interests. The Western model perceives a difference in income between the (sub)specialist and the generalist; this difference may be substantial in other nations, and may have been greater in other eras (Sloan, 1970).

The trend to seek subspecialization is widespread. In all affluent nations and across all specialties, moving into subspecialties is the norm: it is ubiquitous (Brotherton et al., 2005). Most developed nations face an increasing oversupply of subspecialists, but this abundance is not equally distributed. Canada, for example, has had at least 60% of ophthalmology residents pursue fellowships (e.g., in vitreoretinal surgery) over the past 25 years (Fisher, 2016). Trainees compete for more rarefied credentials and access to better teachers. For poorly understood reasons, subspecialists within pediatrics are less common (Mayer and Skinner, 2004).

A tendency to seek a narrower scope of practice is prevalent also in both middle- and low-income nations. In fact, the orientation among all doctors in all countries in the twentieth century trends away from general practice (Newton and Grayson, 2003). However, low purchasing power reduces the growth of subspecialist cadres in poorer nations. In many post-Soviet countries, primary care physicians are in short supply, but specialists, paradoxically, are even less accessible: they emigrate from the public health sector to the private clinics and “cherry-pick” patients.

Because the general practice workforce has collapsed, along with public esteem for general practice, a number of corrective initiatives have emerged, some durable and showing signs of success (Martin et al., 2004). For example, some U.S. medical schools secure students biased toward primary care, and the number of pediatrics residents seeking subspecialty training in the United States has decreased significantly (Mayer and Skinner, 2004). The reasons for such changes are unclear, however; it may be that certain educational drives are retaining residents in family medicine and in proximity to where such care is needed, or it may be a consequence of less quantifiable sociological factors (Fagan et al., 2015).

Future Reflections

In most post-Soviet countries, getting subspecialty training is simple. Residencies are short (1–2 years) and the specialization is merely 6 months of additional training. Doctors in these programs are treated as students, and
Healthcare Systems are paid shamefully low stipends. The need to extend residency training is widely accepted, but resources are scarce and legislative will to change regulations relating to doctors-in-training is absent. To fill primary care positions, Russia recently took a strange turn by changing federal healthcare law (law 323): residency is currently not required for new graduates who choose to practice primary care. Russia has thus forfeited the main achievement of medical education in the twentieth century, at great cost to physician expertise. Sooner or later, the Russian system will need to establish a reasonable period of residency training, despite the fact that this runs counter to the pressing need for a greater number of primary care doctors.

While specialization was organ-oriented until the early twentieth century, later specializations cropped up around new pathophysiological concepts, for example, infectious diseases and endocrinology. Expanding knowledge and technological advances led to arcane, asymptotically narrow subspecialties, such as vascular neurology (Adams and Biller, 2014) and neurohospitalist (Chang and Pratt, 2012). The pendulum has swung too far.

The proliferation of specialties leads to problems of who best manages a patient: which specialty should deal with the eye problems of diabetes, for example? The eye was once the province of a singular (sub)specialist, but now many speak for the organ. Prostate cancer is reckoned with differently by generalists, urologists, oncologists, and radiation oncologists. Bewilderingly, in some quarters this has provoked calls for the creation of neosubspecialties, such as vulvology (Micheletti et al., 2002), to overcome the issues incurred by treatment by too many diverse subspecialties of one organ, tissue, or site.

The transformations of both medicine and society alter the disposition of medical graduates toward specialty, and always will. The fact that we now live longer lives, with a related increase in the likelihood of suffering, has sparked the emergence of palliative care medicine, just as decades earlier similar factors led to a geriatrics specialty. The United Kingdom now has more palliative care specialists than the combined number of oncologists and neurologists (Doyle, 2007).

What governs and regulates subspecialization? The most acute demonstration of the management of subspecialization may be the United States, where market forces provide dominant but incomplete control (Stoddard et al., 2000). Market forces are an inadequate mechanism when it comes to timing: training and its duration dictate deficit and supply. In other countries, shortages in some specialties and surfeits in others have led to efforts to implement centrally regulated training volume. Regulation of this kind may be guided by such methods as the U.S. FutureDocs Forecasting Tool, which estimates the supply of physicians and capacity to meet population needs up until 2030 (Ricketts et al., 2017).

The American system perceives its specialist supply issues as having been exhaustively studied, but this is inaccurate (Mayer and Skinner, 2004). The need for either specialists or subspecialists varies wildly by region in the
United States, and the reasons for this are unclear. Some analyses of physician graduate training statistics suggest that the American physician workforce will fall short and that the nation needs more graduates and residency positions (Jolly et al., 2013). Short-term interventions never work, however, because physician training is lengthy and cumbersome; indeed, this fact alone may make policy interventions deleterious. Population demographics do suggest that many countries, from the United States to post-Soviet countries, would be best served by considering overall physician numbers rather than responding to the community demand for specialists.

**Impact**

The increasing proportion of specialists comes at a cost to the proportion of generalists, and subspecialists grow in prevalence at a cost to the pool of specialists. Will there be a ceiling on the numbers of (sub)specialists? Likely, each society will contrive its own solution. Technologies will always advance, and societies will change, and these will limit or drive specialization, but more specialization is likely to be the prevailing trend for the next decades. The human brain arguably copes well with what can be mastered in about 3 years of training, and the expansion of medical knowledge disturbs an equilibrium that tends to move away from generalism. In budget-conscious systems, a cap on the subspecialist workforce is inevitable. An obvious “natural” ceiling for subspecialization is that the very narrow specialty may not provide enough patients to keep a physician engaged (Ricketts et al., 2016). As yet, however, this mechanism does not appear to act on a large scale anywhere.

**Prospects**

Can we remedy the side effects of growing specialization? One remedy is the development of the more collegial, team-based approach. This has long been promoted, but the system gravitates to the fragmentation of care. Time is a barrier. Another, more problematic approach is to give generalist training to subspecialist physicians (Levi, 2017). In essence, this approach is not new—all systems of subspecialist training have grown out of generalist training. However, such an approach is unlikely to be popular: subspecialists may ignore non-relevant expertise and filter out cases that disturb their homogeneous practice.

An alternative remedy has been proposed: the expert-generalist, that is, the general practitioner who has been trained in a subspecialty area
(Fins, 2015). This approach is not radically new either, and is commonplace in some countries, such as the United Kingdom and Canada.

Conclusion

It is expected that we will continue to see an increase in the subspecialization of physicians in successful healthcare systems, along with initiatives to reverse this trend. Physicians’ areas of expertise are likely to become increasingly idiosyncratic, which may have an adverse effect on healthcare quality and lead to greater inequality when it comes to accessing specialist care.