

# Hospital Performance in Brazil



# Hospital Performance in Brazil

The Search for Excellence

Gerard M. La Forgia  
Bernard F. Couttolenc



**THE WORLD BANK**  
Washington, D.C.

© 2008 The International Bank for Reconstruction and Development / The World Bank  
1818 H Street, NW  
Washington, DC 20433  
Telephone 202-473-1000  
Internet [www.worldbank.org](http://www.worldbank.org)  
E-mail [feedback@worldbank.org](mailto:feedback@worldbank.org)

All rights reserved.

1 2 3 4 :: 11 10 09 08

This volume is a product of the staff of the International Bank for Reconstruction and Development / The World Bank. The findings, interpretations, and conclusions expressed in this volume do not necessarily reflect the views of the Executive Directors of The World Bank or the governments they represent.

The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of The World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

#### **Rights and Permissions**

The material in this publication is copyrighted. Copying and/or transmitting portions or all of this work without permission may be a violation of applicable law. The International Bank for Reconstruction and Development / The World Bank encourages dissemination of its work and will normally grant permission to reproduce portions of the work promptly.

For permission to photocopy or reprint any part of this work, please send a request with complete information to the Copyright Clearance Center Inc., 222 Rosewood Drive, Danvers, MA 01923, USA; telephone: 978-750-8400; fax: 978-750-4470; Internet: [www.copyright.com](http://www.copyright.com).

All other queries on rights and licenses, including subsidiary rights, should be addressed to the Office of the Publisher, The World Bank, 1818 H Street NW, Washington, DC 20433, USA; fax: 202-522-2422; e-mail: [pubrights@worldbank.org](mailto:pubrights@worldbank.org).

ISBN: 978-0-8213-7358-3  
eISBN: 978-0-8213-7359-0  
DOI: 10.1596/978-0-8213-7358-3

*Library of Congress Cataloging-in-Publication Data* has been applied for.

# Contents

|   |       |
|---|-------|
| <i>Foreword</i>   | xiii  |
| <i>Acknowledgments</i>  | xv    |
| <i>About the Authors</i>  | xvii  |
| <i>Policy Summary</i>   | xix   |
| <i>Acronyms and Abbreviations</i>   | xliii |
| <br>  |       |
| <b>1</b> Introduction   | 1     |
| <i>Why This Book?</i>   | 2     |
| <i>Objectives, Approach, and Conceptual Framework</i>                                 | 3     |
| <i>Audience and Policy Environment</i>  | 7     |
| <i>Chapter Summaries</i>  | 8     |
| <i>Sources and Caveats</i>  | 15    |
| <i>Notes</i>  | 16    |
| <br>  |       |
| <b>2</b> The Brazilian Hospital Sector: Structure, Financing, Spending, and Outcomes  | 17    |
| <i>The Brazilian Health Sector</i>  | 17    |
| <i>The Brazilian Hospital Sector</i>  | 28    |
| <i>Hospital Finance and Spending</i>  | 36    |
| <i>Summary Assessment</i>   | 40    |
| ANNEX 2A: An Indirect Method for Estimating Hospital Spending                         | 43    |
| ANNEX 2B: Supplementary Data  | 44    |
| <i>Notes</i>  | 47    |
| <br>  |       |
| <b>3</b> Comparative Analysis of Costs and Efficiency                                 | 51    |
| <i>Hospital Costs: Measurement Challenges and Findings</i>                            | 53    |
| <i>Efficiency Analysis</i>  | 66    |
| <i>Conclusions and Recommendations</i>  | 92    |
| ANNEX 3A: Cost Analysis Methodology: The De Matos Cost Study Methodology              | 96    |
| ANNEX 3B: Supplementary Data  | 100   |
| ANNEX 3C: Average Cost and Coefficient of Variation<br>for Sample Hospital Procedures | 102   |
| ANNEX 3D: DEA Methodology   | 106   |
| ANNEX 3E: Brazilian Studies on Hospital Efficiency                                    | 112   |
| <i>Notes</i>  | 115   |
| <br>  |       |
| <b>4</b> Hospital Payment Mechanisms and Contracting Arrangements                     | 121   |
| <i>Payment Mechanisms for Hospital Care in Brazil</i>                                 | 122   |
| <i>Critical Review of PPMs in Brazil</i>  | 125   |
| <i>The Plight of Private Hospitals under the SUS</i>                                  | 132   |

vi Contents

|          |   |            |
|----------|---|------------|
|          | <i>Payment Mechanisms and Performance</i>   | 134        |
|          | <i>Hospital Contracting Arrangements in the SUS</i>   | 138        |
|          | <i>Conclusions and Recommendations</i>  | 146        |
|          | ANNEX 4A: Characteristics and Effects of Main Provider Payment Mechanisms   | 151        |
|          | ANNEX 4B: History of Government PPMs for Hospitals in Brazil  | 154        |
|          | ANNEX 4C: Provider Payment Mechanisms Used by the SUS   | 156        |
|          | ANNEX 4D: Differential Increases in Reimbursement Rates, 1995–2001  | 158        |
|          | ANNEX 4E: From the AIH to DRGs  | 159        |
|          | <i>Notes</i>  | 162        |
| <b>5</b> | <b>Organizational Arrangements and Performance of Brazilian Hospitals</b>   | <b>167</b> |
|          | <i>Organizational Arrangements: Framework and Literature</i>  | 168        |
|          | <i>Organizational Arrangements in Public Hospitals in Brazil</i>  | 171        |
|          | <i>Comparative Review of Organizational Features in Public Hospitals</i>  | 181        |
|          | <i>Private Sector Organizational Structures and Governance Arrangements</i>   | 184        |
|          | <i>Comparative Performance of Hospitals under Different Ownership and Organizational Arrangements</i>   | 191        |
|          | <i>Summary Assessment</i>   | 198        |
|          | ANNEX 5A: Organizational Arrangements in Public and Private Hospitals in Brazil: Summary  | 204        |
|          | ANNEX 5B: Matrix: Features of Organizational Arrangements in Public Hospitals in Brazil   | 208        |
|          | ANNEX 5C: Methods for Analysis of Alternative and Traditional Hospitals   | 214        |
|          | ANNEX 5D: Methods for Comparative Analysis of OSS and Direct Administration Hospitals   | 218        |
|          | ANNEX 5E: Matrix: Organizational Arrangements in European Hospitals   | 219        |
|          | <i>Notes</i>  | 221        |
| <b>6</b> | <b>Inside the Black Box: Linking Organizational Arrangements, Managerial Behaviors, and Performance in Public and Private Hospitals</b>             | <b>227</b> |
|          | <i>Management Practices in Public Hospitals</i>   | 228        |
|          | <i>Brazil's Experience with Hospital Conversion: Overcoming Human Resource and Financial Obstacles</i>  | 246        |
|          | <i>International Experience with Hospital Conversion</i>  | 253        |
|          | <i>Managerial Practices in the Private Nonprofit Sector</i>   | 257        |
|          | <i>Summary Assessment and Recommendations</i>   | 261        |
|          | ANNEX 6A: Strengths and Weaknesses of the Public Sector Regime for Procurement, Labor, and Budgeting  | 267        |
|          | ANNEX 6B: Comparison of Summary Labor Regime Characteristics for Physicians by Organizational Arrangement in Public and Private Nonprofit Hospitals | 269        |
|          | <i>Notes</i>  | 271        |
| <b>7</b> | <b>Quality of Care: Still the Forgotten Component?</b>  | <b>275</b> |
|          | <i>Quality, Quality Improvement, and Costs</i>  | 275        |
|          | <i>Quality in Brazilian Hospitals</i>   | 278        |
|          | <i>Summary Assessment</i>   | 298        |

|   |            |
|---|------------|
| ANNEX 7A: Policy and Managerial Innovations Across Medical Disciplines, 2000–2005   | 300        |
| ANNEX 7B: Process Shortcomings in Brazilian Hospitals and Possible Causes   | 301        |
| Notes   | 303        |
| <b>8 Quality Assessment and Improvement</b>   | <b>305</b> |
| <i>Hospital Accreditation and Certification in Brazil: Adoption, Challenges, and Opportunities</i>  | 305        |
| <i>Other Quality Assessment and Improvement Initiatives</i>   | 319        |
| <i>Care Coordination Across Provider Levels</i>   | 323        |
| <i>Summary Assessment and Recommendations: A Framework for Systematic Quality Improvement</i>   | 328        |
| ANNEX 8A: An Example of ONA Standards and Performance Elements: Obstetrics  | 335        |
| ANNEX 8B: Government Initiatives to Build National Capacity for Continuous Quality Improvement, 1997–2001   | 336        |
| ANNEX 8C: Setting the Policy and Institutional Framework for Systematic Quality Measurement and Improvement: Examples from the United States, the United Kingdom, and Australia | 337        |
| ANNEX 8D: Hospital Report Cards: Motivating Hospitals to Perform?   | 339        |
| ANNEX 8E: Quality-Based Purchasing in OECD Countries  | 340        |
| Notes   | 342        |
| <b>9 Conclusions and Recommendations</b>  | <b>345</b> |
| <i>Problems in Brazil's Hospital Sector</i>   | 346        |
| <i>Building on Brazilian Innovations and Experience</i>   | 351        |
| <i>What Can be Done? Key Policy Priorities</i>  | 354        |
| <i>Moving Forward with Implementation</i>   | 366        |
| ANNEX 9A: Recommended Policies and Actions  | 369        |
| Notes   | 374        |
| <i>Bibliography</i>   | 375        |
| <i>Index</i>  | 395        |
| <b>Figures</b>  |            |
| 1.1 Conceptual Framework for Hospital Performance   | 5          |
| 2.1 Main Players and Fund Flows in the Brazilian Hospital Sector  | 25         |
| 2.2 Distribution of National Health Expenditure, by Source, 2004  | 26         |
| 2.3 Trends in SUS Financing, by Source, 1985–2004   | 27         |
| 2.4 Payment and Transfer Flows for SUS Hospitals  | 29         |
| 2.5 Hospitals, by Size and Ownership, 2002  | 30         |
| 2.6 Long-Term Trends in Bed Supply, 1976–2002   | 31         |
| 2.7 Privately Financed and SUS-Financed Patients, 2002  | 34         |
| 2.8 Inpatient Care, by Clientele and Hospital Ownership, 2000–3   | 35         |
| 2.9 Sources of Hospital Care Financing, 2002  | 36         |
| 2.10 Hospital Spending, by Facility Ownership, 2002   | 37         |
| 2.11 Hospital Spending, by Line Item, 2002  | 38         |
| 2.12 SUS Hospital Spending, by Type of Care, 2002   | 39         |

|      |   |     |
|------|---|-----|
| 2B.1 | Total Hospital Costs, United States, by Type of Expense, Fiscal 2003  | 47  |
| 3.1  | Distribution of Cases and Costs, by Case-Mix Index Range, 2001  | 57  |
| 3.2  | Distribution of Procedures, by Cost Intervals, 2001   | 58  |
| 3.3  | Costs by Hospital Type, Unadjusted and Adjusted for Case Mix, 2001  | 58  |
| 3.4  | Main Sources of Variation in Hospital Costs, 2001   | 59  |
| 3.5  | Coefficient of Variation for Surgical and Clinical Cases, 2001  | 60  |
| 3.6  | Composition of Procedure Costs, by AIH Category, 2001   | 62  |
| 3.7  | Distribution of Sample Hospitals, by Size and Ownership, 2002   | 71  |
| 3.8  | Technological Complexity, by Ownership, 2002  | 71  |
| 3.9  | Hospital Admissions, by Clientele, 2002   | 72  |
| 3.10 | Total Efficiency Scores, by Hospital Size, 2002   | 75  |
| 3.11 | Efficiency Scores, by Hospital Ownership, 2002  | 75  |
| 3.12 | Efficiency Scores, by Technological Complexity, 2002  | 76  |
| 3.13 | Efficiency Scores, by Teaching Status, 2002   | 76  |
| 3.14 | Bed Turnover Rate, 2002   | 78  |
| 3.15 | Mean Occupancy Rate for SUS Acute Care Hospitals, by Ownership, 2002  | 79  |
| 3.16 | ALOS for SUS Acute Care Hospitals, by Ownership, 2002   | 80  |
| 3.17 | Ratio and Composition of Personnel per Bed, 2002  | 81  |
| 3.18 | Total Personnel per Occupied Bed Ratio, 2002  | 82  |
| 3.19 | Surgical Patients per Operating Room per Year Ratio, 2002   | 82  |
| 3.20 | Technological Complexity per Bed Ratio, by Ownership, 2002  | 83  |
| 3.21 | Quality and Efficiency in Brazilian Hospitals, 2002   | 85  |
| 3.22 | Proportion of Inpatient Conditions Sensitive to Ambulatory Care, 2002   | 88  |
| 3D.1 | Relation Between Different Types of Efficiency  | 106 |
| 3D.2 | Technical and Allocative Efficiencies   | 107 |
| 4.1  | Hospital Funding, by Payment Mechanism, 2002  | 130 |
| 4.2  | Mean Ratio, SUS Schedule/Cost, by Procedure Complexity, 2002  | 131 |
| 4.3  | Total Efficiency Scores, by PPM, 2002   | 134 |
| 4E.1 | DRG Hierarchical Structure and Classification Criteria  | 159 |
| 5.1  | Hierarchy and Flexibility Scores for Organizational Structures, Alternative and Traditional Hospitals, 2000     | 184 |
| 5.2  | Percent of Full-Time and Volunteer Managing Executives of Nonprofit Hospitals, by Facility Category, 2000       | 191 |
| 5.3  | Percent Change in Selected Mortality Rates, Alternative and Traditional Hospitals, 1998–2003                    | 194 |
| 5.4  | Percent Change in Selected Efficiency Indicators, Alternative and Traditional Hospitals, 1998–2003              | 194 |
| 5C.1 | Adjusted Costs Based on AIH Values, 2003  | 216 |
| 5C.2 | AIH Values, by Hospital Type, 2003  | 216 |
| 6.1  | Strategic and Normative Scores for Alternative and Traditional Hospital Behaviors, 2000                         | 229 |
| 6.2  | Correlation between Flexibility and Strategic Scores, Alternative and Traditional Facilities, 2000              | 230 |
| 6.3  | Delays in Purchasing Supplies and Services, as Reported by Public Hospital Managers, by Subnational Level, 2003 | 232 |
| 6.4  | Principal Personnel Problems Identified by Managers, State and Municipal Hospitals, 2003                        | 234 |
| 6.5  | Financial Information at Health Facilities, 2003  | 237 |

|     |  |     |
|-----|--|-----|
| 6.6 | Management Development Scores of Nonprofit Hospitals, by Category, 2001                  | 260 |
| 7.1 | PNASS Facility Assessment Scores, 2005–6   | 281 |
| 7.2 | Hospital Infection Control, by Hospital Complexity                                       | 294 |
| 8.1 | Building Blocks for a National System of Quality Assessment, Management, and Improvement | 329 |

## Tables

|      |   |     |
|------|---|-----|
| 2.1  | Demographic and Health Trends   | 22  |
| 2.2  | Financial and Economic Costs Related to the NCD Burden of Disease, 2005–9   | 23  |
| 2.3  | International Comparison of Health Expenditure, 2002  | 24  |
| 2.4  | International Comparison of Health Spending and Outcomes, 2002  | 24  |
| 2.5  | Hospital Ownership, 2002  | 29  |
| 2.6  | Disparities in Health Indicators in the Municipality of São Paulo, 2002–3   | 36  |
| 2.7  | SUS Hospital Expenditure, by Care Level, 2002   | 40  |
| 2.8  | Brazilian and International Patterns of Hospital Resource Allocation, 2000–2  | 42  |
| 2B.1 | Health Facilities, by Region  | 44  |
| 2B.2 | Geographic Distribution of Hospital Infrastructure  | 44  |
| 2B.3 | Regional Variation in Socioeconomic Indicators, 1998–2002   | 45  |
| 2B.4 | Hospital Financing, by Source, 2002   | 45  |
| 2B.5 | Hospital Expenditure, by Financing Source, 2002   | 46  |
| 2B.6 | SUS Expenditure, by Facility Ownership, 2002  | 47  |
| 3.1  | Total and Intra-hospital Cost Variation and Ranges for Procedures with Low and High CVs, Unadjusted for CMI, 2001   | 61  |
| 3.2  | Composition of Hospital Costs, by Ownership and Line Item, 2002   | 62  |
| 3.3  | Mean Costs in the Private Sector, 2002–4  | 64  |
| 3.4  | Summary of DEA Results  | 73  |
| 3.5  | Target Reduction in Resource Use, by Hospital Ownership, 2002   | 74  |
| 3.6  | Equipment Density, Brazil and OECD Countries, 2002  | 84  |
| 3.7  | Supply of Imaging Equipment in Relation to Need, by Region, 2002  | 84  |
| 3.8  | Summary of Benchmark Indicators, by Total Efficiency Level  | 86  |
| 3.9  | Tobit Regression Results, by Total Efficiency Scores  | 87  |
| 3.10 | Coronary Bypass Surgery, Brazil, 1995   | 90  |
| 3B.1 | Comparison of the De Matos (2002) Sample and the AIH Database   | 100 |
| 3B.2 | TOBIT Regression of Total Hospital Inefficiency, Using Governance Model 2   | 101 |
| 4.1  | Main Features of Hospital Payment Mechanisms Used in Brazil   | 123 |
| 4.2  | Efficiency and Productivity Indicators, by Payment Mechanism  | 135 |
| 4.3  | Average Cost of Typical Procedures, by PPM Group, 2001  | 136 |
| 4.4  | Quality, Payment Mechanism, and Ownership, 2002   | 138 |
| 4.5  | Performance Indicators Linked to the Variable Financing Component of the OSS Global Budget, São Paulo State, 2002–4 | 144 |
| 4.6  | Comparison of Summary Features of the OSS Contract with the Draft Contract between the SUS and Teaching Hospitals   | 145 |
| 4E.1 | Comparison of the AIH and DRG Systems   | 161 |
| 5.1  | Organizational Arrangements in Public and Private Hospitals in Brazil, 2005   | 172 |
| 5.2  | Comparison of Components of Organizational Arrangements in Brazilian Public Hospitals                               | 173 |

x Contents

|      |   |     |
|------|---|-----|
| 5.3  | Public Hospitals: Patient Mix and Sources of Financing, by Organizational Arrangement, 2002   | 182 |
| 5.4  | Private Hospitals: Patient Mix and Sources of Financing, by Organizational Arrangement and Ownership, 2002                                  | 185 |
| 5.5  | Executives Responsible for Nonprofit Hospital Management, by Hospital Size and Type, 2002   | 189 |
| 5.6  | Nonprofit Hospital Executives Reporting Decision-Making Autonomy, by Function, Hospital Size, and Affiliation, 2002                         | 190 |
| 5.7  | DEA Scores by Ownership and Organizational Arrangement, Hospitals with More Than 25 and More Than 50 Beds, 2002                             | 192 |
| 5.8  | Comparison of Selected Quality and Efficiency Indicators, Alternative and Traditional Facilities, 2003–4                                    | 193 |
| 5.9  | Compliance with Production and Performance Targets Stipulated in OSS Management Contract, 2002 and 2004                                     | 196 |
| 5.10 | Comparison of Selected Hospitals under State and Municipal Direct Management with OSS-Managed Facilities, 2003                              | 196 |
| 5.11 | Comparison of Selected Quality and Efficiency Indicators, Hospitals under OSS and Direct Administration Arrangements, São Paulo State, 2003 | 198 |
| 5C.1 | Summary Input Indicators, Traditional and Alternative Hospitals, 2004   | 215 |
| 5C.2 | Comparison of Selected Quality and Efficiency Indicators, Alternative and Traditional Teaching Hospitals, 2003                              | 217 |
| 5D.1 | Comparison of Selected Indicators, OSS and Direct Administration Hospitals, São Paulo State, 2003   | 218 |
| 6.1  | Managerial Autonomy in Public Sector Organizational Arrangements  | 244 |
| 6.2  | Municipal Hospital São José dos Campos: Comparison of Available Production, Efficiency, and Quality Indicators Before and After Conversion  | 249 |
| 6.3  | Formal Management Positions in Private Nonprofit Hospitals, by Major Function and Hospital Category, 2001                                   | 257 |
| 6.4  | Formal Managerial Instruments and Practices in Nonprofit Hospitals, by Category, 2002   | 259 |
| 7.1  | Significant Developments in Brazilian Medical Research, 2000–05   | 279 |
| 7.2  | Physical Conditions in São Paulo Hospitals, by Ownership, 2003  | 283 |
| 7.3  | Surgical Theaters with Minimum Required Equipment in São Paulo State, by Ownership, 2003  | 283 |
| 7.4  | Equipment in Intensive Care Units in São Paulo State, by Ownership, 2003  | 284 |
| 7.5  | Adequacy of Record Keeping in Hospitals in São Paulo State, by Ownership, 2003  | 284 |
| 7.6  | Qualification of SUS Hospitals in a Brazilian State for ONA Level 1 Accreditation, 2002   | 285 |
| 7.7  | Disciplinary Actions against Physicians in Brazil and the United States, 2001–5   | 290 |
| 7.8  | Presence of Standardized Practice Norms or Treatment Protocols, Maternity Services in São Paulo Hospitals, by Ownership, 1997–98            | 293 |
| 7.9  | HI Incidence in Adult ICUs, Brazil (excluding São Paulo), 2001–3  | 296 |
| 7.10 | Existence and Functioning of Mandatory Hospital Committees, São Paulo State, 2003   | 297 |
| 8.1  | Comparison of the Three Main Hospital Accreditation Systems   | 309 |
| 8.2  | Number of Accredited Hospitals, by Type and Location, 2003  | 310 |
| 8.3  | Costs and Investments Involved in Achieving ONA Level 1, 2002–4   | 311 |

|     |  |     |
|-----|--|-----|
| 8.4 | Hospital Management Tools Used to Gain Accreditation, with Effectiveness Ratings, 2002–4                       | 314 |
| 8.5 | Efficiency and Quality in Hospitals with and without the CQH Seal of Quality, Selected Indicators, 1999–2003   | 316 |
| 8.6 | PGQ Results at Santa Casa Hospital   | 318 |
| 8.7 | Minas Gerais State: Spending on Admissions for Conditions Treatable in Ambulatory Care, by Hospital Size, 2002 | 328 |

## Boxes

|      |   |     |
|------|---|-----|
| 2.1  | A Brief History of Hospitals in Brazil  | 32  |
| 3.1  | Types of Efficiency   | 52  |
| 3.2  | Hospital Cost Structures in Brazil and Canada   | 63  |
| 3.3  | Advantages and Limitations of Data Envelopment Analysis   | 66  |
| 3.4  | International Experience in Health System Evaluation and Benchmarking   | 69  |
| 3.5  | Making Rational Hospital Investment Decisions   | 93  |
| 3D.1 | Measuring Hospital Complexity, Case Mix, and Quality from a Facility Survey   | 111 |
| 4.1  | The AIH and the DRG: Similarities and Differences   | 125 |
| 4.2  | Two Case Studies: Outsourcing Medical Care in the SUS   | 141 |
| 4E.1 | Steps in Designing a DRG System   | 162 |
| 5.1  | Achieving Labor Flexibility within Public Direct Administration: The Pro-Heart Foundation   | 177 |
| 5.2  | Major Characteristics of Hospitals under Health Social Organization (OSS) Arrangements, São Paulo State, 2004                                   | 179 |
| 5.3  | Governance and Management for Hospitals   | 188 |
| 5.4  | Toward Greater Independence of Public Hospitals: Lessons from Europe  | 199 |
| 5.5  | Managerial Modernization of Nonprofit Hospitals: Lessons from the United States   | 203 |
| 6.1  | Organizational Forms and Health Worker Behaviors  | 233 |
| 6.2  | Characteristics of a Well-Run Planning and Budgeting System   | 237 |
| 6.3  | Managers' Assessment of Managerial Processes and Practices in Hospitals under Direct Administration and OSS Arrangements, São Paulo State, 2003 | 239 |
| 6.4  | The Politics of OS Implementation in the Health Sector  | 246 |
| 6.5  | Hospital Conversion in Brazil: Legal Constraints and Opportunities  | 252 |
| 7.1  | Major Dimensions of Quality Health Care   | 276 |
| 7.2  | What Is Happening to the Quality of Medical Education in Brazil?  | 288 |
| 7.3  | Problems with Quality and Possible Causes: Insights from a Literature Review  | 291 |
| 7.4  | Bad Processes as a First-Order Problem: Interaction between Structure and Practice in Neonatal Wards  | 295 |
| 8.1  | Accreditation, Licensure, and Certification   | 306 |
| 8.2  | Governance Arrangements in the ONA  | 307 |
| 8.3  | Benchmarking  | 320 |
| 8.4  | What Is an Organized Regional Network?  | 324 |
| 9.1  | Building on International Innovations and Experience  | 351 |
| 9.2  | Recentralization in Scandinavia? Achieving Coordination across Political Jurisdictions  | 360 |



# Foreword

**H**ealth care poses a conundrum for all countries, and hospitals are the most important, most critical, and most costly components of any health care system. In low- and middle-income countries, hospitals are the central focus of all health care. Even in the poorest countries, hospitals provide the training ground, the referral, and the benchmark for the health system at large. In these countries, hospitals are the engine behind sound health care. Yet in much of the developing world, hospitals have been systematically neglected.

The range of services provided by hospitals, from high-tech clinical care to complicated surgeries, from intricate accounting to basic hotel services, make their management costly and complex and their oversight and control profoundly challenging. Gaining control of such complicated entities requires depth and breadth of expertise to understand all the components of a hospital and effectively integrate them, while tracking performance and use of resources requires reliable, updated information—all of which can be difficult to come by in the developing world. As a result, in countries where hospitals are central and a significant proportion of all health spending goes to running them, hospitals can become expensive “black boxes” that eat up resources while providing an uneven and unmeasured set of outputs.

This book combines a comprehensive overview of the Brazilian hospital sector with in-depth analyses of the key elements of interest in promoting and ensuring excellence in hospital performance. It does so in an accessible manner and within the organizational and financial context of Brazil. Thus, the book can offer specific recommendations that go to the heart of the problem, as well as suggest what kinds of approaches work in that context. The recommendations themselves are based on what works in Brazil while drawing on international experiences relevant to the Brazilian context to broaden the policy options. But the authors go a step further by providing recommendations on implementation, specifically highlighting the need to strengthen governance arrangements, improve accountability, and sharpen resource management.

One of the major challenges of Brazilian health care is making sense of the highly creative but random experiments in health care management that proliferate across Brazil. Having been ahead of much of the world in financing hospitals by a form of diagnostic related groups (a fixed amount of reimbursement per diagnosis), the system failed to adequately evaluate the effectiveness of the implementation or adapt to a rapidly changing environment. As a result the full benefits of such ideas have not been realized.

Similarly, Brazil has pioneered innovative ways to hold public hospitals accountable. An important example is the São Paulo experiment in making public hospitals more autonomous and holding directors accountable for good performance, offering both incentives for

good performance and flexibility in implementation. This represents an important breakthrough, not only because of its creative framework, but also because it was enforced—a critical factor, since many hospitals making similar experiments are restricted in their ability to make decisions, which lessens their autonomy. This book has brought together a wealth of experience and evidence that will inform federal, state, and municipal governments as well as private hospitals about successful efforts, such as in São Paulo, in raising hospital efficiency and quality.

This book offers important guidance for interested policy makers in Brazil, but it has lessons for other middle-income countries facing similar problems in assessing their hospitals and finding effective and creative solutions to difficult problems. The linkages between organization arrangements, management and performance are universal problems, and new ideas may be transferable if they are carefully evaluated and understood. Indeed, the OECD countries continue to search for improvements. The single biggest challenge across the richest countries is how to maintain quality and contain costs at the same time.

The ideas presented here provide valuable suggestions to the twin problems of quality and savings. It should be read by policy makers and hospital administrators and planners in both the public and private sectors. It is a guide for better health care, something we can all agree is a global good and a public priority.

Maureen Lewis  
Chief Economist, Human Development  
World Bank

# Acknowledgments

This volume was commissioned by the World Bank and received additional financial support from the U.K. Department for International Development (DfID)/Brazil. The authors are grateful for this support. Gerard M. La Forgia, Human Development Sector Management Unit, Latin American and the Caribbean Region, World Bank, conceptualized and coordinated the work. Collaborators in Brazil included the Ministry of Health (Ministério da Saúde, MS), the National Agency for Sanitary Surveillance (Agência Nacional de Vigilância Sanitária, ANVISA), the Fundação Oswaldo Cruz (FIOCRUZ), and the National Accreditation Organization (Organização Nacional de Acreditação, ONA). The volume draws heavily on background papers prepared for the World Bank and its partners by the following principal investigators:

Nilson Costa, Escola Nacional de Saúde Pública (ENSP)/FIOCRUZ

Bernard Couttolenc, Interhealth Ltd, and Universidade de São Paulo (USP)

Afonso José De Matos, Planejamento e Organização de Instituições de Saúde (PLANISA)

Leni Dias, Planejamento e Organização de Instituições de Saúde (PLANISA)

Flavia Freitas, ANVISA

Fábio Gastal, ONA

Marcos Kisil, USP

Adélia Marçal dos Santos, ANVISA

Jose Mendes R., ENSP/FIOCRUZ

Eugenio V. Mendes, independent consultant

Luis Fernando Rolim Sampaio, independent consultant

April Harding was a coauthor of the concluding chapter and also provided valuable comments on other chapters. James Allen assisted in the drafting of chapter 7. Maureen Lewis, Loraine Hawkins, André Medici, and Toomas Palu provided very helpful peer review comments. We also would like to thank Kathleen A. Lynch for her rigorous editing and Marize Fatima de Santos, Carla Zardo, and Adriana Paula Sales Correa for assistance in formatting the volume.



## About the Authors

**Gerard (Jerry) M. La Forgia** is a lead health specialist at the World Bank, currently working out of São Paulo, Brazil. He has worked in Argentina, Colombia, Ecuador, El Salvador, Guatemala, India, México, Nicaragua, Panamá, and Uruguay. His recent work includes an edited World Bank Working Paper, *Health System Innovations in Central America: Lessons and Impact of New Approaches* (2005) and an Economic and Sector Report (no. 36601) on the governance and quality of spending in Brazil's Unified Health System (2007). He formerly was a research associate at the Urban Institute and a senior health specialist at the Inter-American Development Bank. He holds a Sc.D. in health service administration from the Graduate School of Public Health, University of Pittsburgh (U.S.).

**Dr. Bernard Couttolenc** holds a PhD in Health Economics from the Johns Hopkins University (Baltimore, U.S.) and a Master's degree in Health Care Management from Fundação Getúlio Vargas (Sao Paulo, Brazil). He has accumulated over 20 years of experience in consulting in health economics, health care management and planning, economic evaluation, and health sector reform. He has worked extensively in developing countries, including Brazil, Angola, Dominican Republic, Lao PDR, and Belize. He is a professor and researcher in health economics at the University of São Paulo, Brazil.



# Policy Summary

Hospitals are at the center of the health care universe in Brazil and are critical to the health of the Brazilian people. When ill, many Brazilians go straight to the hospital, for want of a family doctor or primary care network. Hospitals are a critical part of the government's budget, absorbing nearly 70 percent of public spending on health. Hospitals influence the ebb and flow of politicians' careers, when hospital mishaps hit the headlines or the limelight falls on high-performing facilities. Hospitals are at the forefront of policy discussions in Brazil. These discussions reflect hospitals' promise as centers of technological innovation and medical advances, as well as widespread concern about their cost and quality. Brazilian hospitals are thus important to many people for many different reasons. What makes hospitals important is easy to understand. What makes hospitals deliver quality care efficiently—or not—is much harder to grasp.

## Challenges to Brazil's Hospital System

Brazil's hospital system is pluralistic. An array of financial, ownership, and organizational arrangements is found in both the public and private sectors, and there is a long tradition of public financing of private facilities. The system is also highly stratified. A few hospitals are world-class centers of excellence, and they serve the well-off minority. But most hospitals—the ones serving Brazilians who cannot pay out of pocket or afford private insurance—are best described as substandard. These hospitals, many of them dependent on public financing, deliver inefficient, poor-quality care, judging from the available data.

Although hospitals are the de facto health care delivery system in Brazil, until recently they have received scant attention as health care organizations from either policy makers or researchers. Since the mid-1980s, the development of health policy in Brazil has focused on decentralizing service delivery, reducing financial disparities, and achieving universal access to basic care. Issues of hospital performance, however defined, have been left mainly to the individual facility.

In 2004 a publication by the Ministry of Health (Ministério da Saúde, MS) on hospital reform sounded the call for change. It was the first MS document to focus entirely on the hospital sector, and it opened a national discussion on hospital problems, performance, and potential. The broad policy directions outlined there are aligned with the policy recommendations contained in this book. The MS called on research and hospital communities to collaborate with it to strengthen analysis of hospital performance and help develop a vision and strategy for hospital reform. It is in this spirit of collaboration that this book has been written.

Brazil's challenge is not unique. Implementing hospital reform policies is notoriously difficult, and it is more problematic still when hospital ownership, governance, and payment mechanisms take as many different forms as they do in a federal state like Brazil. Yet

the pluralistic nature of these arrangements is also a strength of the Brazilian hospital sector. As is shown throughout this volume, Brazil does not lack approaches, ideas, innovations, and initiatives for addressing the shortcomings of underperforming facilities. The foundations for change aimed at raising performance are present throughout the country's hospital system. Whether these ideas and innovations will be generalized and woven into the fabric of the system is the question.

Can Brazil improve the performance of its hospitals? The evidence presented in this volume suggests that the answer is, yes. However, it will take strong leadership, coordinated efforts by federal, state, and municipal governments, direct engagement with the private health sector, and systematic and continuous vision, policies, and actions. Such enabling factors have been generally weak or absent in the Brazilian health system. Promising initiatives have often been gutted or scrapped after changes of government.

## The Main Policy Messages

This book emphasizes the following policy messages that are important for improving hospital care in Brazil.

- Government needs to enhance the autonomy and accountability of public hospitals.
- Government and private payers of hospital care need to wield their funding power so as to influence hospital behavior.
- Coordination among hospitals and between hospitals and other types of providers needs to be improved.
- The quality of all hospitals must be raised to acceptable standards.
- The absence of reliable information about the quality, efficiency, and costs of hospital services underlies all issues and hampers any effort to improve performance.

### Enhancing the Autonomy and Accountability of Public Hospitals

Any efforts to improve the quality and efficiency of public hospitals will rely on increasing the motivation and proactivity of hospital managers. Under current conditions, even the best-motivated and trained managers will have a tough time improving performance. Too many key decisions are made outside the hospital, and rigid constraints on management undermine efforts to increase accountability. To bring autonomy to the great majority of public hospitals, it will be necessary to develop strategies for converting hospitals to autonomous organizational arrangements and to test those strategies against Brazilian and international experience. Although autonomy is a necessary ingredient in reform, it alone cannot drive performance in public hospitals. Also needed are service contracts, contract enforcement, performance-based financing, flexible human resource management, and a robust information environment.

### Wielding Funding Power so as to Influence Hospital Behavior

Government and private payers of hospital care are not using funding to its fullest potential to influence hospital behavior. In some cases, funding arrangements hamper performance. Most funding is not linked to performance and gives no incentive for cost consciousness.

Although no payment system is perfect, many countries have linked payments to treatment costs on the basis of diagnosis, adjusted for severity. In the United States the diagnosis-related group (DRG) payment system has been found to improve efficiency and control costs.

Brazil's Authorization for Hospitalization (Autorização de Internação Hospitalar, AIH) mechanism can serve as a foundation for a DRG-based hospital payment system. In moving toward DRGs, the first order of business is to align AIH rates with costs. Developing a robust DRG-based payment mechanism would also reduce distortions arising from the fragmentation of payment systems, if private and public payers switched to the same payment basis. But accountability for hospital performance requires more than performance-based funding (or autonomy). Contracting arrangements are needed to define the content of funding arrangements and thereby link funding to performance. Moreover, successful hospital contracting requires contract management and enforcement. Global budgeting efforts combined with contracting are under way in a handful of states and municipalities. These promising initiatives have been shown to raise performance.

### **Improving Coordination among All Providers**

Coordination—among hospitals and between hospitals and other providers—is critical to improving quality. It will also raise efficiency and broaden equity by rationalizing the supply of hospital beds and expensive medical technologies. Coordination is handicapped in Brazil by the decision-making and financial independence granted to states and municipalities, the absence of ties with private providers outside the Unified Health System (Sistema Único de Saúde, SUS), fragile public administration, and the general ineffectiveness of coordinating instruments such as Integrated and Negotiated Programming (Programação Pactuada e Integrada (PPI)). Considering the monetary and quality costs of this fragmentation, Brazil would benefit greatly by applying mechanisms to enhance coordination related to hospital services. Coordination can be pursued by setting up funding-based contractual arrangements, by pooling funding and creating regional command structures with decision-making authority over resource allocation across municipalities, or by tightening regulations governing relations among providers. Some states and municipal consortia are already experimenting with one or more of these mechanisms, and these experiences can provide the basis for effective coordination. To reduce duplication and waste of infrastructure and equipment, two final elements are needed, a policy-based investment strategy, and a system for vigorous technology assessment and allocation.

### **Raising Service Quality to Acceptable Standards in All Hospitals**

Government is responsible for ensuring quality in all hospitals, public and private alike. Quality standards already exist, in the form of licensure requirements and government-sanctioned accreditation systems, but their implementation has been meager. To promote compliance, the SUS and private health plans could institute time-bound funding conditionality and link financing to licensure and accreditation, following the example of a number of countries that use the power of the purse in this way.

Achieving standards, however, does not in itself guarantee quality. Many critical actions needed to improve the quality of hospital services take place at the hospital level under the leadership of hospital management. They include the establishment of continuous quality

improvement programs that involve performance assessments, effective teamwork, use of information technologies, incorporation of evidence into practice, development and use of clinical guidelines, and coordination of care within the hospitals, as well as with providers at other levels. Hospitals acting alone may not get far with these elements. Continuous quality improvement requires a systematic approach backed by a solid national support system that includes policies and strategies for enhancing quality; support for systematic research on patient satisfaction and evaluation of clinical practices; and the creation through public-private partnerships of institutions for measuring, monitoring, and benchmarking quality and for providing guidance and support to individual hospitals. Finally, there is a need to address the low quality of some medical schools and to strengthen institutional capacity to address medical malpractice.

### **Improving the Reliability of Basic Managerial Information**

The absence of reliable information about the quality, efficiency, and costs of hospital services underlies all issues and hampers any effort to improve performance. Without this information, policy makers, as well as public and private payers, are flying blind. This situation is untenable. There is an urgent need to develop and install standardized systems to measure costs and quality. These systems should focus on essential information for decision making and should be designed with the needs of the local manager in mind. At the same time, the systems should be based on standards to allow cross-hospital and cross-state benchmarking.

The rest of this summary elaborates on these five main messages. The evidence and analysis that support the messages and the diagnosis of the underlying problems are described in this volume. The close linkages among the themes (highlighted in chapter 9) make some overlap unavoidable. Because of these linkages, a specific policy may not work as intended on its own.

Analyzing or evaluating hospitals, especially public hospitals, is difficult. The literature gives little guidance on appropriate methodologies. What studies do exist usually come from the United States and a handful of European countries, and the findings may not be applicable to low- and middle-income countries with fewer health resources. The findings and recommendations in this volume are based on available evidence in Brazil, drawn from a mix of sources. Limitations related to the availability and quality of data and the use of small sample sizes restricted the breadth and depth of some of the analyses reported in this volume.

## **Problems in Brazil's Hospital Sector and Action Recommendations**

This section examines the main problems in Brazil's hospital sector. For each, short- and medium-term actions to remedy the shortcomings are suggested.

### **Rigid and Unaccountable Hospital Governance: Hospital Types and Performance**

Incentives given by payment mechanisms, contracts, and regulations clearly influence provider behavior. But hospitals do not all respond the same way to similar incentives. A hospital's response to incentives depends on its organizational form. The evidence presented

in this volume indicates that organizational arrangements make a difference to hospital performance.

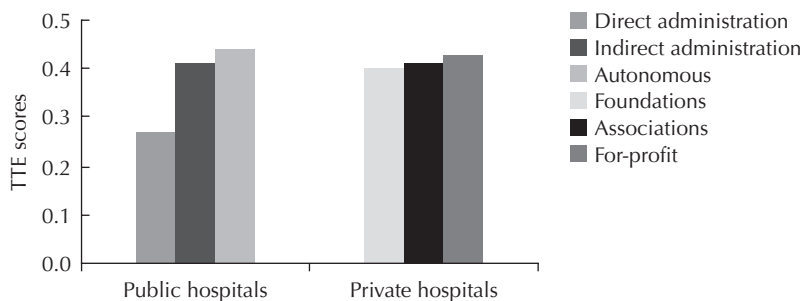
A range of distinct hospital types has emerged in the past 50 years in Brazil, particularly in the public and nonprofit subsectors. The direct administration form dominates the organizational landscape in the public sector, representing over 97 percent of all public hospitals. These are the most poorly performing hospitals across the board. Some public hospitals, operating under autonomous organizational models, display higher production, efficiency, and quality than direct administration facilities; indeed, their efficiency rivals that of for-profit private hospitals (figure 1). They also appear to achieve greater gains in efficiency and quality over time than do nonautonomous facilities.

Some characteristics of the organizational forms involved suggest reasons why this should be so. Hospitals under direct administration display a rigidity that is inherently at odds with modern hospital management. Given the existing organizational rules, even motivated and committed managers can make only limited improvements. Hospital managers who do not have the authority to manage staff, reorganize departments, or reconfigure services, are simply not able to make the changes that could substantially improve their operations. Many managerial functions are rule-based and are centralized in higher administrative levels within municipal and state health, finance, and administrative secretariats. In addition to being far removed from the front line of service provision, most central-level managers lack the know-how, motivation, or information to manage hospitals. Excessive centralization of managerial functions, combined with rigid civil service rules, political interference, and lack of information, spawn an organizational environment that deprives facility managers of the means to manage and improve performance.

Deficient governance practices and organizational arrangements contribute to low performance in many private hospitals, as well. But the nature of these hospitals' problems is qualitatively different from those of public facilities. Because of lack of information, the relation between performance and governance arrangements in private facilities remains unknown, but it is probable that overlapping and informal governance and management

**FIGURE 1**  
**DEA Efficiency Scores, by Organizational Arrangement and Ownership, Hospitals with More Than 50 Beds, 2002**

(N = 248)



Source: Table 5.7, chapter 5 in this volume.

functions (as seen in table 1), together with lax monitoring and a weak information environment, may compromise performance. This is especially true in the small, nonprofit facilities that account for most SUS-financed private hospitals. The weakness of contract pressures and the lack of competition mean that the hospitals have few incentives to perform and therefore to address organizational shortcomings. An undetermined number of hospitals appear to serve the interests of their medical professionals rather than the broader health system.

### Policy Priority: Enhance Hospital Autonomy and Accountability

- Develop a strategy, regulatory framework, and implementation plan to convert direct and indirect administration facilities to alternative organizational arrangements that offer autonomous authority and flexible human resource management.
- Formulate an investment policy that promotes the application of autonomous organizational arrangements in any new public hospital.
- Establish public-private mechanisms to strengthen governance arrangements in private hospitals under contract with the SUS, including regulatory reform and enforcement, strengthening of contracting, and stimulation of competition.

The most promising arrangement for public hospitals is a model based on experience with health social organizations (*organizações sociais em saúde*, OSSs) in São Paulo state. As table 2 shows, OSSs have proved more productive and efficient providers of higher quality care than comparison facilities under direct administration, and they also give better value for money. The elements of the OSS model therefore merit policy makers' attention. The findings suggest that OSSs benefit from an accountability arrangement that includes five key elements: autonomy, flexible human resource management, strategic purchasing, contract enforcement, and a robust information environment. These elements should be building blocks in any reform strategy for the Brazilian hospital sector. A recent MS proposal (2007) to create a new institutional form for public hospitals, state foundations (*fundações estaduais*), contains all these elements and represents a promising step forward.

**TABLE 1**  
**Executives Responsible for Nonprofit Hospital Management, by Hospital Size and Type, 2002**  
(percent)

| Type of executive                              | Individual facilities |                | Facilities operated by conglomerates (N = 80) <sup>a</sup> |
|--|-----------------------|----------------|--|
|  | Small (N = 69)        | Large (N = 15) |  |
| Hospital-based executive                       | 49                    | 33             | 99   |
| PCO statutory executive                        | 22                    | 33             | 0  |
| PCO executive director and statutory executive | 29                    | 33             | 0  |
| Total  | 100                   | 100            | 100  |

Source: Barbosa et al. 2002.

Note: Small: mean = 67. Large: average = 576 beds. Conglomerates: average = 136 beds. PCO, philanthropic or charitable organization. Columns may not sum to 100 percent because of rounding.

a. Eleven conglomerates with a total of 80 hospitals. Data were unavailable for one facility.

**TABLE 2**  
**Comparison of Selected Quality and Efficiency Indicators, Hospitals under OSS and Direct Administration Arrangements, São Paulo State, 2003**

| <i>Indicator</i>   | <i>OSS hospitals (N = 12)</i> |              | <i>Direct administration hospitals (N = 12)<sup>a</sup></i> |              |
|--|-------------------------------|--------------|---|--------------|
|  | <i>Mean</i>                   | <i>Range</i> | <i>Mean</i>   | <i>Range</i> |
| <i>Quality (mortality rate)</i>  |                               |              |   |              |
| General <sup>b</sup>   | 3.3                           | 2.7–5.8      | 5.3   | 3.2–9.1      |
| Surgical <sup>b</sup>  | 2.6                           | 1.7–4.8      | 3.6   | 0.9–10.3     |
| Clinical   | 11.6                          | 9.5–14.0     | 12.0  | 10.7–14.1    |
| Pediatric  | 2.8                           | 1.7–4.2      | 2.6   | 1.1–4.9      |
| <i>Allocative efficiency (hours: full-time equivalent)<sup>c</sup></i> |                               |              |   |              |
| Physician <sup>d</sup>   | 143                           | 95–273       | 203   | 90–339       |
| Nurse  | 54                            | 24–100       | 41  | 7–64         |
| Auxiliary  | 234                           | 78–385       | 257   | 89–391       |
| <i>Efficiency: descriptive statistics</i>                              |                               |              |   |              |
| Bed turnover rate <sup>e</sup>   | 5.2                           | 3.7–7.6      | 3.3   | 1.9–4.8      |
| Bed substitution rate <sup>e</sup>                                     | 1.2                           | 0.1–3.8      | 3.9   | 1.7–9.7      |
| Bed occupancy rate <sup>d</sup>  | 81                            | 52–99        | 63  | 38–76        |
| Average length of stay (ALOS) <sup>d</sup>                             | 4.2                           | 3.8–5.6      | 5.4   | 4.1–8.1      |
| ALOS surgery <sup>b</sup>  | 4.8                           | 3.0–5.7      | 5.9   | 2.3–7.7      |
| <i>Technical efficiency (discharges/bed)</i>                           |                               |              |   |              |
| General <sup>e</sup>   | 60                            | 43–94        | 46  | 32–73        |
| Surgical <sup>d</sup>  | 71                            | 24–103       | 44  | 27–84        |
| Clinical <sup>d</sup>  | 86                            | 25–198       | 53  | 17–101       |
| GYN/OB(N = 20) <sup>b</sup>  | 96                            | 34–169       | 58  | 24–80        |
| <i>Annual spending (R\$ thousands)</i>                                 |                               |              |   |              |
| Expenditures/bed   | 177                           | 116–279      | 187   | 149–227      |
| Expenditures/discharge <sup>d</sup>                                    | 2.9                           | 2.3–3.9      | 4.3   | 2.9–7.0      |

Source: Costa and Mendes 2005.

a. For allocative efficiency and descriptive statistics, N = 10.

b.  $p < .10$ .

c. Full time equivalent = total hours/40.

d.  $p < .05$ . e.  $p < .01$ .

Autonomy appears to be the critical feature of the organizational models. Policies to enhance the autonomy of public hospital management are a prerequisite for addressing most of the performance issues in public hospitals discussed in this volume. Many of the current policy discussions focus on expanding resources and improving skills. None of these changes will have the desired effect, however, if hospital managers are not given enough flexibility to make needed changes. Various implementation strategies can be explored; some countries have implemented sectorwide organizational changes in public hospital governance, while others have phased in governance reforms.

Mandating organizational changes in new hospitals—as in the case of the OSSs—is an important first step, but it will have no effect on the hospitals where most patients are treated. The recent MS proposal to convert public hospitals into independent state foundations incorporated under private law would establish a robust policy and legal framework for autonomous management of public facilities. In any event, it seems clear that an implementation and transition strategy must be developed for existing hospitals. Actions are needed to develop hospital conversion strategies and test them against Brazilian and international experience. Because of the thorny human resource and financial issues involved, conversion will require leadership and a strong policy push. Tinkering at the margins is unlikely to improve organizational arrangements.

Weak governance is not limited to the public sector. Although private hospitals do not suffer from the rigidities and lack of decision-making authority seen in public facilities, informality and the absence of clear lines of authority contribute to deficiencies in their performance. Action is needed to strengthen regulations specifying governance arrangements and functions in nonprofit hospitals and to enforce these provisions. Additional measures include strengthening contracting and promoting competition for public contracts. These measures will increase pressures to perform, which would stimulate efforts to correct governance shortcomings. In some cases the governance arrangement will require modification so that the facility can be held accountable for pursuing health system objectives.

### **Passive, Distorted, and Diluted Funding: Flaws in the Payment Mechanisms Used in Brazil**

The term *provider payment mechanism* (PPM) refers to the way in which purchasers compensate health care providers for their services. Through incentives, PPMs shape hospital behaviors and therefore their performance. PPMs are powerful levers that purchasers, including government and private insurers, can use to make providers responsive to policies and priorities such as improving quality, raising efficiency, expanding access, and containing costs.

In Brazil payment mechanisms are little used as policy instruments for supporting policy priorities and stimulating performance. Most PPMs used in Brazil are deficient; they are not linked to costs, they are unrelated to diagnoses, and they are not adjusted for case severity.

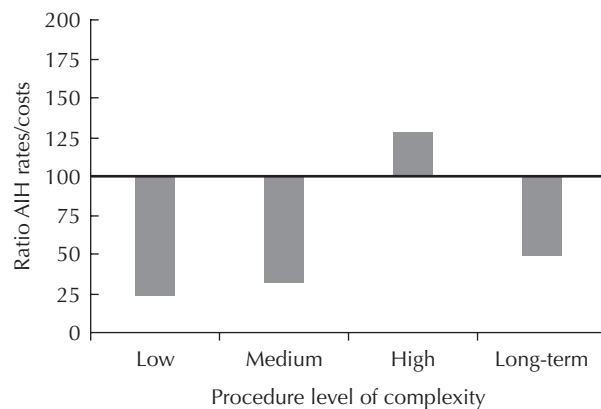
Some payment mechanisms such as line-item budgets (the predominant form in public hospitals) contribute to inefficiencies and higher costs. Line-item budget allocations are based on historical input and spending patterns, with no rewards for quality or cost consciousness. Budgets provide few incentives to raise productivity, adopt managerial innovations, stimulate managerial flexibility, decrease excess capacity, or establish a sound information environment. Because of the limitations of this mechanism, most high-income countries that once used line-item budgets to pay hospitals are replacing them with more sophisticated systems that contain vigorous performance incentives.

In contrast, in recent years the SUS has expanded line-item budgets as the main payment mechanism for public hospitals. This step responds to the increased use by the federal government of direct transfers (*fundo-a-fundo*) to states and municipalities, which, in turn, convert these transfers into line-item budgets. Since the transfers themselves are unlinked to performance, subnational entities have few incentives to develop and implement performance-enhancing PPMs for hospitals.

The AIH payment mechanism, consisting of a predefined fee schedule linked to outputs (in the form of procedures), is used to pay private hospitals under contract with the SUS and in principle could promote more efficient resource use. But as currently applied, it contributes only modestly to cost control because the payment rates are seriously distorted. For most inpatient care, AIH payment rates are much below cost, whereas they are substantially over cost for a few treatments and procedures, mostly high-complexity care (see figure 2). The result is overemphasis on a few “profitable” services and not enough provision of money-losing but high-volume services. This imbalance seriously undermines patient access to needed services and cost-effective use of public resources. It is also a major driver of the well-publicized financial crisis in the nonprofit hospital sector, which is heavily dependent on SUS funding. Moreover, it may drive hospitals to provide overlapping services or submit fraudulent coding to raise revenues; to specialize in lucrative treatments; and to seek (and depend on) lump-sum bailouts from local governments to make ends meet.

SUS-imposed expenditure ceilings set an overall limit on spending but do not drive behaviors that result in efficient resource use at the facility level. The ceilings themselves are based on historical trends and therefore perpetuate inefficiencies that have become embedded over the years; in addition, they are adjusted depending on government tax revenues during the fiscal year. Moreover, hospitals often reduce service supply near the end of the fiscal year as they approach their assigned ceilings and then exert political pressure for additional budgetary transfers, or they may reduce planned outlays for equipment maintenance and material inputs. In general, financial planning and management, along with efforts to improve the efficiency of resource use so as to stay within expenditure limits, are rare. The passive and nonstrategic utilization of SUS funds for hospital care is striking because in pluralistic hospital systems public funding is usually the most influential instrument for pursuing efficiency and quality.

**FIGURE 2**  
**Mean Ratio, SUS Scheduled Payments to Cost by Complexity of Procedure, 2002**  
 (N = 107)



Source: Dias, Couttolenc, and de Matos 2004.

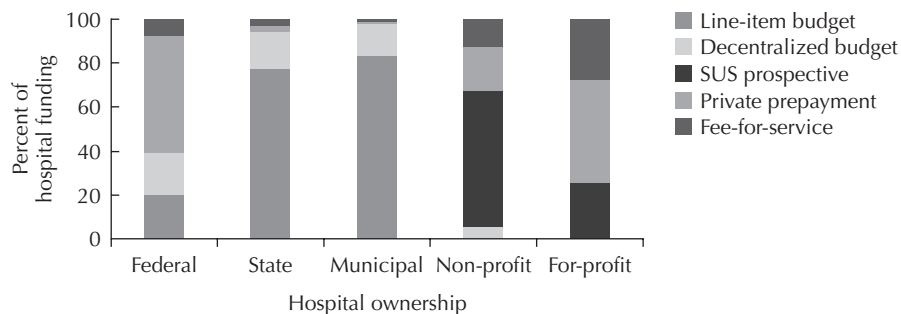
Payment systems in the private sector also encourage providers to increase production of services, sometimes leading to oversupply of the most lucrative services and to unnecessary, and higher costs. Most private insurers and health plans pay for hospital care through a pre-defined fee schedule negotiated between the plans and hospitals. The payment systems based on fee schedules that are used by private insurers are associated with more efficient use of resources, but this may be because private facilities usually treat less complex and less severe cases than do many public facilities and enjoy far more managerial autonomy. Rate setting has little to do with costs or with resource use, partly because of the absence of reliable information on costs and a lack of cost consciousness among providers and insurers alike. As in the case of the SUS, discrepancies between rates and costs in the private sector have not been systematically analyzed, but the disputes over rates between insurers and providers (e.g., hospitals and physicians) that are often aired in the press suggest that fee schedules are not aligned with costs. The impact of discounted fee schedules on cost containment appears modest at best because private facilities, like SUS-funded hospitals, have an incentive to overprovide better-reimbursed treatments.

The multiple payment systems confronting the typical hospital manager dilutes the impact of the incentives in any single mechanism (see figure 3). Incentives for improving efficiency and quality or controlling costs in one PPM may be offset by disincentives in another. Discrepancies in payment rates may contribute to systemwide distortions. For example, lower-rate payers such as the SUS may drive hospitals to skimp on quality, shift costs to higher-rate payers, or transfer complex cases to public facilities that do not depend on production-based payment but are bound to treat everyone. Increasing numbers of private hospitals cater to patients covered by private health plans, which pay higher rates than the SUS and cover higher-income patients. This contributes to stratification in the hospital system.

The financial relationship between payers and hospitals often involves contracting. Contracts are part of many payment mechanisms because they specify the terms and conditions of the payment. Although the SUS has a long history of contracting private hospitals to deliver hospital services, it applies a passive instrument, the *convenio*, which does not specify functions, define outputs, or indicate performance targets in return for funding. Convenios

**FIGURE 3**  
**Hospital Funding, by Payment Mechanism, 2002**

(N = 428)



Source: Couttolenc et al. 2004.

are essentially legal instruments for distributing budget to private providers traditionally linked to the public system. The *convenio*, as a contracting tool, is devoid of accountability and is not used to create production or efficiency incentives.

### What Can Be Done?

#### *Enhance Leverage of Funding Flows to Increase Efficiency, Cost Consciousness, and Quality*

- Enhance leverage of public funding (SUS) flows by
  1. Implementing alternative payment systems, such as global budgets linked to performance, for public hospitals to replace line-item budgets and build in strong incentives for quality and efficiency enhancement
  2. Improving contractual arrangements by applying instruments that specify volume and type of services and priority targets, linking a proportion of payment to performance, and enforcing compliance with agreed targets
  3. Upgrading the AIH/SIA system, aligning payment with costs, and gradually converting to a DRG-like system.<sup>1</sup>
- Initiate regulatory reform that will improve private funding flows (to constrain cost shifting and enhance cost containment and fiscal discipline), foster payment system consistency, and generate incentives for efficiency for hospitals and managers.]

Use of a global budgeting system by all public hospitals would impel improvements in performance. A few states and municipalities have already introduced global budgeting systems that feature resource ceilings and link a portion of payment to performance. Equally important, these funding arrangements leave hospital managers sufficient flexibility to allocate funding across expenditure categories in ways that will improve productivity and quality. The available evidence suggests that when combined with measures such as greater autonomy and strategic contracting (discussed below), global budgets would improve accountability and performance.

True accountability for hospitals requires more than governance arrangements and performance-based funding. It requires clear delineation of the roles and responsibilities of public hospitals and their managers so that what must be done to meet those obligations is clearly understood. Straightforward delineation of performance expectations makes it easier to identify and correct shortcomings.

Clarity can best be achieved through strong contractual arrangements that define the content of funding agreements. Such arrangements with SUS-funded public and private hospitals should establish clear performance-related goals, including specific outputs and results, as well as the resources for achieving them. Contracts should also specify the portion of funding linked to the achievement of the goals, as suggested above.

Changing the content of the funding agreements between the SUS and hospitals is necessary but not sufficient: the process of the relationship must also change. As demonstrated by experience with the OSSs and in many member countries of the Organisation for International Co-operation and Development (OECD), the funder's capacity to manage the contracting process and to monitor and enforce contracts, once established, contributes critically to outcomes. Most successful hospital contracting initiatives have included a contract management capacity-building program in the initial phase.

The contractual relationship must also minimize opportunities for bias in public contracting with public facilities. In organizational arrangements such as direct administration, facilities are essentially budgetary arms of the funding agency, and this creates a conflict of interest. Some countries have achieved an “arm’s-length” relationship by implementing reforms that separate the public payer from providers. In others, where a number of public hospitals remain under direct administration, external bodies have been set up to oversee the contracting process and fulfillment of the contracted provisions. The latter option was used in São Paulo state to ensure transparency and fairness in the implementation of the OSS contracts.

If the payment system is to motivate all hospitals to improve performance, the system for paying nonprofit hospitals under the SUS must be changed, as well. It is critical that the funding arrangements provide reimbursement that covers costs, to ensure the financial stability of private hospitals and the achievement of minimal levels of quality. Once reimbursement rates are adjusted to cover costs, it is equally important to move toward using contracts to motivate improvements in quality and efficiency. Where capacity is sufficient to deliver certain services among multiple hospitals, the introduction of selective contracting and competition for these services should be initiated. In a competitive environment in which hospitals face the loss of money-generating services, they would naturally shift toward a more proactive strategy with respect to quality enhancement and cost containment.

Although no payment system is perfect, many countries have adopted case-adjustment methods such as DRGs to pay hospitals directly or to strengthen global budgeting systems. The main rationale for adopting DRGs has been to improve the efficiency of hospital care and to control costs. Although DRGs are not without problems, they have stimulated efficiency and cost containment in hospital services. Unlike the AIH system, which is based mainly on procedures—that is, services provided—and hospital characteristics (teaching vs. nonteaching), DRGs also reflect patient characteristics, such as diagnosis and age, and costs (relative use of resources). Thus, a DRG-based system is more effective than some others in linking resource allocation to disease patterns, risks, and costs.

The AIH system represents a building block for developing DRGs. DRG development, however, would require, in addition to the elimination of distortions in available AIH data on procedures, strengthening of data collection on diagnostics, to facilitate case adjustment, and the introduction of systematic and standardized collection of cost data.

A well-formulated DRG-based payment mechanism would contribute to another policy recommendation—reducing fragmentation in the payment systems—if private payers could be motivated through regulation or other means to utilize a common payment basis. In the current situation of multiple and often poorly designed payment systems, hospital managers face a mix of often-contradictory incentives and inequities in payment that leads to under- or overfunding of specific services, depending on the payer and the mechanism applied. A first step toward correcting this situation would be to study international experience in designing uniform payment systems. In any event, achieving uniformity of payment will be impossible without a solidly designed payment mechanism, such as DRGs, that can be used by the SUS, as well as by private payers.

## Weak Coordination and Distorted Capacity Configuration

Delivery of hospital services requires close coordination within the hospital and with other providers (specialists, diagnostics, or primary care services). For health systems to work well,

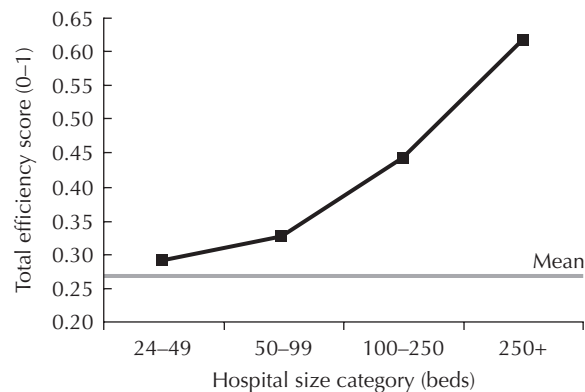
and for people to get good care, providers need to coordinate in myriad ways: with each other (e.g., sharing patient information to ensure quality of care and follow up); with the public health system (e.g., regarding reportable diseases for surveillance); with regulatory and self-regulatory bodies, for quality control (e.g., reporting medical errors, adverse events, and practice statistics to identify problems); and with funders and planning and regulatory bodies (e.g., obtaining approval to buy high-cost equipment or expand capacity).

By and large, publicly funded hospitals in Brazil do not coordinate with one another or with other care providers on patient care, referral, or follow-up. Even hospitals and other providers controlled or financed by the same entity, such as a municipality, do not work together effectively. Coordination between SUS and non-SUS private hospitals is nonexistent. This is not because the people involved do not care but because no mechanisms are in place to motivate and enable such coordination. And even in the best of circumstances, coordination is hard to accomplish, partly because of Brazil's federal structure, which grants state and municipal governments considerable independence. Coordination is further compromised at the subnational level by often fragile public administration, weak capacity to manage public hospitals, ill-defined responsibilities across subnational levels, precarious referral systems, and the absence of ties with non-SUS private providers. The situation has resulted in a blame game between federal, state and municipal authorities over financing, responsibilities, and results that is often played out in the hospital sector. Furthermore, most of the municipalities—which directly administer more health care delivery than the other actors—cover too small a catchment area. In the absence of regional or intermunicipal coordination, scale economies are not realized, and cost shifting takes place.

### Problematic Scale and Location

Evidence from data envelopment analysis (DEA) presented in this volume shows that hospital size is the single most important driver of efficiency (figure 4). Many hospitals in Brazil are in the wrong places and are too small to operate efficiently or to ensure quality. About

**FIGURE 4**  
**DEA Efficiency Scores, by Bed Size**  
(N = 428 with 25+ beds)



Source: Couttolenc et al. 2004.

60 percent have fewer than 50 beds, whereas international evidence suggests an optimal size of between 150 and 250 beds. Worse, small hospitals are severely underutilized, suggesting that demand for their services is limited. Despite low efficiency and utilization, many small hospitals survive through subsidies (“public donations”) from state and municipal governments. These funds are generally secured politically and represent an additional outlay not often registered in subnational health accounts.

Small scale also contributes to higher spending and lower quality. For example, Minas Gerais state estimated that it was spending excessive sums of money treating low-complexity conditions in hospitals instead of at the more affordable primary level. In 2002 these conditions represented 40 percent of admissions and 25 percent of hospital spending in hospitals with fewer than 50 beds but only 13 percent of admissions in hospitals with more than 200 beds.

Higher volume is known to be associated with better outcomes, particularly for complex procedures, and Brazil is no exception. Higher mortality rates for coronary bypass surgery were found in facilities that performed fewer surgeries (table 3). As noted above, patient volume is closely associated with facility size.

In Brazil too much high-cost equipment is located in some areas and too little in others. Oversupply, underuse, misplaced allocation (in small, low-volume hospitals), and inequitable concentration of medical equipment exacerbate access problems and undermine efficiency. This distortion of hospital capacity makes services much costlier than necessary and compromises quality. All levels of government, and many nongovernmental entities, own hospitals in Brazil, and so all these hospital “owners” make important decisions about equipment investments largely in isolation from one another.

### Capacity Distortion, Lack of Networks, and Fragmented Management

Investment financing further complicates and often impedes coordination. The location, scale, and service configuration of hospitals strongly influence the cost of services, and therefore governments throughout the world guide the development of hospital capacity. In Brazil funding mechanisms for capital replacement are inconsistent and susceptible to political pressure. The current system sets priorities for public investments, but not on the basis of a rigorous needs assessment. The system is ineffective in blocking additional, and often politically driven, investments unrelated to stated priorities. For example, many small municipal facilities have been financed through this mechanism, usually to fulfill a mayoral campaign promise. Another important weakness in investment policies is that investment decisions are

**TABLE 3**  
**Coronary Bypass Surgery, Brazil, 1995**

| <i>Surgeries per hospital</i> | <i>Number of hospitals</i> | <i>Total operations</i> | <i>Total deaths</i> | <i>Mortality rate (%)</i> |
|-------------------------------|----------------------------|-------------------------|---------------------|---------------------------|
| 1–9                           | 22                         | 93                      | 12                  | 12.9                      |
| 10–49                         | 31                         | 681                     | 86                  | 12.6                      |
| 50–149                        | 43                         | 2,947                   | 264                 | 10.0                      |
| 150–299                       | 23                         | 8,077                   | 509                 | 6.3                       |
| 300+                          | 5                          | 4,269                   | 228                 | 5.2                       |

Source: Noronha et al. 2003, WHO 2003a.

not, as a rule, linked to provisions for recurrent costs. Consequently, health facilities are built and equipped but remain unused for long periods for lack of budgetary resources to cover personnel and operating costs.

Investment financing is rarely included in annual budgets or hospital payment mechanisms. Instead, hospital investment relies on ad hoc finance mechanisms that do not encourage rational decision making and planning. For example, a significant source of investment funding is international lending by multilateral development agencies. This lending is sporadic and is usually designated for specific areas. Another, more common, mechanism is legislative riders or amendments (*emendas parlamentares*) supported by individual legislators for special projects in their electoral districts. The MS has attempted to offer guidance for these investments to make them compatible with health policies and priorities, but it has not always been successful. In contrast to other systems with pluralistic hospital sectors such as Germany and France, no roadmap guides the development of independent hospital capacity to meet the people's needs and demands.

The Brazilian health system, and particularly the hospital sector, is organized mostly to provide acute care at stand-alone facilities. Network arrangements, in which various providers come together to formalize arrangements to manage and provide health care, are rare. The current organization is inappropriate for handling the high and increasing incidence of chronic diseases, which require integrated and continuous treatment arrangements across provider settings.

## What Can Be Done?

### *Systematically Pursue Service Coordination and Capacity Configuration*

- Develop and implement state-level master plans for care coordination and establishment of regional networks.
- Strengthen the national strategy for rationalizing hospital supply, including the transformation or closure of small hospitals, and improvement of primary care coverage and quality.
- Strengthen policy-based investment financing for hospitals on the basis of regulatory approval or investment master plans.
- Develop a national system for technology assessment and allocation.

Difficulties crop up in coordinating across political jurisdictions in highly decentralized systems, such as Brazil's, in which local governments own hospitals. In these instances, where the political jurisdiction is much smaller than the catchment population served by the facility, local governments must establish coordination mechanisms with each other, as well as with private providers. In Brazil this means that hospital planning and operation must be coordinated across multiple government levels and providers.

At least three forms of service coordination can be identified. (1) Where there is joint ownership of providers, and therefore administrative linkage, provider behavior is coordinated on the basis of hierarchical or employment relations. In the public sector this usually involves regulatory provisions or service norms. This is the current *modus operandi* for public providers in Brazil, and it has been unsuccessful, partly because of the constraints discussed above. (2) Corporations (public and private) that own a wide network of providers are another example of ownership-administrative coordination. (3) "Contractual coordination" operates through funders' contracting procedures and coordination requirements for contracted providers.

Government bodies do not directly control private hospitals, and given the constraints on norm-based coordination, administrative approaches to enhancing coordination are not feasible. Funding-based coordination through contractual arrangements may offer the best chance of success, but it will have to be complemented by pooling of funding and authority across municipalities. Resource pooling would mean putting federal, state, and municipal resources into a single pot to pay for all services and programs for a defined population-based network that comprises a number of municipalities.

Coordination across providers will be impossible unless there is a command structure with real decision-making authority over a defined catchment area, as well as a network of SUS-funded primary care units, diagnostic centers, and hospitals, including nonprofit facilities. To enable pooled financing and oversight, a coordinating body would probably require a governance structure involving municipal consortia or state-affiliated but autonomous foundations. An executive arm would manage the network. Although governance and management arrangements can be highly context specific, coordinating bodies need sufficient authority to allocate resources, including human resources, within the network (e.g., to distribute pooled funds to providers within a specified region that includes multiple municipalities); to make strategic decisions regarding capital investment, service configuration, and technology acquisition; and to direct or provide incentives for hospital strategic development—but not to direct day-to-day activities.

Much more needs to be done regarding the oversupply of small hospitals and the inequitable distribution of technological resources. The current MS strategy regarding small hospitals does not go far enough toward reducing the unnecessary waste of scarce resources in these facilities. A more comprehensive policy is required—one that questions the need for any facility with fewer than 100 beds. Clearly, some small facilities are warranted in remote rural areas. Over the last 20 years, however, improvements in the road network have considerably expanded people's access to bigger and better facilities. All investments should be policy based and part of coordinated investment plans linked to service networks. Resource pooling could reduce the problems associated with too small hospitals.

The cost of having the wrong hospitals in the wrong places is an expense Brazil cannot afford much longer, in terms of both costs and quality. Significant gains can be made by guiding the capacity of the hospital sector toward a better geographic distribution, more economical scale, and better configuration of services across facilities. The best response to fragmented and politically driven investment is a policy-based investment strategy and funding mechanism. Either a sectorwide direct regulatory constraint via a certificate of need or an enforced master plan linked to public funding could work for Brazil. Both approaches have proved workable in pluralistic hospital systems elsewhere, with capital investments being undertaken by a wide range of actors, both governmental and nongovernmental. Policy-based (and enforced) allocation of investment funds precludes the construction of unneeded hospitals or hospital wings or the procurement of expensive equipment. The allocations can also be used to ensure that new capacity is located in places where the population is growing. In systems with pluralistic delivery a master plan is developed that contains medium-term plans for hospital capacity development. Only facilities and departments whose capacities are included in this master plan are reimbursed with public funds. Hence, if a municipal government builds a facility not included in the master plan, there is no assurance that any services will be paid for with public funds.

Although the MS has been discussing mechanisms to foster vigorous technological assessment, these initiatives have been timid. To reduce duplication, waste, and inefficiency,

a strong national system for assessment and allocation of technology is needed. Such a system requires not only the design and implementation of a technology assessment methodology but also the training of sufficient specialists to apply and interpret assessment results. Above all, it requires mechanisms for enforcing the system's recommendations or decisions. Enforcement can be achieved through funding mechanisms (by allocating public funding only to technologies proved cost-effective—the preferred approach in the SUS sector); through regulation (the feasible approach in the private, nonpublicly funded sector); or by both means. Internationally, many of the successful initiatives in this area have established strong national independent bodies with broad stakeholder participation.

### Lack of Systematic and Continuous Programs to Enforce Standards and to Measure and Ensure Quality

“Quality” is an abstract notion, easy to describe but difficult to operationalize. “Good health care” is difficult to define and often depends on country-specific standards set by regulatory agencies. Brazil does have some world-class facilities, but the evidence suggests that many hospitals are simply unsafe, with serious shortcomings in structure, process, and results. In addition to jeopardizing the health of individuals, low quality generates large, needless costs that undermine the affordability of the health system. Poor quality results in higher health spending due to overuse, underuse, errors, adverse events, lost information, repeated diagnostics and procedures, and readmissions.

Quality improvement has been mentioned in nearly every government health policy statement over the last 15 years, but few strategies and actions have been put in place to address quality issues in public hospitals systematically. The situation is similar in the private sector. The press seems to do a better job of monitoring quality than do system stakeholders such as the SUS, insurers, or providers. The media is not, however, the best means of monitoring quality of care. Despite widespread recognition that data on quality are essential for assessing and improving hospital care, the surveys and literature reviewed in this volume suggest that measuring and comparing quality is not a priority topic for analysis.

A commonly used measurement of structural quality involves the state of buildings and infrastructure within a hospital complex. Facility inspections by several state and national groups found disturbingly few facilities in compliance with licensing registration (table 4).

**TABLE 4**  
**Physical Conditions in São Paulo Hospitals, by Ownership, 2003**

(N = 743)

| <i>Physical area</i> | <i>Public</i> |              |                  | <i>Private</i> |                  |                   | <i>Total</i> |
|----------------------|---------------|--------------|------------------|----------------|------------------|-------------------|--------------|
|                      | <i>All</i>    | <i>State</i> | <i>Municipal</i> | <i>All</i>     | <i>Nonprofit</i> | <i>For profit</i> |              |
| Adequate (%)         | 50.0          | 45.7         | 46.5             | 44.0           | 30.3             | 62.8              | 45.4         |
| Inadequate (%)       | 47.6          | 51.4         | 50.5             | 53.9           | 68.8             | 33.3              | 52.5         |
| No information (%)   | 2.4           | 2.9          | 33.0             | 2.1            | 0.9              | 3.9               | 2.2          |
| Number (total)       | 164.0         | 35.0         | 101.0            | 579.0          | 337.0            | 231.0             | 743.0        |

Source: CREMESP 2004a.

Note: Qualification standards are based on licensure legislation.

In other countries these hospitals would be deemed unsafe and forced to meet standards or close their doors. Reviews of patients' medical records showed that clinical management is also deficient (table 5).

Not enough is being done to pursue quality—although the actions that have been taken have been partially effective. Brazil has been a pioneer in the Latin American region in the development of hospital accreditation programs, but these standards are neither applied nor enforced in most hospitals. Only 55 of the more than 6,500 hospitals in Brazil were accredited in 2003; most of them earned the Level 1 accreditation of the National Accreditation Organization (Organização Nacional de Acreditação, ONA), which is essentially basic licensure. Evidence is emerging that accredited or externally certified hospitals surpass unaccredited facilities in quality and efficiency. In 2005 Control of Hospital Quality (Controle de Qualidade Hospitalar, CQH), a hospital certification program based in São Paulo, conducted a comparative analysis of hospitals participating in its Seal of Quality program between 1999 and 2003. Certified facilities far outperformed their uncertified counterparts on nearly all the efficiency and quality indicators selected for the study.

Hospitals that participate in accreditation programs have been found to develop and implement continuous quality improvement programs. Accreditation forces hospitals to examine their competencies, assessing and comparing the care they provide against the standards. Thus, compliance with the standards becomes the driver for a quality improvement process throughout the organization. Unfortunately, hospitals appear to have few external incentives to complete the requirements for accreditation. Accreditation is not yet on the policy agenda of the SUS, despite MS support for the founding of the ONA, nor do private purchasers place much emphasis on it.

When it comes to professional competence and behavior, surprising degrees of attention and neglect coexist. For example, Brazil recently implemented mandatory physician recertification but has no system for certifying the competence of medical school graduates. As to physician malpractice, although Brazil has regulations and institutional mechanisms to protect its citizens, the mechanisms have no teeth. Partly because of physician self-interest, regional and federal boards rarely pull medical licenses and are more likely to issue a confidential warning or censure (table 6). Lines of accountability in the Regional Medical Councils appear diffuse because neither the public nor the government is represented.

**TABLE 5**  
**Adequacy of Record Keeping in Hospitals in São Paulo State, by Ownership**  
(N = 743)

| <i>State of record keeping</i>               | <i>Public</i> |              |                  | <i>Private</i> |                                     |                   | <i>Total</i> |
|--|---------------|--------------|------------------|----------------|-------------------------------------|-------------------|--------------|
|  | <i>All</i>    | <i>State</i> | <i>Municipal</i> | <i>All</i>     | <i>Beneficent and philanthropic</i> | <i>For-profit</i> |              |
| Patient records appropriately filled out (%) | 31.7          | 42.9         | 23.7             | 16.6           | 10.7                                | 23.4              | 19.9         |
| Records incomplete (%)                       | 55.5          | 42.9         | 62.4             | 71.8           | 80.7                                | 60.2              | 68.3         |
| No information (%)                           | 12.8          | 14.2         | 13.9             | 11.6           | 8.6                                 | 16.4              | 11.8         |
| Number                                       | 164.0         | 35.0         | 101.0            | 579.0          | 337.0                               | 231.0             | 743.0        |

Source: CREMESP 2004a.

**TABLE 6**  
**Disciplinary Actions against Physicians in Brazil and the United States, 2001–5**

| <i>Country or state, and action</i> | <i>2001</i> | <i>2002</i> | <i>2003</i> | <i>2004</i> | <i>2005</i> |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|
| <i>Brazil</i>                       |             |             |             |             |             |
| Cases (number)                      | 141         | 184         | 239         | 231         | 344         |
| License suspension, 30 days (%)     | 4           | 3           | 3           | 4           | 8           |
| License revocation (%)              | 4           | 8           | 4           | 4           | 2           |
| <i>United States</i>                |             |             |             |             |             |
| Cases (total number)                | 4,758       | 4,946       | 5,342       | 6,261       | 6,213       |
| License restriction (%)             | 25          | 25          | 25          | 21          | 22          |
| License revocation (%)              | 35          | 36          | 34          | 34          | 32          |
| <i>California</i>                   |             |             |             |             |             |
| Cases (state number)                | 495         | 569         | 572         | 651         | 624         |
| License restriction (%)             | 26          | 25          | 29          | 24          | 23          |
| License revocation (%)              | 34          | 33          | 36          | 33          | 35          |
| <i>New York</i>                     |             |             |             |             |             |
| Cases (state number)                | 503         | 461         | 508         | 534         | 534         |
| License restriction (%)             | 19          | 21          | 28          | 38          | 29          |
| License revocation (%)              | 51          | 49          | 46          | 42          | 39          |

Source: Brazil: Conselho Federal de Medicina 2006; United States: Federation of State Medical Boards 2006.

The countless isolated efforts to improve quality in Brazil have yet to coalesce into a national movement for quality improvement. Few systematic and continuous efforts have been made to measure and improve the quality of care in Brazilian hospitals. Generally absent are national policies, programs, and systems to support measurement and evaluation of quality, quality performance review and comparison, capacity building in quality improvement, dissemination of evidence-based research, and public disclosure. Furthermore, there is no institutional infrastructure for developing, coordinating, and implementing such policies. A few promising MS and regional initiatives, as well as facility-based quality improvement programs that are organizationwide and continuous, but their suitability for replication is unknown because they have not been evaluated. Without a concerted policy and an institutional effort to address quality concerns, any real progress will remain elusive.

### What Can Be Done?

#### *Raise Quality Standards in All Hospitals*

- Develop and implement a three-pronged national strategy for quality assessment and improvement founded on three building blocks: system support, accountability mechanisms, and organizational development (see figure 8.1 in chapter 8).
- Institute a rigorous national licensing exam for medical school graduates.

No sick person entering a Brazilian hospital should face unnecessary treatment-associated risks. National leadership is sorely needed to establish policies and institutional arrangements that support quality improvement systemwide, but particularly in hospitals. Broad

stakeholder involvement is required to formulate a national quality strategy and establish the institutional infrastructure to measure and monitor quality, to conduct quality-based evaluation research, and to provide technical support to facilities seeking to develop continuous quality improvement programs.

Another priority is to rapidly raise all hospitals operating in Brazil to the minimum quality standards prescribed in the licensure requirements. All hospitals should be required to meet these standards immediately. In most countries minimum standards are usually achieved through regulation—for example, by withholding or revoking operating rights for noncompliant hospitals. In Brazil such regulatory provisions are in place, but they are not enforced. Many facilities do not comply with licensure legislation on minimal structural standards and would be forced to close if compliance were enforced.

In any case, because most licensing standards pertain to only to structural quality, compliance with them is unlikely to have sufficient impact on the quality of care. Therefore, at the same time Brazil needs to expand accreditation to motivate hospitals to monitor and improve care processes and outcomes. Here, too, Brazil possesses well-designed accreditation programs, but their uptake is mostly limited to a few hospitals of and for the elite.

For both licensure and accreditation, an alternative strategy is necessary. The best implementation strategy is probably a gradual reduction of reimbursement rates (or maintenance of the rates at current levels) for unlicensed and unaccredited hospitals and the use of the savings to increase reimbursement for compliant hospitals. This measure should be part of a strategic purchasing framework in both the SUS and the private sector aimed at fostering compliance with licensing requirements and promoting accreditation. In several countries accreditation is broadly implemented via public funding criteria. For example, in the United States the Medicare program does not reimburse unaccredited hospitals. Accreditation is also required for hospitals to receive public funding in Spain (Catalonia) and Belgium. The funding reforms discussed above should incorporate financial incentives for hospitals to achieve accreditation.

Improving quality involves changing the behavior of frontline teams and cultivating within the organization an enabling environment to facilitate their work. A minority of hospitals have implemented continuous quality improvement (CQI) programs that target changes in the process or the environment in which quality problems arise. Basic tenets of the CQI approach in health consist of leadership, systematic assessment of performance, effective teamwork, proactive change, use of information technologies, a focus on improving all care processes, incorporation of evidence into practice, and coordination of care across different provider settings. CQI needs to be expanded to all hospitals.

These critical actions must take place at the hospital level under the leadership of hospital management. A range of policies is required to promote such changes. Managers need to be highly motivated to improve quality. Such motivation can be enhanced in Brazil via management hiring practices, incentives in hospital funding arrangements, and clarity concerning management responsibility and performance expectations in contracting arrangements. Even if such policies lead managers to be highly motivated, it is also necessary to give public hospital managers latitude to take action, as outlined in the discussion of governance reforms, above.

Hospital managers will need significant technical and capacity-building support from national structures to acquire the know-how to develop, introduce, and maintain quality improvement programs. Continuous quality improvement requires a systematic approach with

a robust national support infrastructure. Major elements include formation of national policies or strategies to enhance quality; establishment of institutions (public or private) to measure and monitor quality, provide guidance to health care organizations, and strengthen their capacity; and provision of support for systematic research on patient satisfaction and evaluation of clinical practices. Recent policy initiatives in Australia, the United Kingdom, and the United States put quality on each country's policy agenda and precipitated an array of activities that, together, can be viewed as the foundation for national structures and institutions specializing in quality performance evaluation, monitoring, and capacity building. Such experiences can provide important lessons and guidance for developing similar initiatives in Brazil.

The quality of education in a number of medical schools is weak. Voluntary assessments of recent graduates suggest that some medical schools do not adequately train their students for medical practice. Although an exam will not directly improve quality, it may put pressure on medical schools to improve the quality of instruction. Publishing each medical school's results will enable future students to better select a school and thereby exert pressure on the low performers.

### **Lack of Information for Decision Making**

The absence of useful information about the quality, efficiency, and cost of hospital services underlies all issues. At every level, critical information on which to base decisions is absent or incomplete. For example, hospital quality in Brazil is often based on subjective assertions and marketing strategies claiming "prestige," "trust," or possession of the "latest technology." Without data on processes and outcomes, such claims are difficult to evaluate. Perhaps the most worrisome finding in this volume is that the quality of care provided in most hospitals is unknown and is nearly impossible to measure because information is lacking. Worse, almost nothing is being done to measure and assess quality performance systematically.

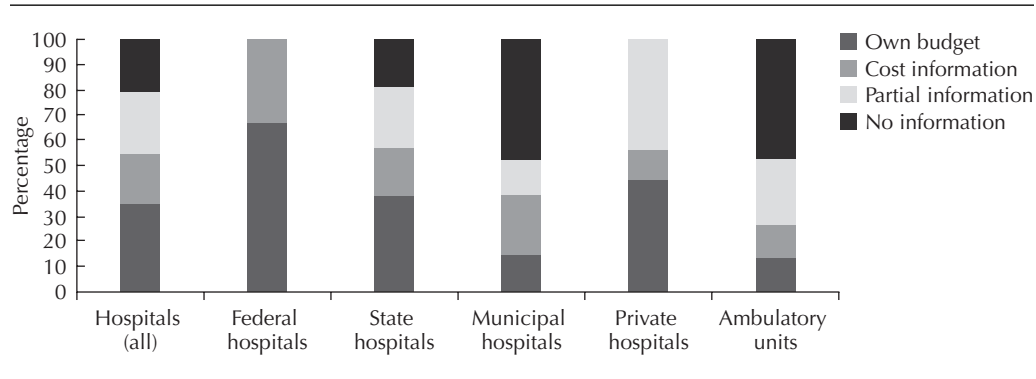
### **Shortcomings of Hospital Information Systems**

The absence of systematic and reliable information on costs, volume, outcomes, and patient characteristics impedes the design of robust hospital payment mechanisms. Payers such as the SUS and private plans constantly clash with hospitals over funding levels, but the debate lacks substance because of the absence or unreliability of cost information on treatments and procedures (figure 5).

Without systematic data collection, progress on quality, outcomes, efficiency, and costs cannot be monitored, analyzed, or compared. Any data available are often unreliable or not comparable because of variations in the definition and measurement of variables. The limited availability of sound data and the high cost of collecting primary data at the facility level compel Brazilian researchers to undertake small-scale, affordable, but often ungeneralizable studies. This situation limits the volume and usefulness of policy-relevant research on hospital performance.

Federal, state, and municipal policy makers are forced to make key decisions about resource allocation without having even minimal information about the quality, cost, or value of services. Nor do hospital managers have the information they need to spot pressing quality problems or to reconfigure staff and other resources to raise quality and productivity. Decision makers are flying blind as they seek to take steps to improve Brazil's hospitals.

**FIGURE 5**  
**Financial Information Available at Health Facilities, 2003**  
 (N = 49)



Source: World Bank 2007.

### What Can Be Done?

#### *Strengthen the Institutional Environment for Resource Use and Performance Management*

- Promote the effective use of information technologies to support performance and outcome measurement, cost collection and analysis, access to clinical information, clinical decision making, and coordination across medical care organizations and teams.
- Support modernization of management structures and practices in public and SUS-financed private hospitals.
- Develop nationwide benchmarking and a public report card system focused on efficiency and quality.

Hospitals need information systems that allow quality to be assessed, problems to be identified, and remedial actions to be taken. These systems need to generate both quality-related information and cost- and efficiency-related information. To be useful for policy makers, the systems must be standardized across all SUS-funded hospitals. Standardized reporting, analysis, and presentation of information will enable insurers and patients to make knowledgeable decisions about where to seek care, and their choices can, in turn, put pressure on hospitals to make improvements. The federal government should develop standards to allow cross-hospital and cross-state benchmarking. Conditionality for receiving SUS-funding or bonuses should be used to motivate hospitals to use these standardized information systems.

Global budgeting systems were recommended above as a mechanism for funding public hospitals. These systems, however, do not always generate critically needed information about service costs; they must be tailored to support the establishment of a meaningful information base. Eventually, it will be possible to base hospital payment on realistic service costs.

For any of the initiatives described here to work, Brazil's hospital managers need modern hospital management skills—and few have them. Hospital directors, lacking these skills, function as passive administrators. A significant effort must be made to build the capacity of new and current managers to function as proactive, strategic leaders.

Three additional and desirable features of these information systems should be considered:

- *Selectivity.* The systems should collect and generate essential information useful for decision making. Considerable amounts of data are routinely collected in the SUS, but they are often irrelevant and are not used for decision making.
- *Utility.* Information systems should be designed with the needs of local managers in mind, so that they can actually use the information to monitor and evaluate the services managed.
- *Standardization.* Cost information systems should be designed for pricing specific treatment procedures, cases, and diagnoses. The data generated will provide input for a DRG-like databank and payment system.

## Notes

1. SIA stands for Sistema de Informação Ambulatorial, the Ambulatory Information System.



# Acronyms and Abbreviations

|          |  |
|----------|--|
| ABC      | activity-based costing   |
| ACERP    | Associação de Comunicação Educativa Riquette Pinto [Riquette Pinto Education Communication Association]            |
| ACSC     | ambulatory care-sensitive condition  |
| AIH      | Autorização de Internação Hospitalar [Authorization for Hospitalization]   |
| ALOS     | average length of stay   |
| AMB      | Associação Médica Brasileira [Brazilian Medical Association]   |
| AMS      | Assistência Médico-Sanitária [national survey of health facilities]  |
| ANS      | Agência Nacional de Saúde Suplementar [National Agency for Health Insurance]                                       |
| ANVISA   | Agência Nacional de Vigilância Sanitária [National Agency for Sanitary Surveillance]                               |
| BTR      | bed turnover rate  |
| CBA      | Consórcio Brasileiro de Acreditação [Brazilian Accreditation Consortium]   |
| CLT      | Consolidação das Leis do Trabalho [private labor regime]   |
| CMI      | case-mix index   |
| CNES     | Cadastro Nacional de Estabelecimentos de Saúde, Health Facility Registry, Ministry of Health                       |
| CONASEMS | Conselho Nacional de Secretários Municipais de Saúde, Board of Municipal Health Secretaries                        |
| CONASS   | Conselho Nacional de Secretários de Saúde [National Council of Secretaries of Health]                              |
| CQH      | Controle de Qualidade Hospitalar [Control of Hospital Quality (hospital certification program based in São Paulo)] |
| CQI      | continuous quality improvement   |
| CR       | <i>centro de regulação</i> [screening and appointment center]  |
| CREMESP  | Conselho Regional de Medicina do Estado de São Paulo [Regional Medical Council of São Paulo State]                 |
| CREMERJ  | Conselho Regional de Medicina do Estado de Rio de Janeiro [Regional Medical Board of Rio de Janeiro State]         |
| CRS      | constant returns to scale  |
| CT       | computed tomography  |
| CV       | coefficient of variation   |
| DALYs    | disability-adjusted life years   |
| DEA      | data envelopment analysis  |
| DRG      | diagnosis-related group  |
| EP       | <i>empresa pública</i> , public enterprise   |
| EPNL     | <i>entidade privada não lucrativa</i> [nonprofit private organization]   |

**xliv** Acronyms and Abbreviations

|          |   |
|----------|---|
| ESE      | <i>empresas sociales del estado</i> [state social enterprises, Colombia]  |
| FA       | <i>fundação de apoio</i> , private support foundation   |
| FBH      | Federação Brasileira de Hospitais, Brazilian Federation of Hospitals  |
| FIDEPS   | Fator Incentivo ao Desenvolvimento de Ensino e Pesquisa em Saúde<br>[payment to university hospitals for teaching and research] |
| FIOCRUZ  | Fundação Osvaldo Cruz, Osvaldo Cruz Foundation  |
| FTE      | full-time equivalent  |
| FUNASA   | Fundação Nacional de Saúde [National Health Foundation]   |
| FUNDACOR | Fundação Pró Coração [Pro-Heart Foundation]   |
| GDP      | gross domestic product  |
| HI       | hospital infection  |
| HMO      | health maintenance organization   |
| HU       | hospital universitário [federal university hospital]  |
| IBGE     | Instituto Brasileiro de Geografia e Estatística [Brazilian Census Bureau]   |
| ICU      | intensive care unit   |
| IDSM     | Instituto de Desenvolvimento Sustentável Mamirauá<br>[Mamirauá Sustainable Development Institute]                               |
| IMPA     | Instituto Nacional de Matemática Pura e Aplicada [National Basic<br>and Applied Mathematics Institute]                          |
| INAMPS   | Instituto Nacional de Assistência Médica da Previdência Social<br>[Social Security Medical Institute]                           |
| INCL     | National Cardiology Institute of Laranjeiras  |
| INSS     | Instituto Nacional de Seguridade Social [Social Security Institute]   |
| IOM      | Institute of Medicine (United States)   |
| IVH      | Índice de Valorização Hospitalar [Hospital Incentive Index]   |
| JCAHO    | Joint Commission on Accreditation of Healthcare Organizations<br>(United States)  |
| LOS      | length of stay  |
| MAC      | medium- and high-complexity (payment mechanism)   |
| MDC      | major diagnostic category   |
| MF       | Ministério da Fazenda [Ministry of Finance]   |
| MPAS     | Ministério de Assistência e Previdência Social [Ministry of Social<br>Welfare and Social Assistance]                            |
| MRI      | magnetic resonance imaging  |
| MS       | Ministério da Saúde [Ministry of Health]  |
| NCD      | noncommunicable disease   |
| NICE     | National Institute for Health and Clinical Excellence (United Kingdom)  |
| NOAS     | Normas Operacionais de Assistência à Saúde [Health Care<br>Operational Norms]   |
| NOBs     | Normas Operacionais Básicas [Basic Operational Directives]  |
| OECD     | Organisation for Economic Co-operation and Development  |
| ONA      | Organização Nacional de Acreditação [National Accreditation Organization]   |
| OR       | occupancy rate  |

|           |  |
|-----------|--|
| OS        | Organizaçõ Social [social organization as defined by federal law]  |
| OSICIP    | <i>organizaçõ de sociedade civil de interesse público</i> [public interest social organization]                              |
| OSSs      | <i>organizações sociais de saúde</i> [health social organizations (São Paulo state)]   |
| PAB       | Piso de Atenção Básica [Basic Care Grant]  |
| PAS       | Plano de Atendimento à Saúde [Health Care Plan (São Paulo municipality)]   |
| PCO       | philanthropic or charitable organization   |
| PLANISA   | Planejamento e Organizaçõ de Instituições de Saúde [Planning and Organization for Health Care Institutions, consulting firm] |
| PNAD      | Pesquisa Nacional por Amostra de Domicílios [National Household Survey]  |
| PNASH     | Programa Nacional de Avaliaçõ dos Serviçõs Hospitalres [National Hospital Services Assessment Program]                       |
| PNASS     | Programa Nacional de Avaliaçõ de Serviçõs de Saúde [National Health Service Assessment Program]                              |
| PPI       | Programaçõ Pactuada e Integrada [Integrated and Negotiated Programming]  |
| PPM       | provider payment mechanism   |
| PPP       | public-private partnership   |
| PROAHSA   | Programa de Estudos Avançados em Administraçõ Hospitalar e de Sistemas de Saúde (a teaching and research program)            |
| PROHOSP   | Programa de Fortalecimento e Melhoría da Qualidade dos Hospitais [Program to Improve Quality of Hospital Care]               |
| PSF       | Programa de Saúde da Família [Family Health Program]   |
| RTS       | returns to scale   |
| SAMPHS    | Sistema de Assistêncía Médico Hospitalar da Previdêncía Social [Social Welfare Hospital Assistance System]                   |
| SIA       | Sistema de Informaçõ Ambulatorial [Ambulatory Care Information System]   |
| SIH       | Sistema de Informaçõ Hospitalar [Hospital Inpatient Information System]  |
| SIOPS     | Sistema de Informações sobre Orçamentos Públicos em Saúde [Information System for Public Budgets in Health]                  |
| SIPAC     | Sistema de Informações para Procedimentos de Alta Complexidade [Information System for High-Complexity Procedures]           |
| SSA       | <i>serviçõs sociais autônomos</i> [autonomous social services]   |
| SUS       | Sistema Único de Saúde [Unified Health System]   |
| SVS       | Secretaria de Vigilância em Saúde [Health Surveillance Secretariat, MS]  |
| TCU       | Tribunal de Contas [Federal Comptroller General]   |
| TTE       | total technical efficiency   |
| UNIDAS    | União Nacional das Instituições de Autogestã em Saúde [National Association of Self-Insured Health Plans]                    |
| UNIMED-BH | (cooperative health plan, Belo Horizonte, Minas Gerais)  |
| USP       | Universidade de São Paulo [São Paulo State University]   |
| VRS       | variable returns to scale  |
| WHO       | World Health Organization  |

