

## SURGICAL EQUIPMENT: TECHNOLOGIES AND GLOBAL MARKETS



HLC154A  
February 2014

Bhavna Joshi  
*Project Analyst*

ISBN: 1-56965-695-9

**bcc** | Research  
Market Forecasting

**BCC Research**  
49 Walnut Park, Building 2  
Wellesley, MA 02481 USA  
866-285-7215 (toll-free within the USA),  
or (+1) 781-489-7301  
[www.bccresearch.com](http://www.bccresearch.com)  
[information@bccresearch.com](mailto:information@bccresearch.com)

**TABLE OF CONTENTS**

| <b>TOPIC</b>  | <b>PAGE NO.</b> |
|---|-----------------|
| CHAPTER 1 INTRODUCTION  | 2               |
| STUDY OBJECTIVES  | 2               |
| STUDY BACKGROUND  | 2               |
| SCOPE OF THE REPORT   | 3               |
| INTENDED AUDIENCE   | 3               |
| SOURCE OF INFORMATION AND METHODOLOGY   | 3               |
| ANALYST CREDENTIALS   | 4               |
| RELATED BCC RESEARCH REPORTS  | 4               |
| BCC RESEARCH ONLINE SERVICES  | 5               |
| DISCLAIMER  | 5               |
| CHAPTER 2 EXECUTIVE SUMMARY   | 7               |
| <i>SUMMARY TABLE GLOBAL MARKET FOR GENERAL SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)</i> | 7               |
| <i>SUMMARY FIGURE GLOBAL MARKET FOR GENERAL SURGICAL EQUIPMENT BY REGION, 2012-2018 (\$ MILLIONS)</i>   | 7               |
| CHAPTER 3 MARKET OVERVIEW   | 10              |
| <i>FIGURE 1 HEALTH CARE ENVIRONMENT IN DEVELOPED VERSUS DEVELOPING ECONOMIES</i>                        | 10              |
| HOSPITAL BUDGETS: DEVELOPED VERSUS DEVELOPING ECONOMIES   | 10              |
| DEVELOPED COUNTRIES   | 10              |
| DEVELOPING COUNTRIES  | 12              |
| Governments Reforms   | 12              |
| Intense Focus on Health Care  | 13              |
| Vietnam: A Case Study   | 13              |
| HEALTH CARE REGULATIONS, POLICIES AND IMPLICATIONS  | 14              |
| NORTH AMERICA   | 14              |
| Implications of the Patient Protection and Affordable Care Act  | 15              |
| EUROPE  | 15              |
| Directives  | 15              |
| Implications of the Above Regulatory Process  | 16              |
| INDIA   | 17              |
| Timeline of Regulations in India  | 18              |
| Implications  | 18              |
| CHINA   | 19              |
| JAPAN   | 20              |
| ASEAN COUNTRIES   | 21              |
| Plans to Harmonize Medical Device Registration System   | 21              |
| TECHNOLOGICAL INNOVATIONS AND TRENDS  | 22              |
| <i>FIGURE 2 KEY FOCUS AREAS OF TECHNOLOGICAL INNOVATION IN THE SURGICAL EQUIPMENT INDUSTRY</i>          | 22              |
| RISING NUMBER OF PATENTS INDICATIVE OF MARKET GROWTH  | 23              |
| RAPID ADVANCES IN TECHNOLOGIES ARE DRIVING THE GROWTH OF THE SURGICAL DEVICES INDUSTRY                  | 23              |
| RECENT INNOVATIONS  | 24              |

| <b>TOPIC</b>  | <b>PAGE NO.</b> |
|---|-----------------|
| Surgical Robots   | 25              |
| Powered Surgical Instruments  | 25              |
| SUPPLY CHAIN PROCESS AND MARKET ANALYSIS  | 26              |
| DISPOSABLE VERSUS REUSABLE SURGICAL EQUIPMENT   | 26              |
| DISPOSABLE INSTRUMENTS  | 27              |
| REUSABLE INSTRUMENTS  | 27              |
| MARKET ANALYSIS   | 27              |
| <i>FIGURE 3 SURGICAL EQUIPMENT MARKET ANALYSIS (CAGR%)</i>  | 27              |
| M&A AND PRODUCT LAUNCHES ACROSS THE INDUSTRY  | 29              |
| <i>FIGURE 4 TOP STRATEGIES, 2010 TO JULY 2013 (NO.)</i>   | 29              |
| CURRENT ENVIRONMENT, FUTURE TRENDS AND STRATEGIC CONCLUSIONS  | 30              |
| Factors Driving the Expected Expansion of the Market  | 30              |
|   |                 |
| CHAPTER 4 GLOBAL SURGICAL EQUIPMENT MARKET  | 33              |
| MARKET DRIVERS  | 33              |
| INCREASE IN MINIMALLY INVASIVE SURGICAL PROCEDURES GLOBALLY   | 33              |
| INCREASED DEMAND FOR SURGICAL EQUIPMENT DUE TO THE GROWING NUMBER OF SURGICAL PROCEDURES                        | 34              |
| <i>FIGURE 5 PERCENTAGE GROWTH IN THE NUMBER OF SURGERIES PERFORMED IN THE U.S., 2003 TO 2010 AND 2020 (%)</i>   | 34              |
| INCREASE IN OUTPATIENT SURGERIES: A MAJOR GROWTH DRIVER OF THE SURGICAL EQUIPMENT MARKET                        | 35              |
| OUTPATIENT SURGERIES IN EMERGING ECONOMIES  | 36              |
| MARKET FORECAST IN EMERGING ECONOMIES   | 36              |
| RESTRAINTS AND CHALLENGES   | 36              |
| End Users Not Trained in the Efficient Use of Devices   | 36              |
| Regulatory Environment  | 37              |
| Continuing Demand for Specialized Instruments   | 37              |
| Conforming to Quality Standards   | 37              |
| OPPORTUNITIES   | 37              |
| Increasing Health Care Expenditures in Emerging Economies   | 38              |
| Developed Countries are Replenishing Medical Supplies and Adding New Hospitals                                  | 38              |
|   |                 |
| CHAPTER 5 GENERAL SURGICAL EQUIPMENT MARKET BY PRODUCT CATEGORY   | 40              |
| <i>TABLE 1 GLOBAL MARKET FOR SURGICAL EQUIPMENT BY PRODUCT CATEGORY, THROUGH 2018 (\$ MILLIONS)</i>             | 40              |
| NEUROSURGERY  | 41              |
| <i>TABLE 2 GLOBAL MARKET FOR NEUROSURGICAL EQUIPMENT BY PRODUCT CATEGORY, THROUGH 2018 (\$ MILLIONS)</i>        | 42              |
| <i>TABLE 3 GLOBAL MARKET FOR NEUROSURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                  | 43              |
| NEUROSURGICAL DRILLS AND CRANIALS   | 43              |
| <i>TABLE 4 GLOBAL MARKET FOR NEUROSURGICAL DRILLS/CRANIAL BY REGION, THROUGH 2018 (\$ MILLIONS)</i>             | 43              |
| ASPIRATING/IRRIGATING/SUCTION TUBES   | 44              |
| <i>TABLE 5 GLOBAL MARKET FOR ASPIRATING, IRRIGATING AND SUCTION TUBES BY REGION, THROUGH 2018 (\$ MILLIONS)</i> | 44              |

| <b>TOPIC</b>  | <b>PAGE NO.</b> |
|---|-----------------|
| MICROSURGICAL SUCTION TUBES AND COMPONENTS  | 44              |
| <i>TABLE 6 GLOBAL MARKET FOR MICROSURGICAL SUCTION TUBES AND COMPONENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i> | 44              |
| ELEVATORS/RASPATORIES   | 45              |
| <i>TABLE 7 GLOBAL MARKET FOR ELEVATORS AND RASPATORIES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                  | 46              |
| RIB SHEARS  | 46              |
| <i>TABLE 8 GLOBAL MARKET FOR RIB SHEARS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                 | 46              |
| SKULL PUNCHES   | 47              |
| <i>TABLE 9 GLOBAL MARKET FOR SKULL PUNCHES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                              | 47              |
| FORCEPS   | 47              |
| Tissue Forceps  | 47              |
| Bipolar Cautery Forceps   | 47              |
| Tonsil Hemostat Forceps   | 48              |
| <i>TABLE 10 GLOBAL MARKET FOR FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                   | 48              |
| TREPHINES   | 49              |
| <i>TABLE 11 GLOBAL MARKET FOR TREPHINES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                 | 49              |
| SKULL TONGS   | 49              |
| <i>TABLE 12 GLOBAL MARKET FOR SKULL TONGS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                               | 50              |
| TROCAR  | 50              |
| <i>TABLE 13 GLOBAL MARKET FOR TROCARS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                   | 50              |
| SCISSORS  | 51              |
| <i>TABLE 14 GLOBAL MARKET FOR SURGICAL SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                         | 51              |
| DISSECTORS AND TUMOR KNIVES   | 52              |
| <i>TABLE 15 GLOBAL MARKET FOR DISSECTORS/TUMOR KNIVES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                   | 52              |
| DURA AND NERVE SEPARATOR  | 52              |
| <i>TABLE 16 GLOBAL MARKET FOR DURA AND NERVE SEPARATORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                 | 53              |
| BRAIN SPATULAS  | 53              |
| <i>TABLE 17 GLOBAL MARKET FOR BRAIN SPATULAS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                            | 53              |
| SURGICAL MALLETS  | 54              |
| <i>TABLE 18 GLOBAL MARKET FOR SURGICAL MALLETS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                          | 54              |
| GALEA HOOKS AND APPLYING FORCEPS  | 54              |
| <i>TABLE 19 GLOBAL MARKET FOR GALEA HOOKS AND APPLYING FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>          | 55              |
| NEEDLE HOLDERS  | 55              |
| <i>TABLE 20 GLOBAL MARKET FOR NEEDLE HOLDERS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                            | 56              |
| PUNCTURE NEEDLES  | 56              |

| <b>TOPIC</b>  | <b>PAGE NO.</b> |
|---|-----------------|
| <i>TABLE 21 GLOBAL MARKET FOR PUNCTURE NEEDLES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 56              |
| CURETTES  | 57              |
| <i>TABLE 22 GLOBAL MARKET FOR SHARP CURETTES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 57              |
| CHISELS AND GOUGES  | 57              |
| <i>TABLE 23 GLOBAL MARKET FOR CHISELS AND GOUGES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 58              |
| RONGEURS  | 58              |
| Spurling Rongeurs   | 58              |
| Gruenwald Laminectomy Rongeurs  | 58              |
| Stille-Ruskin Bone Rongeurs   | 59              |
| <i>TABLE 24 GLOBAL MARKET FOR RONGEURS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 59              |
| BULLDOG CLAMPS  | 59              |
| <i>TABLE 25 GLOBAL MARKET FOR BULLDOG CLAMPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 60              |
| SCALPEL BLADES AND HANDLES  | 60              |
| <i>TABLE 26 GLOBAL MARKET FOR SCALPEL BLADES AND HANDLES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                | 60              |
| PLASTIC AND RECONSTRUCTIVE SURGERIES  | 61              |
| <i>TABLE 27 GLOBAL MARKET FOR PLASTIC AND RECONSTRUCTIVE SURGICAL EQUIPMENT BY PRODUCT CATEGORY, THROUGH 2018 (\$ MILLIONS)</i>   | 61              |
| <i>TABLE 28 GLOBAL MARKET FOR PLASTIC AND RECONSTRUCTIVE SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)</i>             | 62              |
| SILICONE IMPLANTS, SILICONE SHEETING AND SILICONE TUBING  | 62              |
| <i>TABLE 29 GLOBAL MARKET FOR SILICONE IMPLANTS, SILICONE SHEETING AND SILICONE TUBING BY PRODUCT, THROUGH 2018 (\$ MILLIONS)</i> | 62              |
| <i>TABLE 30 GLOBAL MARKET FOR SILICONE IMPLANTS, SILICONE SHEETING AND SILICONE TUBING BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 63              |
| Implant-Grade Silicone Blocks   | 63              |
| <i>TABLE 31 GLOBAL MARKET FOR IMPLANT-GRADE SILICONE BLOCKS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                             | 65              |
| Nasal Septal Buttons  | 65              |
| <i>TABLE 32 GLOBAL MARKET FOR NASAL SEPTAL BUTTONS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                      | 66              |
| Silicone Sheeting   | 66              |
| Applications of Silicone Sheeting   | 67              |
| <i>TABLE 33 GLOBAL MARKET FOR SILICONE SHEETING BY REGION, THROUGH 2018 (\$ MILLIONS)</i>   | 68              |
| Silicone Tubing   | 68              |
| AART Inc.'s Silicone Tubing   | 68              |
| <i>TABLE 34 GLOBAL MARKET FOR SILICONE TUBING BY REGION, THROUGH 2018 (\$ MILLIONS)</i>   | 69              |
| SPECIAL INSTRUMENTS FOR PLASTIC SURGERY   | 70              |
| <i>TABLE 35 GLOBAL MARKET FOR SPECIAL INSTRUMENTS FOR PLASTIC SURGERY BY PRODUCT, THROUGH 2018 (\$ MILLIONS)</i>                  | 70              |
| <i>TABLE 36 GLOBAL MARKET FOR SPECIAL INSTRUMENTS FOR PLASTIC SURGERY BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                   | 71              |
| Areola Markers  | 71              |

| <b>TOPIC</b>  | <b>PAGE NO.</b> |
|---|-----------------|
| <i>TABLE 37 GLOBAL MARKET FOR AREOLA MARKERS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                    | 72              |
| Instruments for Auricular Reconstruction  | 72              |
| <i>TABLE 38 GLOBAL MARKET FOR AURICULAR PLASTIC INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>     | 72              |
| Breast Elevators and Dissectors   | 73              |
| <i>TABLE 39 GLOBAL MARKET FOR BREAST DISSECTORS AND ELEVATORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>   | 74              |
| Bone and Cartilage Instruments  | 74              |
| <i>TABLE 40 GLOBAL MARKET FOR BONE AND CARTILAGE INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>    | 76              |
| Chisels and Gouges  | 76              |
| Chisels with Fiber Handles  | 76              |
| Stille Chisels  | 76              |
| <i>TABLE 41 GLOBAL MARKET FOR CHISELS AND GOUGES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                | 77              |
| Coriotome   | 77              |
| <i>TABLE 42 GLOBAL MARKET FOR CORIOTOMES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                        | 77              |
| Dermatomes  | 78              |
| <i>TABLE 43 GLOBAL MARKET FOR DERMATOMES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                        | 78              |
| Elevators   | 79              |
| Straight Elevators  | 79              |
| Elevators with T-Shaped Handles   | 80              |
| Double-Angled Elevators   | 80              |
| <i>TABLE 44 GLOBAL MARKET FOR ELEVATORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                         | 80              |
| Cleft and Lip Palate Instruments  | 80              |
| <i>TABLE 45 GLOBAL MARKET FOR LIP AND CLEFT PALATE INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 81              |
| Mallets   | 81              |
| <i>TABLE 46 GLOBAL MARKET FOR MALLETS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                           | 82              |
| Measuring and Marking Instruments   | 82              |
| <i>TABLE 47 GLOBAL MARKET FOR MARKING AND MEASURING INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i> | 83              |
| Maxilla Mobilizer   | 83              |
| <i>TABLE 48 GLOBAL MARKET FOR MAXILLA MOBILIZERS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                | 84              |
| Mouth Gags  | 84              |
| <i>TABLE 49 GLOBAL MARKET FOR MOUTH GAGS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                        | 85              |
| Mucosa Knife and Raspatories  | 85              |
| <i>TABLE 50 GLOBAL MARKET FOR MUCOSA KNIVES AND RASPATORIES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>     | 86              |
| Forceps for Nasal Dressing  | 86              |
| <i>TABLE 51 GLOBAL MARKET FOR NASAL DRESSING FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>            | 86              |
| Nasal Rasps   | 87              |

| <b>TOPIC</b>   | <b>PAGE NO.</b> |
|--|-----------------|
| <i>TABLE 52 GLOBAL MARKET FOR NASAL RASPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                      | 87              |
| Nasal Forceps  | 87              |
| <i>TABLE 53 GLOBAL MARKET FOR NASAL FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                    | 88              |
| Nasal Specula, Septum Forceps, and Nasal Saws  | 88              |
| <i>TABLE 54 GLOBAL MARKET FOR NASAL SAWS, SEPTUM FORCEPS, AND NASAL SPECULA BY REGION, THROUGH 2018 (\$ MILLIONS)</i>    | 89              |
| Osteotomes   | 89              |
| <i>TABLE 55 GLOBAL MARKET FOR OSTEOTOMES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                       | 90              |
| Rhinoplasty Knives   | 90              |
| <i>TABLE 56 GLOBAL MARKET FOR RHINOPLASTY KNIVES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                               | 91              |
| Rhinoplasty Scissors   | 91              |
| <i>TABLE 57 GLOBAL MARKET FOR RHINOPLASTY SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                             | 91              |
| Septum Straightening Forceps   | 92              |
| <i>TABLE 58 GLOBAL MARKET FOR SEPTUM STRAIGHTENING FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                     | 92              |
| Swiss Therapy  | 92              |
| Hydrogel Sheets  | 92              |
| Injection Therapy  | 92              |
| Laser Therapy  | 93              |
| <i>TABLE 59 GLOBAL MARKET FOR SWISS THERAPY BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                    | 93              |
| Wire Instruments and Wires   | 93              |
| <i>TABLE 60 GLOBAL MARKET FOR WIRE INSTRUMENTS AND WIRES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                       | 94              |
| STANDARD INSTRUMENTS USED IN PLASTIC SURGERY   | 94              |
| <i>TABLE 61 GLOBAL MARKET FOR STANDARD INSTRUMENTS USED IN PLASTIC SURGERY BY PRODUCT, THROUGH 2018 (\$ MILLIONS)</i>    | 94              |
| <i>TABLE 62 GLOBAL MARKET FOR STANDARD INSTRUMENTS USED IN PLASTIC SURGERY BY REGION, THROUGH 2018 (\$ MILLIONS)</i>     | 95              |
| Disposable Suction Devices for ENT Surgeries   | 95              |
| Guedel Airway  | 96              |
| <i>TABLE 63 GLOBAL MARKET FOR DISPOSABLE SUCTION DEVICES USED IN ENT SURGERIES BY REGION, THROUGH 2018 (\$ MILLIONS)</i> | 96              |
| Forceps  | 96              |
| <i>TABLE 64 GLOBAL MARKET FOR FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 97              |
| Needle Holders   | 97              |
| <i>TABLE 65 GLOBAL MARKET FOR NEEDLE HOLDERS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                   | 98              |
| Scalpels-Blades and Handles  | 98              |
| Scalpel Handles  | 98              |
| Fine Blades  | 98              |
| <i>TABLE 66 GLOBAL MARKET FOR SCALPEL BLADES AND HANDLES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                       | 99              |
| Scissors   | 99              |

| <b>TOPIC</b>   | <b>PAGE NO.</b> |
|--|-----------------|
| <i>TABLE 67 GLOBAL MARKET FOR SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>   | 99              |
| UROLOGY  | 100             |
| <i>TABLE 68 GLOBAL MARKET FOR UROLOGY BY PRODUCT, THROUGH 2018 (\$ MILLIONS)</i>   | 101             |
| <i>TABLE 69 GLOBAL MARKET FOR INSTRUMENTS USED IN UROLOGY APPLICATIONS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>           | 102             |
| CATHETERS AND CATHETER-INTRODUCING TOOLS   | 102             |
| <i>TABLE 70 GLOBAL MARKET FOR CATHETERS AND CATHETER-INTRODUCING TOOLS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>           | 103             |
| COLD KNIVES  | 103             |
| <i>TABLE 71 GLOBAL MARKET FOR COLD KNIVES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 104             |
| URETHROSCOPES, CYSTOSCOPE SHEATHS, AND CYSTOSCOPES   | 104             |
| Cystoscopy Devices   | 105             |
| Urethrosopes   | 105             |
| <i>TABLE 72 GLOBAL MARKET FOR URETHROSCOPES, CYSTOSCOPE SHEATHS, AND CYSTOSCOPES BY REGION, THROUGH 2018 (\$ MILLIONS)</i> | 105             |
| ELECTRODES   | 106             |
| Catheter Electrodiagnostic Procedure   | 106             |
| <i>TABLE 73 GLOBAL MARKET FOR ELECTRODES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>   | 106             |
| FORCEPS  | 107             |
| <i>TABLE 74 GLOBAL MARKET FOR FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 107             |
| CIRCUMCISION INSTRUMENTS   | 107             |
| Mogen Clamp  | 108             |
| <i>TABLE 75 GLOBAL MARKET FOR CIRCUMCISION INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                           | 108             |
| VISUAL CYSTOSCOPY/DOUBLE-ACTION INSTRUMENTS  | 108             |
| <i>TABLE 76 GLOBAL MARKET FOR INSTRUMENTS FOR DOUBLE-ACTION/VISUAL CYSTOSCOPY BY REGION, THROUGH 2018 (\$ MILLIONS)</i>    | 109             |
| HOHENFELLNER INSTRUMENTS   | 109             |
| <i>TABLE 77 GLOBAL MARKET FOR INSTRUMENTS FOR HOHENFELLNER BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                       | 109             |
| PROSTATECTOMY INSTRUMENTS  | 110             |
| <i>TABLE 78 GLOBAL MARKET FOR PROSTATECTOMY INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                          | 110             |
| SPERMATIC CORD SURGICAL INSTRUMENTS  | 111             |
| <i>TABLE 79 GLOBAL MARKET FOR SPERMATIC CORD SURGERY BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                             | 111             |
| LITHOTRIPSY INSTRUMENTS  | 112             |
| <i>TABLE 80 GLOBAL MARKET FOR LITHOTRIPSY BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 112             |
| MEATUS CLAMPS  | 112             |
| <i>TABLE 81 GLOBAL MARKET FOR MEATUS CLAMPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                      | 112             |
| BOOMERANG NEEDLE HOLDERS   | 113             |
| <i>TABLE 82 GLOBAL MARKET FOR BOOMERANG NEEDLE HOLDERS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                           | 113             |



| <b>TOPIC</b>  | <b>PAGE NO.</b> |
|---|-----------------|
| NEPHROSCOPY INSTRUMENTS   | 114             |
| <i>TABLE 83 GLOBAL MARKET FOR NEPHROSCOPES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                      | 115             |
| OBTURATORS  | 115             |
| <i>TABLE 84 GLOBAL MARKET FOR OBTURATORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 116             |
| ADAPTERS, OPTIC FIBER AND BRIDGES   | 116             |
| <i>TABLE 85 GLOBAL MARKET FOR ADAPTERS AND OPTIC FIBER AND BRIDGES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>              | 117             |
| OPTICAL URETHROTOMES  | 117             |
| <i>TABLE 86 GLOBAL MARKET FOR OPTICAL URETHROTOMES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                              | 118             |
| RESECTOSCOPY INSTRUMENTS  | 118             |
| <i>TABLE 87 GLOBAL MARKET FOR RESECTOSCOPES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                     | 119             |
| SCISSORS  | 119             |
| <i>TABLE 88 GLOBAL MARKET FOR SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 120             |
| SYRINGES AND EVACUATORS   | 120             |
| <i>TABLE 89 GLOBAL MARKET FOR SYRINGES AND EVACUATORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                           | 121             |
| URETERORENOSCOPY INSTRUMENTS  | 121             |
| 270 Degree Flexible Fiber Ureterorenoscope  | 122             |
| <i>TABLE 90 GLOBAL MARKET FOR URETERORENOSCOPY INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                      | 122             |
| URETHRAL SOUNDS   | 122             |
| <i>TABLE 91 GLOBAL MARKET FOR URETHRAL SOUNDS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                   | 123             |
| URETHROTOME   | 123             |
| <i>TABLE 92 GLOBAL MARKET FOR URETHROTOMES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                      | 124             |
| VASECTOMY INSTRUMENTS   | 124             |
| Intra-Vas Device (IVD)  | 124             |
| Injected Plugs  | 125             |
| <i>TABLE 93 GLOBAL MARKET FOR VASECTOMY INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                             | 125             |
| OBSTETRICS AND GYNECOLOGY   | 125             |
| <i>TABLE 94 GLOBAL MARKET FOR INSTRUMENTS USED IN OBSTETRICS AND GYNECOLOGY, THROUGH 2018 (\$ MILLIONS)</i>               | 126             |
| <i>TABLE 95 GLOBAL MARKET FOR INSTRUMENTS USED IN OBSTETRICS AND GYNECOLOGY BY REGION, THROUGH 2018 (\$ MILLIONS)</i>     | 126             |
| INSTRUMENTS USED IN GYNECOLOGY  | 127             |
| <i>TABLE 96 GLOBAL MARKET FOR INSTRUMENTS USED IN GYNECOLOGY BY TYPE OF PRODUCT, THROUGH 2018 (\$ MILLIONS)</i>           | 127             |
| <i>TABLE 97 GLOBAL MARKET FOR INSTRUMENTS USED IN GYNECOLOGY BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                    | 128             |
| Instruments for Amnioscopy and Micro Bloodletting   | 128             |
| <i>TABLE 98 GLOBAL MARKET FOR INSTRUMENTS FOR AMNIOSCOPY AND MICRO BLOODLETTING BY REGION, THROUGH 2018 (\$ MILLIONS)</i> | 129             |
| Cannula Instruments   | 129             |

| <b>TOPIC</b>  | <b>PAGE NO.</b> |
|---|-----------------|
| <i>TABLE 99 GLOBAL MARKET FOR CANNULA INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                 | 129             |
| Suction Curettes  | 130             |
| <i>TABLE 100 GLOBAL MARKET FOR SUCTION CURETTES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                   | 131             |
| Uterine Curettes  | 131             |
| <i>TABLE 101 GLOBAL MARKET FOR UTERINE CURETTES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                   | 131             |
| Uterine Biopsy Curettes   | 132             |
| <i>TABLE 102 GLOBAL MARKET FOR UTERINE BIOPSY CURETTES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>            | 132             |
| Disposable Electrodes   | 132             |
| <i>TABLE 103 GLOBAL MARKET FOR DISPOSABLE ELECTRODES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>              | 133             |
| Endocervical Block Needles  | 133             |
| Endocervical Block Kit for Intracervical Block  | 133             |
| Endocervical Needle   | 133             |
| <i>TABLE 104 GLOBAL MARKET FOR ENDOCERVICAL BLOCK NEEDLES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>         | 134             |
| Endocervical Specula  | 134             |
| <i>TABLE 105 GLOBAL MARKET FOR ENDOCERVICAL SPECULA BY REGION, THROUGH 2018 (\$ MILLIONS)</i>               | 135             |
| Sheaths, Endoscopy, and Working Elements  | 135             |
| <i>TABLE 106 GLOBAL MARKET FOR ENDOSCOPY/SHEATHS/WORKING ELEMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i> | 136             |
| Forceps   | 136             |
| <i>TABLE 107 GLOBAL MARKET FOR FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                            | 137             |
| Instruments for Hysterosalpingography (HSG)   | 137             |
| <i>TABLE 108 GLOBAL MARKET FOR HYSTEROSALPINGOGRAPHY INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 138             |
| Hysteroscopes   | 138             |
| <i>TABLE 109 GLOBAL MARKET FOR HYSTEROSCOPES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                      | 139             |
| Nonconductive-Coated Instruments  | 139             |
| Graves Specula  | 139             |
| Reusable Specula  | 139             |
| <i>TABLE 110 GLOBAL MARKET FOR NONCONDUCTIVE-COATED INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>   | 140             |
| Loop Surgery Instruments  | 140             |
| <i>TABLE 111 GLOBAL MARKET FOR LOOP SURGERY PRODUCTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>              | 141             |
| Tenaculum Forceps   | 141             |
| <i>TABLE 112 GLOBAL MARKET FOR TENACULUM FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                  | 142             |
| Tumor Screw   | 142             |
| <i>TABLE 113 GLOBAL MARKET FOR TUMOR SCREWS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                       | 142             |
| Uterine Depressors  | 143             |

| <b>TOPIC</b>   | <b>PAGE NO.</b> |
|--|-----------------|
| <i>TABLE 114 GLOBAL MARKET FOR UTERINE DEPRESSORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                      | 144             |
| Uterine Dilators   | 144             |
| <i>TABLE 115 GLOBAL MARKET FOR UTERINE DILATORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                        | 145             |
| Uterine Probes   | 145             |
| <i>TABLE 116 GLOBAL MARKET FOR UTERINE PROBES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                          | 145             |
| Uterine Scissors   | 146             |
| <i>TABLE 117 GLOBAL MARKET FOR UTERINE SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                        | 146             |
| Uterine Scoops   | 147             |
| <i>TABLE 118 GLOBAL MARKET FOR UTERINE SCOOPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                          | 148             |
| Uterine Sounds   | 148             |
| <i>TABLE 119 GLOBAL MARKET FOR UTERINE SOUNDS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                          | 149             |
| Vaginal Pessaries  | 149             |
| <i>TABLE 120 GLOBAL MARKET FOR VAGINAL PESSARIES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                       | 150             |
| Vaginal Specula  | 150             |
| <i>TABLE 121 GLOBAL MARKET FOR VAGINAL SPECULA BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                         | 151             |
| INSTRUMENTS USED IN OBSTETRICS   | 151             |
| <i>TABLE 122 GLOBAL MARKET FOR INSTRUMENTS USED IN OBSTETRICS BY TYPE OF PRODUCT, THROUGH 2018 (\$ MILLIONS)</i> | 151             |
| <i>TABLE 123 GLOBAL MARKET FOR INSTRUMENTS USED IN OBSTETRICS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>          | 152             |
| Amniotomy Instruments  | 152             |
| <i>TABLE 124 GLOBAL MARKET FOR AMNIOTOMY BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                               | 153             |
| Fetal Transducers and Corometrics Monitors   | 153             |
| <i>TABLE 125 GLOBAL MARKET FOR FETAL TRANSDUCERS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                       | 154             |
| Midwife Instrument Set   | 154             |
| <i>TABLE 126 GLOBAL MARKET FOR MIDWIFE INSTRUMENT SETS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                 | 154             |
| Obstetrical Spoon  | 155             |
| <i>TABLE 127 GLOBAL MARKET FOR OBSTETRICAL SPOONS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                      | 155             |
| Pelvimeters  | 155             |
| <i>TABLE 128 GLOBAL MARKET FOR PELVIMETERS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                             | 156             |
| Placenta and Ovum Curettes   | 156             |
| <i>TABLE 129 GLOBAL MARKET FOR PLACENTA AND OVUM CURETTES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>              | 157             |
| Placenta Scoops  | 157             |
| <i>TABLE 130 GLOBAL MARKET FOR PLACENTA SCOOPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                         | 158             |
| Umbilical and Episiotomy Scissors  | 158             |

| <b>TOPIC</b>  | <b>PAGE NO.</b> |
|---|-----------------|
| <i>TABLE 131 GLOBAL MARKET FOR EPISIOTOMY AND UMBILICAL SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 159             |
| Fetal Stethoscopes  | 159             |
| <i>TABLE 132 GLOBAL MARKET FOR FETAL STETHOSCOPE BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                  | 160             |
| Umbilical Cord Clips and Clamps   | 160             |
| <i>TABLE 133 GLOBAL MARKET FOR UMBILICAL CORD CLIPS AND CLAMPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>    | 161             |
| THORACIC SURGERY  | 161             |
| <i>TABLE 134 GLOBAL MARKET FOR THORACIC SURGICAL EQUIPMENT BY PRODUCT, THROUGH 2018 (\$ MILLIONS)</i>       | 162             |
| <i>TABLE 135 GLOBAL MARKET FOR THORACIC SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)</i>        | 163             |
| BRONCHUS CLAMPS   | 163             |
| <i>TABLE 136 GLOBAL MARKET FOR BRONCHUS CLAMPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                    | 164             |
| BONE-CUTTING FORCEPS  | 164             |
| Bone Holding, Lung Grasping, and Flexible Biopsy  | 164             |
| <i>TABLE 137 GLOBAL MARKET FOR BONE-CUTTING FORCEPS* BY REGION, THROUGH 2018 (\$ MILLIONS)</i>              | 166             |
| RASPATORIES   | 166             |
| <i>TABLE 138 GLOBAL MARKET FOR RASPATORIES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                        | 167             |
| RIB CONTRACTORS   | 167             |
| <i>TABLE 139 GLOBAL MARKET FOR RIB CONTRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                    | 168             |
| STERNUM CUTTERS AND RIB SHEARS  | 168             |
| <i>TABLE 140 GLOBAL MARKET FOR RIB SHEARS AND STERNUM CUTTERS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>     | 169             |
| RONGEURS  | 169             |
| <i>TABLE 141 GLOBAL MARKET FOR RONGEURS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                           | 170             |
| LOBECTOMY SCISSORS  | 170             |
| <i>TABLE 142 GLOBAL MARKET FOR LOBECTOMY SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                 | 170             |
| STERNAL APPROXIMATORS   | 171             |
| <i>TABLE 143 GLOBAL MARKET FOR STERNAL APPROXIMATORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>              | 171             |
| MICROVASCULAR   | 171             |
| <i>TABLE 144 GLOBAL MARKET FOR MICROVASCULAR SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)</i>   | 172             |
| CARDIOVASCULAR  | 172             |
| <i>TABLE 145 GLOBAL MARKET FOR CARDIOVASCULAR SURGICAL EQUIPMENT BY PRODUCT, THROUGH 2018 (\$ MILLIONS)</i> | 173             |
| <i>TABLE 146 GLOBAL MARKET FOR CARDIOVASCULAR SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 174             |
| AORTA DILATORS  | 174             |
| <i>TABLE 147 GLOBAL MARKET FOR AORTA DILATORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                     | 174             |
| AORTA PUNCHES   | 175             |

| <b>TOPIC</b>  | <b>PAGE NO.</b> |
|---|-----------------|
| <i>TABLE 148 GLOBAL MARKET FOR AORTA PUNCHES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 175             |
| BULLDOG CLAMPS  | 175             |
| <i>TABLE 149 GLOBAL MARKET FOR BULLDOG CLAMPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>   | 176             |
| BULLDOG CLAMPS (TITANIUM)   | 177             |
| <i>TABLE 150 GLOBAL MARKET FOR BULLDOG CLAMPS (TITANIUM) BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                              | 177             |
| CARDIOVASCULAR CLAMPS   | 177             |
| <i>TABLE 151 GLOBAL MARKET FOR CARDIOVASCULAR CLAMPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                  | 178             |
| ATRAUMATIC CARDIOVASCULAR CLAMPS  | 178             |
| <i>TABLE 152 GLOBAL MARKET FOR ATRAUMATIC CARDIOVASCULAR CLAMPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                       | 178             |
| FORCEPS   | 179             |
| Hemostatic Forceps  | 179             |
| Tissue Forceps  | 179             |
| Micro Tissue Forceps  | 180             |
| Dissecting Forceps  | 180             |
| <i>TABLE 153 GLOBAL MARKET FOR FORCEPS* BY REGION, THROUGH 2018 (\$ MILLIONS)</i>   | 181             |
| NEEDLE HOLDERS  | 181             |
| Micro Needle Holders  | 182             |
| <i>TABLE 154 GLOBAL MARKET FOR NEEDLE HOLDERS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>   | 182             |
| CARDIOVASCULAR SCISSORS   | 182             |
| <i>TABLE 155 GLOBAL MARKET FOR CARDIOVASCULAR SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                | 183             |
| MICRO SCISSORS  | 183             |
| <i>TABLE 156 GLOBAL MARKET FOR MICRO SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>   | 184             |
| TUNNELING SET   | 184             |
| <i>TABLE 157 GLOBAL MARKET FOR TUNNELING SETS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>   | 184             |
| ENDARTERECTOMY INSTRUMENTS-VARICOSE VEIN AND OTHER  | 185             |
| Minimally Invasive Treatments   | 186             |
| <i>TABLE 158 GLOBAL MARKET FOR ENDARTERECTOMY INSTRUMENTS FOR VARICOSE VEIN AND OTHER BY REGION, THROUGH 2018 (\$ MILLIONS)</i> | 186             |
| VASCULAR DILATORS AND TOURNIQUETS   | 187             |
| <i>TABLE 159 GLOBAL MARKET FOR VASCULAR DILATORS AND TOURNIQUETS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                      | 188             |
| VASCULAR PROBES   | 188             |
| Atraumatic Occlusion  | 188             |
| Accurate Assessment Capabilities  | 188             |
| <i>TABLE 160 GLOBAL MARKET FOR VASCULAR PROBES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 189             |
| VASCULAR SPATULAS   | 189             |
| <i>TABLE 161 GLOBAL MARKET FOR VASCULAR SPATULAS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                      | 189             |
| FINE HOOKS AND VESSEL HOOKS   | 190             |

| <b>TOPIC</b>   | <b>PAGE NO.</b> |
|--|-----------------|
| <i>TABLE 162 GLOBAL MARKET FOR FINE HOOKS AND VESSEL HOOKS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>               | 190             |
| ORTHOPEDIC SURGERY   | 191             |
| <i>TABLE 163 GLOBAL MARKET FOR ORTHOPEDIC SURGICAL EQUIPMENT BY PRODUCT, THROUGH 2018 (\$ MILLIONS)</i>            | 192             |
| <i>TABLE 164 GLOBAL MARKET FOR ORTHOPEDIC SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)</i>             | 192             |
| ARTHROSCOPY INSTRUMENTS  | 193             |
| Arthroscopy Surgical Procedure   | 193             |
| Arthroscopy Hook Electrodes  | 193             |
| Advantages   | 193             |
| <i>TABLE 165 GLOBAL MARKET FOR ARTHROSCOPY INSTRUMENTS BY PRODUCT, THROUGH 2018 (\$ MILLIONS)</i>                  | 194             |
| <i>TABLE 166 GLOBAL MARKET FOR ARTHROSCOPY INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                   | 194             |
| Arthroscopes   | 195             |
| Arthroscopes-Instrument Design   | 195             |
| Small-Joint Arthroscopes   | 195             |
| <i>TABLE 167 GLOBAL MARKET FOR ARTHROSCOPES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                              | 196             |
| Aspirating and Irrigating Instruments  | 196             |
| Favorable Ergonomics   | 196             |
| Trouble-Free Reprocessing  | 196             |
| <i>TABLE 168 GLOBAL MARKET FOR ASPIRATING AND IRRIGATING INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>     | 197             |
| Forceps-Arthroscopy, Biopsy, Grasping, and Punches   | 197             |
| <i>TABLE 169 GLOBAL MARKET FOR FORCEPS* BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                  | 197             |
| Hook Scissors  | 198             |
| <i>TABLE 170 GLOBAL MARKET FOR HOOK SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                             | 198             |
| Hooks-Exploring and Sharp  | 199             |
| <i>TABLE 171 GLOBAL MARKET FOR HOOKS (EXPLORING AND SHARP) BY REGION, THROUGH 2018 (\$ MILLIONS)</i>               | 199             |
| Knives-Arthroscopy   | 199             |
| <i>TABLE 172 GLOBAL MARKET FOR ARTHROSCOPY KNIVES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                        | 200             |
| Trocars, Cannulas and Obturators   | 200             |
| Metal Cannulas and Cannulated Obturators   | 200             |
| Bridge Cannula System  | 201             |
| <i>TABLE 173 GLOBAL MARKET FOR TROCARS, CANNULAS, OBTURATORS, AND OTHERS BY REGION, THROUGH 2018 (\$ MILLIONS)</i> | 201             |
| BANDAGE/PLASTER CAST INSTRUMENTS   | 202             |
| <i>TABLE 174 GLOBAL MARKET FOR BANDAGES AND PLASTER CAST INSTRUMENTS BY PRODUCT, THROUGH 2018 (\$ MILLIONS)</i>    | 202             |
| <i>TABLE 175 GLOBAL MARKET FOR BANDAGES AND PLASTER CAST INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>     | 202             |
| Electric Plaster Saws and Vacuum Cleaners  | 203             |
| Salient Features   | 203             |

| <b>TOPIC</b>   | <b>PAGE NO.</b> |
|--|-----------------|
| <i>TABLE 176 GLOBAL MARKET FOR ELECTRIC PLASTER SAWS AND VACUUM CLEANERS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                     | 203             |
| Plaster Shears and Scissors:   | 204             |
| <i>TABLE 177 GLOBAL MARKET FOR PLASTER SHEARS AND SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>   | 204             |
| Plaster Cast Knives, Plaster Saws and Cast Breakers  | 204             |
| Hand Cutters   | 205             |
| Cast Spreaders   | 205             |
| Cast Benders   | 205             |
| Cast Dryers  | 205             |
| <i>TABLE 178 GLOBAL MARKET FOR PLASTER CAST KNIVES, PLASTER SAWS, CAST BENDERS AND DRYERS, AND CAST BREAKERS BY REGION, THROUGH 2018 (\$ MILLIONS)</i> | 205             |
| Plaster Spreader   | 206             |
| <i>TABLE 179 GLOBAL MARKET FOR PLASTER SPREADERS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>   | 206             |
| <b>BONE INSTRUMENTS</b>  | 206             |
| <i>TABLE 180 GLOBAL MARKET FOR BONE INSTRUMENTS BY PRODUCT, THROUGH 2018 (\$ MILLIONS)</i>   | 206             |
| <i>TABLE 181 GLOBAL MARKET FOR BONE INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 207             |
| Amputation and Metacarpal Saws   | 208             |
| <i>TABLE 182 GLOBAL MARKET FOR AMPUTATION AND METACARPAL SAWS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 208             |
| Bone Chisels, Osteotomes, and Gouges   | 208             |
| <i>TABLE 183 GLOBAL MARKET FOR BONE CHISELS, OSTEOTOMES, AND GOUGES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 209             |
| Bone Curettes and Scoops   | 209             |
| <i>TABLE 184 GLOBAL MARKET FOR BONE CURETTES AND SCOOPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 210             |
| Bone-Cutting Forceps   | 210             |
| <i>TABLE 185 GLOBAL MARKET FOR BONE-CUTTING FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 211             |
| Bone Elevators and Raspatories   | 211             |
| <i>TABLE 186 GLOBAL MARKET FOR BONE ELEVATORS AND RASPATORIES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 212             |
| Bone Files and Rasps   | 212             |
| <i>TABLE 187 GLOBAL MARKET FOR BONE FILES AND RASPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 213             |
| Bone Holding Forceps   | 213             |
| <i>TABLE 188 GLOBAL MARKET FOR BONE HOLDING FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 214             |
| Bone Mallets   | 214             |
| <i>TABLE 189 GLOBAL MARKET FOR BONE MALLETS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 215             |
| Bone Plate Benders   | 215             |
| <i>TABLE 190 GLOBAL MARKET FOR BONE PLATE BENDERS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 216             |
| Bone Plate Holding Forceps   | 216             |
| <i>TABLE 191 GLOBAL MARKET FOR BONE PLATE HOLDING FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 217             |

| <b>TOPIC</b>   | <b>PAGE NO.</b> |
|--|-----------------|
| Bone Rongeur   | 217             |
| <i>TABLE 192 GLOBAL MARKET FOR BONE RONGEURS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                           | 218             |
| Bone Suturing Wire   | 218             |
| <i>TABLE 193 GLOBAL MARKET FOR BONE SUTURING WIRES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                     | 219             |
| Drills and Burs (Burrs)  | 219             |
| <i>TABLE 194 GLOBAL MARKET FOR DRILLS AND BURS (BURRS) BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                 | 220             |
| Hand Drills  | 220             |
| <i>TABLE 195 GLOBAL MARKET FOR HAND DRILLS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                             | 221             |
| Wire and Band Tightening Instruments   | 221             |
| <i>TABLE 196 GLOBAL MARKET FOR WIRE AND BAND TIGHTENING INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>    | 221             |
| Wire Circling Needles  | 222             |
| <i>TABLE 197 GLOBAL MARKET FOR WIRE CIRCLING NEEDLES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                   | 222             |
| Wire Cutting and Extracting Instruments  | 222             |
| <i>TABLE 198 GLOBAL MARKET FOR WIRE CUTTING AND EXTRACTING INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i> | 223             |
| LAPAROSCOPY  | 223             |
| <i>TABLE 199 GLOBAL MARKET FOR LAPAROSCOPY BY PRODUCT, THROUGH 2018 (\$ MILLIONS)</i>                            | 224             |
| <i>TABLE 200 GLOBAL MARKET FOR LAPAROSCOPY BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                             | 224             |
| LAPAROSCOPES AND STANDARD INSTRUMENTS  | 224             |
| Advantages   | 225             |
| <i>TABLE 201 GLOBAL MARKET FOR LAPAROSCOPES AND STANDARD INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>   | 226             |
| LIGATION CLIPS AND APPLIERS  | 226             |
| Advantages   | 226             |
| <i>TABLE 202 GLOBAL MARKET FOR LIGATION CLIPS AND APPLIERS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>             | 227             |
| SUTURING   | 227             |
| <i>TABLE 203 GLOBAL MARKET FOR SUTURING BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                                | 228             |
| REUSABLE TROCARS AND VASCULAR CLAMPS   | 228             |
| <i>TABLE 204 GLOBAL MARKET FOR REUSABLE TROCARS AND VASCULAR CLAMPS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>    | 229             |
| POWER SYSTEMS  | 229             |
| <i>TABLE 205 GLOBAL MARKET FOR POWER SYSTEMS BY PRODUCT, THROUGH 2018 (\$ MILLIONS)</i>                          | 229             |
| <i>TABLE 206 GLOBAL MARKET FOR POWER SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                           | 230             |
| CARDIAC AND THORACIC   | 230             |
| <i>TABLE 207 GLOBAL MARKET FOR CARDIAC AND THORACIC POWER SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>      | 231             |
| MAXILLOFACIAL PLASTICS POWER SYSTEMS   | 231             |
| Symbols: Easy Direction-Finding from the Systems' Functions  | 231             |



| <b>TOPIC</b>   | <b>PAGE NO.</b> |
|--|-----------------|
| <i>TABLE 208 GLOBAL MARKET FOR MAXILLOFACIAL PLASTICS POWER SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 232             |
| RETRACTION SYSTEMS   | 232             |
| FRAME BENEFITS   | 233             |
| RAIL CLAMP   | 233             |
| CAM JOINTS   | 233             |
| INDEPENDENT LATERAL ARMS   | 233             |
| ONE-PIECE CLIP-ON RETRACTOR HANDLES  | 233             |
| INTERCHANGEABLE FAST BLADE CHANGE  | 233             |
| MICRO-ADJUSTABLE HANDLE AND ROTATING FEATURE   | 234             |
| <i>TABLE 209 GLOBAL MARKET FOR RETRACTION SYSTEMS BY PRODUCT, THROUGH 2018 (\$ MILLIONS)</i>                   | 234             |
| <i>TABLE 210 GLOBAL MARKET FOR RETRACTION SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                    | 235             |
| RING RETRACTOR SYSTEM  | 235             |
| <i>TABLE 211 GLOBAL MARKET FOR RING RETRACTOR SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                | 235             |
| BRAIN RETRACTOR  | 236             |
| Product Features   | 236             |
| <i>TABLE 212 GLOBAL MARKET FOR BRAIN RETRACTOR SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>               | 236             |
| HEMILAMINECTOMY  | 237             |
| <i>TABLE 213 GLOBAL MARKET FOR HEMILAMINECTOMY RETRACTOR SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>     | 237             |
| LAMINECTOMY  | 237             |
| <i>TABLE 214 GLOBAL MARKET FOR LAMINECTOMY RETRACTOR SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>         | 238             |
| LUMBAR   | 238             |
| <i>TABLE 215 GLOBAL MARKET FOR LUMBAR RETRACTOR SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>              | 239             |
| CERVICAL AND LAMINA  | 239             |
| Product Features   | 239             |
| Benefits   | 240             |
| <i>TABLE 216 GLOBAL MARKET FOR CERVICAL AND LAMINA RETRACTOR SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)</i> | 240             |
| OTHER HANDHELD RETRACTOR SYSTEMS   | 240             |
| <i>TABLE 217 GLOBAL MARKET FOR OTHER HANDHELD RETRACTOR SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>      | 241             |
| SELF-RETAINING   | 242             |
| <i>TABLE 218 GLOBAL MARKET FOR SELF-RETAINING RETRACTOR SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>      | 242             |
| BREAST RETRACTORS  | 242             |
| Plastic Retractor  | 243             |
| N Endoplastic Retractor  | 243             |
| Fiber-Optic Breast Retractor   | 243             |
| Retractor, Double Ended  | 243             |
| Spatula Retractor  | 243             |
| <i>TABLE 219 GLOBAL MARKET FOR BREAST RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                     | 244             |
| LIP AND CHEEK RETRACTORS   | 244             |

| <b>TOPIC</b>  | <b>PAGE NO.</b> |
|---|-----------------|
| <i>TABLE 220 GLOBAL MARKET FOR LIP AND CHEEK RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>       | 245             |
| SKIN AND DURA HOOK RETRACTORS   | 245             |
| <i>TABLE 221 GLOBAL MARKET FOR SKIN AND DURA HOOK RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 245             |
| NERVE ROOT RETRACTORS   | 246             |
| <i>TABLE 222 GLOBAL MARKET FOR NERVE ROOT RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>          | 246             |
| NASAL RETRACTORS  | 247             |
| <i>TABLE 223 GLOBAL MARKET FOR NASAL RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>               | 247             |
| VAGINAL RETRACTORS  | 247             |
| <i>TABLE 224 GLOBAL MARKET FOR VAGINAL RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>             | 248             |
| LUNG RETRACTORS   | 248             |
| <i>TABLE 225 GLOBAL MARKET FOR LUNG RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                | 249             |
| MAMMARY RETRACTORS  | 249             |
| Fiber-Optic Mammary Retractors  | 249             |
| <i>TABLE 226 GLOBAL MARKET FOR FIBER-OPTIC MAMMARY RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i> | 250             |
| RIB AND STERNAL RETRACTORS  | 250             |
| <i>TABLE 227 GLOBAL MARKET FOR RIB AND STERNAL RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>     | 250             |
| SCAPULAR RETRACTORS   | 251             |
| <i>TABLE 228 GLOBAL MARKET FOR SCAPULAR RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>            | 251             |
| AORTA RETRACTORS  | 251             |
| The Spring Retractor  | 251             |
| <i>TABLE 229 GLOBAL MARKET FOR AORTA RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>               | 252             |
| AURICLE RETRACTORS  | 252             |
| <i>TABLE 230 GLOBAL MARKET FOR AURICLE RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>             | 253             |
| WOUND AND VESSEL RETRACTORS   | 253             |
| <i>TABLE 231 GLOBAL MARKET FOR WOUND AND VESSEL RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>    | 254             |
| BONE RETRACTORS AND LEVERS  | 254             |
| <i>TABLE 232 GLOBAL MARKET FOR BONE RETRACTORS AND LEVERS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>     | 255             |
| KNEE RETRACTORS   | 255             |
| Collateral Ligament Retractor   | 255             |
| Bicos Meniscal Repair Retractor   | 255             |
| Engh Intercondylar Notch Retractors   | 255             |
| Concave Total Knee Retractor  | 256             |
| Knee Retractors with Easy Grip Handles  | 256             |
| Engh Unicondylar Minimally Invasive Knee Surgery Instruments  | 256             |
| Minimally Invasive Knee Retractors  | 256             |
| Minimally Invasive Anterior Femoral Knee Retractor  | 256             |
| "S" Total Knee Retractor  | 256             |

| <b>TOPIC</b>   | <b>PAGE NO.</b> |
|--|-----------------|
| Z Knee Retractor   | 256             |
| Roose Utility Knee Retractor   | 256             |
| <i>TABLE 233 GLOBAL MARKET FOR KNEE RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                   | 257             |
| CINCH ORGAN RETRACTOR  | 257             |
| Merits and Characteristics   | 257             |
| <i>TABLE 234 GLOBAL MARKET FOR CINCH ORGAN RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>            | 258             |
| OTHER RETRACTORS   | 258             |
| <i>TABLE 235 GLOBAL MARKET FOR OTHER RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                  | 258             |
| Love Nerve Retractor   | 259             |
| Adson Retractor  | 259             |
| Beckmann Retractor   | 259             |
| Jansen Retractor   | 259             |
| Army Navy Retractor  | 260             |
| WOUND CLOSURE  | 260             |
| <i>TABLE 236 GLOBAL MARKET FOR WOUND CLOSURE SURGICAL EQUIPMENT BY PRODUCT, THROUGH 2018 (\$ MILLIONS)</i> | 261             |
| <i>TABLE 237 GLOBAL MARKET FOR WOUND CLOSURE SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 261             |
| SUTURES  | 262             |
| Absorbable Fiber   | 262             |
| Nonabsorbable Fiber  | 262             |
| <i>TABLE 238 GLOBAL MARKET FOR SUTURES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                           | 262             |
| TISSUE ADHESIVE  | 262             |
| <i>TABLE 239 GLOBAL MARKET FOR TISSUE ADHESIVES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                  | 263             |
| HEMOSTATIC BONE WAX  | 263             |
| <i>TABLE 240 GLOBAL MARKET FOR HEMOSTATIC BONE WAX BY REGION, THROUGH 2018 (\$ MILLIONS)</i>               | 264             |
| CARDIOVASCULAR (CV) NEEDLES AND OTHERS   | 264             |
| <i>TABLE 241 GLOBAL MARKET FOR CARDIOVASCULAR AND OTHER NEEDLES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>  | 265             |
| CHAPTER 6 GENERAL SURGICAL EQUIPMENT-CONVENTIONAL VERSUS DISPOSABLE  | 267             |
| <i>TABLE 242 GLOBAL MARKET FOR SURGICAL EQUIPMENT BY USABILITY, THROUGH 2018 (\$ MILLIONS)</i>             | 267             |
| DISPOSABLE SURGICAL EQUIPMENT  | 268             |
| DECONTAMINATION AND STERILIZATION  | 268             |
| RISK MANAGEMENT  | 268             |
| INSTRUMENT TRACEABILITY  | 268             |
| LOGISTICS AND SUPPLIES   | 268             |
| COST ALLOCATION  | 269             |
| ENVIRONMENTAL IMPACT   | 269             |
| COST   | 269             |
| <i>TABLE 243 GLOBAL MARKET FOR DISPOSABLE SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)</i>     | 270             |
| REUSABLE SURGICAL EQUIPMENT  | 270             |

| <b>TOPIC</b>  | <b>PAGE NO.</b> |
|---|-----------------|
| HEALTH CARE-ASSOCIATED INFECTIONS   | 271             |
| <i>TABLE 244 GLOBAL MARKET FOR REUSABLE SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                  | 271             |
| CHAPTER 7 GENERAL SURGICAL EQUIPMENT MARKET BY SUPPLY CHAIN   | 274             |
| MARKET PLAYERS: MANUFACTURERS/DEALERS, DISTRIBUTORS AND RETAILERS   | 275             |
| <i>TABLE 245 GLOBAL MARKET FOR SURGICAL EQUIPMENT BY PROVIDER TYPE, THROUGH 2018 (\$ MILLIONS)</i>                    | 276             |
| END USERS: SMALL CLINICS/MEDIUM-LEVEL SPECIALTY HOSPITALS/ LARGE HOSPITALS AND OTHERS                                 | 276             |
| <i>TABLE 246 GLOBAL MARKET FOR SURGICAL EQUIPMENT BY END-USER TYPE, THROUGH 2018 (\$ MILLIONS)</i>                    | 277             |
| STRATEGIC RECOMMENDATIONS   | 277             |
| SUPPLY TO VALUE CHAIN   | 277             |
| COST CONTROL  | 278             |
| INVENTORY MANAGEMENT  | 278             |
| CHAPTER 8 GENERAL SURGICAL EQUIPMENT MARKET BY TECHNOLOGY   | 280             |
| <i>TABLE 247 GLOBAL MARKET FOR SURGICAL EQUIPMENT BY TECHNOLOGY, THROUGH 2018 (\$ MILLIONS)</i>                       | 280             |
| ELECTROSURGICAL EQUIPMENT   | 280             |
| TECHNOLOGY ADVANCES   | 281             |
| GROWING NUMBER OF PROCEDURES PERFORMED AT THE DOCTOR'S OFFICE   | 282             |
| <i>TABLE 248 GLOBAL MARKET FOR ELECTROSURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                    | 282             |
| MANUAL SURGICAL EQUIPMENT   | 282             |
| <i>TABLE 249 GLOBAL MARKET FOR MANUAL SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                    | 283             |
| WIRELESS SURGICAL EQUIPMENT   | 283             |
| <i>TABLE 250 GLOBAL MARKET FOR WIRELESS SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)</i>                  | 283             |
| CHAPTER 9 MARKET BY REGION  | 286             |
| NORTH AMERICA   | 286             |
| <i>TABLE 251 NORTH AMERICAN MARKET FOR GENERAL SURGICAL EQUIPMENT BY PRODUCT CATEGORY, THROUGH 2018 (\$ MILLIONS)</i> | 287             |
| EUROPE  | 287             |
| <i>TABLE 252 EUROPEAN MARKET FOR GENERAL SURGICAL EQUIPMENT BY PRODUCT CATEGORY, THROUGH 2018 (\$ MILLIONS)</i>       | 288             |
| ASIA  | 288             |
| <i>TABLE 253 ASIAN MARKET FOR GENERAL SURGICAL EQUIPMENT BY PRODUCT CATEGORY, THROUGH 2018 (\$ MILLIONS)</i>          | 289             |
| REST OF THE WORLD (ROW)   | 290             |
| <i>TABLE 254 REST OF WORLD MARKET FOR GENERAL SURGICAL EQUIPMENT BY PRODUCT CATEGORY, THROUGH 2018 (\$ MILLIONS)</i>  | 290             |
| CHAPTER 10 COMPETITIVE LANDSCAPE  | 292             |
| <i>FIGURE 6 SHARE OF RECENT DEVELOPMENTS IN SURGICAL EQUIPMENT BY MARKET PLAYER, 2010 TO JULY 2013 (%)</i>            | 292             |

| <b>TOPIC</b>   | <b>PAGE NO.</b> |
|--|-----------------|
| TABLE 255 SURGICAL EQUIPMENT MARKET PRODUCT LAUNCHES, 2010-2013  | 294             |
| TABLE 256 MERGERS AND ACQUISITIONS IN THE SURGICAL EQUIPMENT INDUSTRY, 2010-2013   | 296             |
| TABLE 257 AGREEMENTS, PARTNERSHIPS, COLLABORATIONS, AND JOINT VENTURES IN THE SURGICAL EQUIPMENT INDUSTRY, 2010-2013               | 298             |
| CHAPTER 11 MISCELLANEOUS MARKETS AND ESTIMATES   | 301             |
| TABLE 258 GLOBAL MARKET FOR NEUROSURGERY HOOKS AND NERVE HOOKS BY REGION, THROUGH 2018 (\$ MILLIONS)                               | 301             |
| TABLE 259 GLOBAL MARKET FOR RASPATORIES (SPECIALTY INSTRUMENTS FOR PLASTIC SURGERY) BY REGION, THROUGH 2018 (\$ MILLIONS)          | 301             |
| TABLE 260 GLOBAL MARKET FOR SUCTION RASPATORIES (SPECIALTY INSTRUMENTS FOR PLASTIC SURGERY) BY REGION, THROUGH 2018 (\$ MILLIONS)  | 302             |
| TABLE 261 GLOBAL MARKET FOR VULVA SPREADERS (GYNECOLOGY INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS)                         | 302             |
| TABLE 262 GLOBAL MARKET FOR FORCEPS* (OBSTETRICAL INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS)                               | 303             |
| TABLE 263 GLOBAL MARKET FOR THORACIC INSTRUMENTS* BY REGION, THROUGH 2018 (\$ MILLIONS)  | 303             |
| TABLE 264 GLOBAL MARKET FOR WIRE THORACIC INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)  | 304             |
| TABLE 265 GLOBAL MARKET FOR FEMORAL NECK NAILING INSTRUMENTS (BONE INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS)              | 304             |
| TABLE 266 GLOBAL MARKET FOR FLEXIBLE MEDULLARY REAMERS (BONE INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS)                    | 304             |
| TABLE 267 GLOBAL MARKET FOR HOOK-END INTRAMEDULLARY NAIL INSTRUMENTS (BONE INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS)      | 305             |
| TABLE 268 GLOBAL MARKET FOR KUNTSCHER INSTRUMENTS (BONE INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS)                         | 305             |
| TABLE 269 GLOBAL MARKET FOR MISCELLANEOUS BONE INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)                                   | 305             |
| TABLE 270 GLOBAL MARKET FOR REAMERS (BONE INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS)                                       | 306             |
| TABLE 271 GLOBAL MARKET FOR SCREW HOLDING FORCEPS, TAPS, AND COUNTERSINKS (BONE INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS) | 306             |
| TABLE 272 GLOBAL MARKET FOR SCREWDRIVERS (BONE INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS)                                  | 306             |
| TABLE 273 GLOBAL MARKET FOR WIRE AND BAND TIGHTENING INSTRUMENTS (BONE INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS)          | 307             |
| TABLE 274 GLOBAL MARKET FOR WIRE CIRCLING NEEDLES BY REGION, THROUGH 2018 (\$ MILLIONS)  | 307             |
| TABLE 275 GLOBAL MARKET FOR POWER SYSTEMS FOR SPINE AND OTHER BY REGION, THROUGH 2018 (\$ MILLIONS)                                | 307             |
| TABLE 276 GLOBAL MARKET FOR SMALL BONE POWER SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)   | 308             |
| TABLE 277 GLOBAL MARKET FOR NEUROSURGERY POWER SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)                                       | 308             |
| TABLE 278 GLOBAL MARKET FOR SELF-RETAINING RETRACTOR SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)                                 | 308             |
| TABLE 279 GLOBAL MARKET FOR WIRE SAWS BY REGION, THROUGH 2018 (\$ MILLIONS)  | 309             |

| <b>TOPIC</b>  | <b>PAGE NO.</b> |
|---|-----------------|
| <i>TABLE 280 GLOBAL MARKET FOR OTHER SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)</i> | 309             |
| <i>TABLE 281 GLOBAL MARKET FOR STERNAL KNIVES BY REGION, THROUGH 2018 (\$ MILLIONS)</i>           | 309             |
| <i>TABLE 282 GLOBAL MARKET FOR OTHER POWER SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)</i>      | 310             |
|   |                 |
| <b>CHAPTER 12 PATENT ANALYSIS</b>   | 312             |
| <i>FIGURE 7 PATENTS BY COMPANY, 2006 TO JULY 2013 (%)</i>   | 312             |
| <i>FIGURE 8 PATENTS BY TECHNOLOGY, 2006 TO JULY 2013 (%)</i>                                      | 313             |
| U.S.  | 313             |
| <i>FIGURE 9 U.S. PATENTS BY COMPANY, 2006 TO JULY 2013 (%)</i>                                    | 314             |
| <i>FIGURE 10 U.S. PATENTS BY TECHNOLOGY, 2006 TO JULY 2013 (%)</i>                                | 315             |
| EUROPE  | 316             |
| <i>FIGURE 11 EUROPEAN PATENTS BY COMPANY, 2006 TO JULY 2013 (%)</i>                               | 317             |
| <i>FIGURE 12 EUROPEAN PATENTS BY TECHNOLOGY, 2006 TO JULY 2013 (%)</i>                            | 317             |
| JAPAN   | 318             |
| <i>FIGURE 13 JAPANESE PATENTS BY COMPANY, 2006 TO JULY 2013 (%)</i>                               | 319             |
| <i>FIGURE 14 JAPANESE PATENTS BY TECHNOLOGY, 2006 TO JULY 2013 (%)</i>                            | 319             |
|   |                 |
| <b>CHAPTER 13 COMPANY PROFILES</b>  | 322             |
| AESULAP   | 322             |
| <i>TABLE 283 AESULAP-PRODUCT PORTFOLIO</i>  | 322             |
| <i>TABLE 284 AESULAP-FINANCIALS (\$ MILLIONS)</i>   | 323             |
| <i>TABLE 285 AESULAP-RECENT DEVELOPMENTS</i>  | 324             |
| ARTHROCARE CORP.  | 324             |
| <i>TABLE 286 ARTHROCARE-PRODUCT PORTFOLIO</i>   | 324             |
| <i>TABLE 287 ARTHROCARE-FINANCIALS (\$ MILLIONS)</i>  | 325             |
| <i>TABLE 288 ARTHROCARE-RECENT DEVELOPMENTS</i>   | 325             |
| B. BRAUN MELSUNGEN AG   | 326             |
| <i>TABLE 289 B. BRAUN MELSUNGEN AG-PRODUCT PORTFOLIO</i>  | 326             |
| <i>TABLE 290 B. BRAUN MELSUNGEN AG-FINANCIALS (\$ BILLIONS)</i>                                   | 327             |
| <i>TABLE 291 B. BRAUN MELSUNGEN AG-RECENT DEVELOPMENTS</i>  | 327             |
| BIEN-AIR MEDICAL TECHNOLOGIES   | 328             |
| <i>TABLE 292 BIEN-AIR MEDICAL TECHNOLOGIES-PRODUCT PORTFOLIO</i>                                  | 329             |
| BOSTON SCIENTIFIC   | 329             |
| <i>TABLE 293 BOSTON SCIENTIFIC-PRODUCT PORTFOLIO</i>  | 330             |
| <i>TABLE 294 BOSTON SCIENTIFIC-FINANCIALS (\$ MILLIONS)</i>                                       | 331             |
| <i>TABLE 295 BOSTON SCIENTIFIC-RECENT DEVELOPMENTS</i>  | 331             |
| BRASSELER USA   | 333             |
| <i>TABLE 296 BRASSELER USA-PRODUCT PORTFOLIO</i>  | 333             |
| <i>TABLE 297 BRASSELER USA-RECENT DEVELOPMENTS</i>  | 334             |
| CAREFUSION CORP.  | 335             |
| CAREFUSION SWITZERLAND 317 SARL   | 335             |
| <i>TABLE 298 CAREFUSION-PRODUCT PORTFOLIO</i>   | 336             |
| <i>TABLE 299 CAREFUSION-FINANCIALS (\$ MILLIONS)</i>  | 337             |
| <i>TABLE 300 CAREFUSION-RECENT DEVELOPMENTS</i>   | 337             |
| CODMAN & SHURTLEFF INC.   | 339             |

| <b>TOPIC</b>  | <b>PAGE NO.</b> |
|---|-----------------|
| <i>TABLE 301 CODMAN &amp; SHURTLEFF-PRODUCT PORTFOLIO</i>           | 339             |
| <i>TABLE 302 CODMAN &amp; SHURTLEFF-RECENT DEVELOPMENTS</i>         | 339             |
| CONMED  | 340             |
| <i>TABLE 303 CONMED-PRODUCT PORTFOLIO</i>                           | 340             |
| <i>TABLE 304 CONMED-FINANCIALS (\$ MILLIONS)</i>                    | 341             |
| <i>TABLE 305 CONMED-RECENT DEVELOPMENTS</i>                         | 341             |
| CONMED LINVATEC   | 341             |
| <i>TABLE 306 CONMED LINVATEC-PRODUCT PORTFOLIO</i>                  | 342             |
| <i>TABLE 307 CONMED LINVATEC-RECENT DEVELOPMENTS</i>                | 342             |
| COVIDIEN PLC  | 343             |
| <i>TABLE 308 COVIDIEN PLC-PRODUCT PORTFOLIO</i>                     | 343             |
| <i>TABLE 309 COVIDIEN-FINANCIALS (\$ BILLIONS)</i>                  | 344             |
| <i>TABLE 310 COVIDIEN-RECENT DEVELOPMENTS</i>                       | 344             |
| ERBE USA INC.   | 345             |
| <i>TABLE 311 ERBE USA INC.-PRODUCT PORTFOLIO</i>                    | 346             |
| <i>TABLE 312 ERBE USA INC.-RECENT DEVELOPMENTS</i>                  | 346             |
| ETHICON INC.  | 347             |
| <i>TABLE 313 ETHICON INC.-PRODUCT PORTFOLIO</i>                     | 347             |
| <i>TABLE 314 ETHICON INC.-RECENT DEVELOPMENTS</i>                   | 348             |
| HOLOGIC INC.  | 348             |
| <i>TABLE 315 HOLOGIC-PRODUCT PORTFOLIO</i>                          | 349             |
| <i>TABLE 316 HOLOGIC-FINANCIALS (\$ BILLIONS)</i>                   | 349             |
| <i>TABLE 317 HOLOGIC-RECENT DEVELOPMENTS</i>                        | 349             |
| INTACT MEDICAL CORP.  | 350             |
| <i>TABLE 318 INTACT MEDICAL-PRODUCT PORTFOLIO</i>                   | 350             |
| <i>TABLE 319 INTACT MEDICAL-RECENT DEVELOPMENTS</i>                 | 351             |
| MEDTRONIC INC.  | 351             |
| <i>TABLE 320 MEDTRONIC-PRODUCT PORTFOLIO</i>                        | 351             |
| <i>TABLE 321 MEDTRONIC-FINANCIALS (\$ BILLIONS)</i>                 | 352             |
| <i>TABLE 322 MEDTRONIC-RECENT DEVELOPMENTS</i>                      | 352             |
| MEGADYNE MEDICAL PRODUCTS INC.                                      | 353             |
| <i>TABLE 323 MEGADYNE MEDICAL PRODUCTS INC.-PRODUCT PORTFOLIO</i>   | 354             |
| <i>TABLE 324 MEGADYNE MEDICAL PRODUCTS INC.-RECENT DEVELOPMENTS</i> | 354             |
| OLYMPUS CORP.   | 355             |
| GYRUS ACMI  | 355             |
| <i>TABLE 325 OLYMPUS-PRODUCT PORTFOLIO</i>                          | 355             |
| <i>TABLE 326 OLYMPUS CORP.-FINANCIALS (\$ MILLIONS)</i>             | 356             |
| <i>TABLE 327 OLYMPUS-RECENT DEVELOPMENTS</i>                        | 356             |
| STRYKER   | 356             |
| <i>TABLE 328 STRYKER-PRODUCT PORTFOLIO</i>                          | 357             |
| <i>TABLE 329 STRYKER-FINANCIALS (\$ MILLIONS)</i>                   | 357             |
| <i>TABLE 330 STRYKER-RECENT DEVELOPMENTS</i>                        | 357             |
| CHAPTER 14 APPENDIX: PATENTS  | 360             |
| <i>TABLE 331 U.S. PATENTS AND PATENT APPLICATIONS</i>               | 360             |
| <i>TABLE 332 EUROPEAN PATENTS</i>                                   | 372             |
| <i>TABLE 333 JAPANESE PATENTS</i>                                   | 377             |

**LIST OF TABLES**

| <b>TABLE HEADING</b>   | <b>PAGE NO.</b> |
|--|-----------------|
| SUMMARY TABLE GLOBAL MARKET FOR GENERAL SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)           | 7               |
| TABLE 1 GLOBAL MARKET FOR SURGICAL EQUIPMENT BY PRODUCT CATEGORY, THROUGH 2018 (\$ MILLIONS)               | 40              |
| TABLE 2 GLOBAL MARKET FOR NEUROSURGICAL EQUIPMENT BY PRODUCT CATEGORY, THROUGH 2018 (\$ MILLIONS)          | 42              |
| TABLE 3 GLOBAL MARKET FOR NEUROSURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)                    | 43              |
| TABLE 4 GLOBAL MARKET FOR NEUROSURGICAL DRILLS/CRANIAL BY REGION, THROUGH 2018 (\$ MILLIONS)               | 43              |
| TABLE 5 GLOBAL MARKET FOR ASPIRATING, IRRIGATING AND SUCTION TUBES BY REGION, THROUGH 2018 (\$ MILLIONS)   | 44              |
| TABLE 6 GLOBAL MARKET FOR MICROSURGICAL SUCTION TUBES AND COMPONENTS BY REGION, THROUGH 2018 (\$ MILLIONS) | 44              |
| TABLE 7 GLOBAL MARKET FOR ELEVATORS AND RASPATORIES BY REGION, THROUGH 2018 (\$ MILLIONS)                  | 46              |
| TABLE 8 GLOBAL MARKET FOR RIB SHEARS BY REGION, THROUGH 2018 (\$ MILLIONS)                                 | 46              |
| TABLE 9 GLOBAL MARKET FOR SKULL PUNCHES BY REGION, THROUGH 2018 (\$ MILLIONS)                              | 47              |
| TABLE 10 GLOBAL MARKET FOR FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)                                   | 48              |
| TABLE 11 GLOBAL MARKET FOR TREPHINES BY REGION, THROUGH 2018 (\$ MILLIONS)                                 | 49              |
| TABLE 12 GLOBAL MARKET FOR SKULL TONGS BY REGION, THROUGH 2018 (\$ MILLIONS)                               | 50              |
| TABLE 13 GLOBAL MARKET FOR TROCARS BY REGION, THROUGH 2018 (\$ MILLIONS)                                   | 50              |
| TABLE 14 GLOBAL MARKET FOR SURGICAL SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)                         | 51              |
| TABLE 15 GLOBAL MARKET FOR DISSECTORS/TUMOR KNIVES BY REGION, THROUGH 2018 (\$ MILLIONS)                   | 52              |
| TABLE 16 GLOBAL MARKET FOR DURA AND NERVE SEPARATORS BY REGION, THROUGH 2018 (\$ MILLIONS)                 | 53              |
| TABLE 17 GLOBAL MARKET FOR BRAIN SPATULAS BY REGION, THROUGH 2018 (\$ MILLIONS)                            | 53              |
| TABLE 18 GLOBAL MARKET FOR SURGICAL MALLETS BY REGION, THROUGH 2018 (\$ MILLIONS)                          | 54              |
| TABLE 19 GLOBAL MARKET FOR GALEA HOOKS AND APPLYING FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)          | 55              |
| TABLE 20 GLOBAL MARKET FOR NEEDLE HOLDERS BY REGION, THROUGH 2018 (\$ MILLIONS)                            | 56              |
| TABLE 21 GLOBAL MARKET FOR PUNCTURE NEEDLES BY REGION, THROUGH 2018 (\$ MILLIONS)                          | 56              |
| TABLE 22 GLOBAL MARKET FOR SHARP CURETTES BY REGION, THROUGH 2018 (\$ MILLIONS)                            | 57              |
| TABLE 23 GLOBAL MARKET FOR CHISELS AND GOUGES BY REGION, THROUGH 2018 (\$ MILLIONS)                        | 58              |
| TABLE 24 GLOBAL MARKET FOR RONGEURS BY REGION, THROUGH 2018 (\$ MILLIONS)                                  | 59              |
| TABLE 25 GLOBAL MARKET FOR BULLDOG CLAMPS BY REGION, THROUGH 2018 (\$ MILLIONS)                            | 60              |



| <b>TABLE HEADING</b>   | <b>PAGE NO.</b> |
|--|-----------------|
| TABLE 26 GLOBAL MARKET FOR SCALPEL BLADES AND HANDLES BY REGION, THROUGH 2018 (\$ MILLIONS)                                | 60              |
| TABLE 27 GLOBAL MARKET FOR PLASTIC AND RECONSTRUCTIVE SURGICAL EQUIPMENT BY PRODUCT CATEGORY, THROUGH 2018 (\$ MILLIONS)   | 61              |
| TABLE 28 GLOBAL MARKET FOR PLASTIC AND RECONSTRUCTIVE SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)             | 62              |
| TABLE 29 GLOBAL MARKET FOR SILICONE IMPLANTS, SILICONE SHEETING AND SILICONE TUBING BY PRODUCT, THROUGH 2018 (\$ MILLIONS) | 62              |
| TABLE 30 GLOBAL MARKET FOR SILICONE IMPLANTS, SILICONE SHEETING AND SILICONE TUBING BY REGION, THROUGH 2018 (\$ MILLIONS)  | 63              |
| TABLE 31 GLOBAL MARKET FOR IMPLANT-GRADE SILICONE BLOCKS BY REGION, THROUGH 2018 (\$ MILLIONS)                             | 65              |
| TABLE 32 GLOBAL MARKET FOR NASAL SEPTAL BUTTONS BY REGION, THROUGH 2018 (\$ MILLIONS)                                      | 66              |
| TABLE 33 GLOBAL MARKET FOR SILICONE SHEETING BY REGION, THROUGH 2018 (\$ MILLIONS)   | 68              |
| TABLE 34 GLOBAL MARKET FOR SILICONE TUBING BY REGION, THROUGH 2018 (\$ MILLIONS)   | 69              |
| TABLE 35 GLOBAL MARKET FOR SPECIAL INSTRUMENTS FOR PLASTIC SURGERY BY PRODUCT, THROUGH 2018 (\$ MILLIONS)                  | 70              |
| TABLE 36 GLOBAL MARKET FOR SPECIAL INSTRUMENTS FOR PLASTIC SURGERY BY REGION, THROUGH 2018 (\$ MILLIONS)                   | 71              |
| TABLE 37 GLOBAL MARKET FOR AREOLA MARKERS BY REGION, THROUGH 2018 (\$ MILLIONS)  | 72              |
| TABLE 38 GLOBAL MARKET FOR AURICULAR PLASTIC INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)                             | 72              |
| TABLE 39 GLOBAL MARKET FOR BREAST DISSECTORS AND ELEVATORS BY REGION, THROUGH 2018 (\$ MILLIONS)                           | 74              |
| TABLE 40 GLOBAL MARKET FOR BONE AND CARTILAGE INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)                            | 76              |
| TABLE 41 GLOBAL MARKET FOR CHISELS AND GOUGES BY REGION, THROUGH 2018 (\$ MILLIONS)  | 77              |
| TABLE 42 GLOBAL MARKET FOR CORIOTOMES BY REGION, THROUGH 2018 (\$ MILLIONS)  | 77              |
| TABLE 43 GLOBAL MARKET FOR DERMATOMES BY REGION, THROUGH 2018 (\$ MILLIONS)  | 78              |
| TABLE 44 GLOBAL MARKET FOR ELEVATORS BY REGION, THROUGH 2018 (\$ MILLIONS)   | 80              |
| TABLE 45 GLOBAL MARKET FOR LIP AND CLEFT PALATE INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)                          | 81              |
| TABLE 46 GLOBAL MARKET FOR MALLETS BY REGION, THROUGH 2018 (\$ MILLIONS)   | 82              |
| TABLE 47 GLOBAL MARKET FOR MARKING AND MEASURING INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)                         | 83              |
| TABLE 48 GLOBAL MARKET FOR MAXILLA MOBILIZERS BY REGION, THROUGH 2018 (\$ MILLIONS)  | 84              |
| TABLE 49 GLOBAL MARKET FOR MOUTH GAGS BY REGION, THROUGH 2018 (\$ MILLIONS)  | 85              |
| TABLE 50 GLOBAL MARKET FOR MUCOSA KNIVES AND RASPATORIES BY REGION, THROUGH 2018 (\$ MILLIONS)                             | 86              |
| TABLE 51 GLOBAL MARKET FOR NASAL DRESSING FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)                                    | 86              |

| <b>TABLE HEADING</b>  | <b>PAGE NO.</b> |
|---|-----------------|
| TABLE 52 GLOBAL MARKET FOR NASAL RASPS BY REGION, THROUGH 2018 (\$ MILLIONS)  | 87              |
| TABLE 53 GLOBAL MARKET FOR NASAL FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)                                      | 88              |
| TABLE 54 GLOBAL MARKET FOR NASAL SAWS, SEPTUM FORCEPS, AND NASAL SPECULA BY REGION, THROUGH 2018 (\$ MILLIONS)      | 89              |
| TABLE 55 GLOBAL MARKET FOR OSTEOTOMES BY REGION, THROUGH 2018 (\$ MILLIONS)   | 90              |
| TABLE 56 GLOBAL MARKET FOR RHINOPLASTY KNIVES BY REGION, THROUGH 2018 (\$ MILLIONS)                                 | 91              |
| TABLE 57 GLOBAL MARKET FOR RHINOPLASTY SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)                               | 91              |
| TABLE 58 GLOBAL MARKET FOR SEPTUM STRAIGHTENING FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)                       | 92              |
| TABLE 59 GLOBAL MARKET FOR SWISS THERAPY BY REGION, THROUGH 2018 (\$ MILLIONS)                                      | 93              |
| TABLE 60 GLOBAL MARKET FOR WIRE INSTRUMENTS AND WIRES BY REGION, THROUGH 2018 (\$ MILLIONS)                         | 94              |
| TABLE 61 GLOBAL MARKET FOR STANDARD INSTRUMENTS USED IN PLASTIC SURGERY BY PRODUCT, THROUGH 2018 (\$ MILLIONS)      | 94              |
| TABLE 62 GLOBAL MARKET FOR STANDARD INSTRUMENTS USED IN PLASTIC SURGERY BY REGION, THROUGH 2018 (\$ MILLIONS)       | 95              |
| TABLE 63 GLOBAL MARKET FOR DISPOSABLE SUCTION DEVICES USED IN ENT SURGERIES BY REGION, THROUGH 2018 (\$ MILLIONS)   | 96              |
| TABLE 64 GLOBAL MARKET FOR FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)  | 97              |
| TABLE 65 GLOBAL MARKET FOR NEEDLE HOLDERS BY REGION, THROUGH 2018 (\$ MILLIONS)                                     | 98              |
| TABLE 66 GLOBAL MARKET FOR SCALPEL BLADES AND HANDLES BY REGION, THROUGH 2018 (\$ MILLIONS)                         | 99              |
| TABLE 67 GLOBAL MARKET FOR SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)   | 99              |
| TABLE 68 GLOBAL MARKET FOR UROLOGY BY PRODUCT, THROUGH 2018 (\$ MILLIONS)   | 101             |
| TABLE 69 GLOBAL MARKET FOR INSTRUMENTS USED IN UROLOGY APPLICATIONS BY REGION, THROUGH 2018 (\$ MILLIONS)           | 102             |
| TABLE 70 GLOBAL MARKET FOR CATHETERS AND CATHETER-INTRODUCING TOOLS BY REGION, THROUGH 2018 (\$ MILLIONS)           | 103             |
| TABLE 71 GLOBAL MARKET FOR COLD KNIVES BY REGION, THROUGH 2018 (\$ MILLIONS)  | 104             |
| TABLE 72 GLOBAL MARKET FOR URETHROSCOPES, CYSTOSCOPE SHEATHS, AND CYSTOSCOPES BY REGION, THROUGH 2018 (\$ MILLIONS) | 105             |
| TABLE 73 GLOBAL MARKET FOR ELECTRODES BY REGION, THROUGH 2018 (\$ MILLIONS)   | 106             |
| TABLE 74 GLOBAL MARKET FOR FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)  | 107             |
| TABLE 75 GLOBAL MARKET FOR CIRCUMCISION INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)                           | 108             |
| TABLE 76 GLOBAL MARKET FOR INSTRUMENTS FOR DOUBLE-ACTION/VISUAL CYSTOSCOPY BY REGION, THROUGH 2018 (\$ MILLIONS)    | 109             |
| TABLE 77 GLOBAL MARKET FOR INSTRUMENTS FOR HOHENFELLNER BY REGION, THROUGH 2018 (\$ MILLIONS)                       | 109             |
| TABLE 78 GLOBAL MARKET FOR PROSTATECTOMY INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)                          | 110             |

| <b>TABLE HEADING</b>   | <b>PAGE NO.</b> |
|--|-----------------|
| TABLE 79 GLOBAL MARKET FOR SPERMATIC CORD SURGERY BY REGION, THROUGH 2018 (\$ MILLIONS)                              | 111             |
| TABLE 80 GLOBAL MARKET FOR LITHOTRIPSY BY REGION, THROUGH 2018 (\$ MILLIONS)   | 112             |
| TABLE 81 GLOBAL MARKET FOR MEATUS CLAMPS BY REGION, THROUGH 2018 (\$ MILLIONS)                                       | 112             |
| TABLE 82 GLOBAL MARKET FOR BOOMERANG NEEDLE HOLDERS BY REGION, THROUGH 2018 (\$ MILLIONS)                            | 113             |
| TABLE 83 GLOBAL MARKET FOR NEPHROSCOPES BY REGION, THROUGH 2018 (\$ MILLIONS)  | 115             |
| TABLE 84 GLOBAL MARKET FOR OBTURATORS BY REGION, THROUGH 2018 (\$ MILLIONS)  | 116             |
| TABLE 85 GLOBAL MARKET FOR ADAPTERS AND OPTIC FIBER AND BRIDGES BY REGION, THROUGH 2018 (\$ MILLIONS)                | 117             |
| TABLE 86 GLOBAL MARKET FOR OPTICAL URETHROTOMES BY REGION, THROUGH 2018 (\$ MILLIONS)                                | 118             |
| TABLE 87 GLOBAL MARKET FOR RESECTOSCOPES BY REGION, THROUGH 2018 (\$ MILLIONS)                                       | 119             |
| TABLE 88 GLOBAL MARKET FOR SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)  | 120             |
| TABLE 89 GLOBAL MARKET FOR SYRINGES AND EVACUATORS BY REGION, THROUGH 2018 (\$ MILLIONS)                             | 121             |
| TABLE 90 GLOBAL MARKET FOR URETERORENOSCOPY INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)                        | 122             |
| TABLE 91 GLOBAL MARKET FOR URETHRAL SOUNDS BY REGION, THROUGH 2018 (\$ MILLIONS)                                     | 123             |
| TABLE 92 GLOBAL MARKET FOR URETHROTOMES BY REGION, THROUGH 2018 (\$ MILLIONS)  | 124             |
| TABLE 93 GLOBAL MARKET FOR VASECTOMY INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)                               | 125             |
| TABLE 94 GLOBAL MARKET FOR INSTRUMENTS USED IN OBSTETRICS AND GYNECOLOGY, THROUGH 2018 (\$ MILLIONS)                 | 126             |
| TABLE 95 GLOBAL MARKET FOR INSTRUMENTS USED IN OBSTETRICS AND GYNECOLOGY BY REGION, THROUGH 2018 (\$ MILLIONS)       | 126             |
| TABLE 96 GLOBAL MARKET FOR INSTRUMENTS USED IN GYNECOLOGY BY TYPE OF PRODUCT, THROUGH 2018 (\$ MILLIONS)             | 127             |
| TABLE 97 GLOBAL MARKET FOR INSTRUMENTS USED IN GYNECOLOGY BY REGION, THROUGH 2018 (\$ MILLIONS)                      | 128             |
| TABLE 98 GLOBAL MARKET FOR INSTRUMENTS FOR AMNIOSCOPY AND MICRO BLOODLETTERING BY REGION, THROUGH 2018 (\$ MILLIONS) | 129             |
| TABLE 99 GLOBAL MARKET FOR CANNULA INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)                                 | 129             |
| TABLE 100 GLOBAL MARKET FOR SUCTION CURETTES BY REGION, THROUGH 2018 (\$ MILLIONS)                                   | 131             |
| TABLE 101 GLOBAL MARKET FOR UTERINE CURETTES BY REGION, THROUGH 2018 (\$ MILLIONS)                                   | 131             |
| TABLE 102 GLOBAL MARKET FOR UTERINE BIOPSY CURETTES BY REGION, THROUGH 2018 (\$ MILLIONS)                            | 132             |
| TABLE 103 GLOBAL MARKET FOR DISPOSABLE ELECTRODES BY REGION, THROUGH 2018 (\$ MILLIONS)                              | 133             |
| TABLE 104 GLOBAL MARKET FOR ENDOCERVICAL BLOCK NEEDLES BY REGION, THROUGH 2018 (\$ MILLIONS)                         | 134             |

| <b>TABLE HEADING</b>  | <b>PAGE NO.</b> |
|---|-----------------|
| TABLE 105 GLOBAL MARKET FOR ENDOCERVICAL SPECULA BY REGION, THROUGH 2018 (\$ MILLIONS)                    | 135             |
| TABLE 106 GLOBAL MARKET FOR ENDOSCOPY/SHEATHS/WORKING ELEMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)      | 136             |
| TABLE 107 GLOBAL MARKET FOR FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)                                 | 137             |
| TABLE 108 GLOBAL MARKET FOR HYSTEOSALPINGOGRAPHY INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)        | 138             |
| TABLE 109 GLOBAL MARKET FOR HYSTEROSCOPIES BY REGION, THROUGH 2018 (\$ MILLIONS)                          | 139             |
| TABLE 110 GLOBAL MARKET FOR NONCONDUCTIVE-COATED INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)        | 140             |
| TABLE 111 GLOBAL MARKET FOR LOOP SURGERY PRODUCTS BY REGION, THROUGH 2018 (\$ MILLIONS)                   | 141             |
| TABLE 112 GLOBAL MARKET FOR TENACULUM FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)                       | 142             |
| TABLE 113 GLOBAL MARKET FOR TUMOR SCREWS BY REGION, THROUGH 2018 (\$ MILLIONS)                            | 142             |
| TABLE 114 GLOBAL MARKET FOR UTERINE DEPRESSORS BY REGION, THROUGH 2018 (\$ MILLIONS)                      | 144             |
| TABLE 115 GLOBAL MARKET FOR UTERINE DILATORS BY REGION, THROUGH 2018 (\$ MILLIONS)                        | 145             |
| TABLE 116 GLOBAL MARKET FOR UTERINE PROBES BY REGION, THROUGH 2018 (\$ MILLIONS)                          | 145             |
| TABLE 117 GLOBAL MARKET FOR UTERINE SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)                        | 146             |
| TABLE 118 GLOBAL MARKET FOR UTERINE SCOOPS BY REGION, THROUGH 2018 (\$ MILLIONS)                          | 148             |
| TABLE 119 GLOBAL MARKET FOR UTERINE SOUNDS BY REGION, THROUGH 2018 (\$ MILLIONS)                          | 149             |
| TABLE 120 GLOBAL MARKET FOR VAGINAL PESSARIES BY REGION, THROUGH 2018 (\$ MILLIONS)                       | 150             |
| TABLE 121 GLOBAL MARKET FOR VAGINAL SPECULA BY REGION, THROUGH 2018 (\$ MILLIONS)                         | 151             |
| TABLE 122 GLOBAL MARKET FOR INSTRUMENTS USED IN OBSTETRICS BY TYPE OF PRODUCT, THROUGH 2018 (\$ MILLIONS) | 151             |
| TABLE 123 GLOBAL MARKET FOR INSTRUMENTS USED IN OBSTETRICS BY REGION, THROUGH 2018 (\$ MILLIONS)          | 152             |
| TABLE 124 GLOBAL MARKET FOR AMNIOTOMY BY REGION, THROUGH 2018 (\$ MILLIONS)                               | 153             |
| TABLE 125 GLOBAL MARKET FOR FETAL TRANSDUCERS BY REGION, THROUGH 2018 (\$ MILLIONS)                       | 154             |
| TABLE 126 GLOBAL MARKET FOR MIDWIFE INSTRUMENT SETS BY REGION, THROUGH 2018 (\$ MILLIONS)                 | 154             |
| TABLE 127 GLOBAL MARKET FOR OBSTETRICAL SPOONS BY REGION, THROUGH 2018 (\$ MILLIONS)                      | 155             |
| TABLE 128 GLOBAL MARKET FOR PELVIMETERS BY REGION, THROUGH 2018 (\$ MILLIONS)                             | 156             |
| TABLE 129 GLOBAL MARKET FOR PLACENTA AND OVUM CURETTES BY REGION, THROUGH 2018 (\$ MILLIONS)              | 157             |
| TABLE 130 GLOBAL MARKET FOR PLACENTA SCOOPS BY REGION, THROUGH 2018 (\$ MILLIONS)                         | 158             |

| <b>TABLE HEADING</b>   | <b>PAGE NO.</b> |
|--|-----------------|
| TABLE 131 GLOBAL MARKET FOR EPISIOTOMY AND UMBILICAL SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)  | 159             |
| TABLE 132 GLOBAL MARKET FOR FETAL STETHOSCOPE BY REGION, THROUGH 2018 (\$ MILLIONS)                  | 160             |
| TABLE 133 GLOBAL MARKET FOR UMBILICAL CORD CLIPS AND CLAMPS BY REGION, THROUGH 2018 (\$ MILLIONS)    | 161             |
| TABLE 134 GLOBAL MARKET FOR THORACIC SURGICAL EQUIPMENT BY PRODUCT, THROUGH 2018 (\$ MILLIONS)       | 162             |
| TABLE 135 GLOBAL MARKET FOR THORACIC SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)        | 163             |
| TABLE 136 GLOBAL MARKET FOR BRONCHUS CLAMPS BY REGION, THROUGH 2018 (\$ MILLIONS)                    | 164             |
| TABLE 137 GLOBAL MARKET FOR BONE-CUTTING FORCEPS* BY REGION, THROUGH 2018 (\$ MILLIONS)              | 166             |
| TABLE 138 GLOBAL MARKET FOR RASPATORIES BY REGION, THROUGH 2018 (\$ MILLIONS)                        | 167             |
| TABLE 139 GLOBAL MARKET FOR RIB CONTRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)                    | 168             |
| TABLE 140 GLOBAL MARKET FOR RIB SHEARS AND STERNUM CUTTERS BY REGION, THROUGH 2018 (\$ MILLIONS)     | 169             |
| TABLE 141 GLOBAL MARKET FOR RONGEURS BY REGION, THROUGH 2018 (\$ MILLIONS)                           | 170             |
| TABLE 142 GLOBAL MARKET FOR LOBECTOMY SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)                 | 170             |
| TABLE 143 GLOBAL MARKET FOR STERNAL APPROXIMATORS BY REGION, THROUGH 2018 (\$ MILLIONS)              | 171             |
| TABLE 144 GLOBAL MARKET FOR MICROVASCULAR SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)   | 172             |
| TABLE 145 GLOBAL MARKET FOR CARDIOVASCULAR SURGICAL EQUIPMENT BY PRODUCT, THROUGH 2018 (\$ MILLIONS) | 173             |
| TABLE 146 GLOBAL MARKET FOR CARDIOVASCULAR SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)  | 174             |
| TABLE 147 GLOBAL MARKET FOR AORTA DILATORS BY REGION, THROUGH 2018 (\$ MILLIONS)                     | 174             |
| TABLE 148 GLOBAL MARKET FOR AORTA PUNCHES BY REGION, THROUGH 2018 (\$ MILLIONS)                      | 175             |
| TABLE 149 GLOBAL MARKET FOR BULLDOG CLAMPS BY REGION, THROUGH 2018 (\$ MILLIONS)                     | 176             |
| TABLE 150 GLOBAL MARKET FOR BULLDOG CLAMPS (TITANIUM) BY REGION, THROUGH 2018 (\$ MILLIONS)          | 177             |
| TABLE 151 GLOBAL MARKET FOR CARDIOVASCULAR CLAMPS BY REGION, THROUGH 2018 (\$ MILLIONS)              | 178             |
| TABLE 152 GLOBAL MARKET FOR ATRAUMATIC CARDIOVASCULAR CLAMPS BY REGION, THROUGH 2018 (\$ MILLIONS)   | 178             |
| TABLE 153 GLOBAL MARKET FOR FORCEPS* BY REGION, THROUGH 2018 (\$ MILLIONS)                           | 181             |
| TABLE 154 GLOBAL MARKET FOR NEEDLE HOLDERS BY REGION, THROUGH 2018 (\$ MILLIONS)                     | 182             |
| TABLE 155 GLOBAL MARKET FOR CARDIOVASCULAR SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)            | 183             |
| TABLE 156 GLOBAL MARKET FOR MICRO SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)                     | 184             |

| <b>TABLE HEADING</b>  | <b>PAGE NO.</b> |
|---|-----------------|
| TABLE 157 GLOBAL MARKET FOR TUNNELING SETS BY REGION, THROUGH 2018 (\$ MILLIONS)  | 184             |
| TABLE 158 GLOBAL MARKET FOR ENDARTERECTOMY INSTRUMENTS FOR VARICOSE VEIN AND OTHER BY REGION, THROUGH 2018 (\$ MILLIONS)                        | 186             |
| TABLE 159 GLOBAL MARKET FOR VASCULAR DILATORS AND TOURNIQUETS BY REGION, THROUGH 2018 (\$ MILLIONS)   | 188             |
| TABLE 160 GLOBAL MARKET FOR VASCULAR PROBES BY REGION, THROUGH 2018 (\$ MILLIONS)   | 189             |
| TABLE 161 GLOBAL MARKET FOR VASCULAR SPATULAS BY REGION, THROUGH 2018 (\$ MILLIONS)   | 189             |
| TABLE 162 GLOBAL MARKET FOR FINE HOOKS AND VESSEL HOOKS BY REGION, THROUGH 2018 (\$ MILLIONS)   | 190             |
| TABLE 163 GLOBAL MARKET FOR ORTHOPEDIC SURGICAL EQUIPMENT BY PRODUCT, THROUGH 2018 (\$ MILLIONS)  | 192             |
| TABLE 164 GLOBAL MARKET FOR ORTHOPEDIC SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)   | 192             |
| TABLE 165 GLOBAL MARKET FOR ARTHROSCOPY INSTRUMENTS BY PRODUCT, THROUGH 2018 (\$ MILLIONS)  | 194             |
| TABLE 166 GLOBAL MARKET FOR ARTHROSCOPY INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)   | 194             |
| TABLE 167 GLOBAL MARKET FOR ARTHROSCOPES BY REGION, THROUGH 2018 (\$ MILLIONS)  | 196             |
| TABLE 168 GLOBAL MARKET FOR ASPIRATING AND IRRIGATING INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)   | 197             |
| TABLE 169 GLOBAL MARKET FOR FORCEPS* BY REGION, THROUGH 2018 (\$ MILLIONS)  | 197             |
| TABLE 170 GLOBAL MARKET FOR HOOK SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)   | 198             |
| TABLE 171 GLOBAL MARKET FOR HOOKS (EXPLORING AND SHARP) BY REGION, THROUGH 2018 (\$ MILLIONS)   | 199             |
| TABLE 172 GLOBAL MARKET FOR ARTHROSCOPY KNIVES BY REGION, THROUGH 2018 (\$ MILLIONS)  | 200             |
| TABLE 173 GLOBAL MARKET FOR TROCARS, CANNULAS, OBTURATORS, AND OTHERS BY REGION, THROUGH 2018 (\$ MILLIONS)                                     | 201             |
| TABLE 174 GLOBAL MARKET FOR BANDAGES AND PLASTER CAST INSTRUMENTS BY PRODUCT, THROUGH 2018 (\$ MILLIONS)  | 202             |
| TABLE 175 GLOBAL MARKET FOR BANDAGES AND PLASTER CAST INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)   | 202             |
| TABLE 176 GLOBAL MARKET FOR ELECTRIC PLASTER SAWS AND VACUUM CLEANERS BY REGION, THROUGH 2018 (\$ MILLIONS)                                     | 203             |
| TABLE 177 GLOBAL MARKET FOR PLASTER SHEARS AND SCISSORS BY REGION, THROUGH 2018 (\$ MILLIONS)   | 204             |
| TABLE 178 GLOBAL MARKET FOR PLASTER CAST KNIVES, PLASTER SAWS, CAST BENDERS AND DRYERS, AND CAST BREAKERS BY REGION, THROUGH 2018 (\$ MILLIONS) | 205             |
| TABLE 179 GLOBAL MARKET FOR PLASTER SPREADERS BY REGION, THROUGH 2018 (\$ MILLIONS)   | 206             |
| TABLE 180 GLOBAL MARKET FOR BONE INSTRUMENTS BY PRODUCT, THROUGH 2018 (\$ MILLIONS)   | 206             |
| TABLE 181 GLOBAL MARKET FOR BONE INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)  | 207             |

| <b>TABLE HEADING</b>  | <b>PAGE NO.</b> |
|---|-----------------|
| TABLE 182 GLOBAL MARKET FOR AMPUTATION AND METACARPAL SAWS BY REGION, THROUGH 2018 (\$ MILLIONS)          | 208             |
| TABLE 183 GLOBAL MARKET FOR BONE CHISELS, OSTEOTOMES, AND GOUGES BY REGION, THROUGH 2018 (\$ MILLIONS)    | 209             |
| TABLE 184 GLOBAL MARKET FOR BONE CURETTES AND SCOOPS BY REGION, THROUGH 2018 (\$ MILLIONS)                | 210             |
| TABLE 185 GLOBAL MARKET FOR BONE-CUTTING FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)                    | 211             |
| TABLE 186 GLOBAL MARKET FOR BONE ELEVATORS AND RASPATORIES BY REGION, THROUGH 2018 (\$ MILLIONS)          | 212             |
| TABLE 187 GLOBAL MARKET FOR BONE FILES AND RASPS BY REGION, THROUGH 2018 (\$ MILLIONS)                    | 213             |
| TABLE 188 GLOBAL MARKET FOR BONE HOLDING FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)                    | 214             |
| TABLE 189 GLOBAL MARKET FOR BONE MALLETS BY REGION, THROUGH 2018 (\$ MILLIONS)                            | 215             |
| TABLE 190 GLOBAL MARKET FOR BONE PLATE BENDERS BY REGION, THROUGH 2018 (\$ MILLIONS)                      | 216             |
| TABLE 191 GLOBAL MARKET FOR BONE PLATE HOLDING FORCEPS BY REGION, THROUGH 2018 (\$ MILLIONS)              | 217             |
| TABLE 192 GLOBAL MARKET FOR BONE RONGEURS BY REGION, THROUGH 2018 (\$ MILLIONS)                           | 218             |
| TABLE 193 GLOBAL MARKET FOR BONE SUTURING WIRES BY REGION, THROUGH 2018 (\$ MILLIONS)                     | 219             |
| TABLE 194 GLOBAL MARKET FOR DRILLS AND BURS (BURRS) BY REGION, THROUGH 2018 (\$ MILLIONS)                 | 220             |
| TABLE 195 GLOBAL MARKET FOR HAND DRILLS BY REGION, THROUGH 2018 (\$ MILLIONS)                             | 221             |
| TABLE 196 GLOBAL MARKET FOR WIRE AND BAND TIGHTENING INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)    | 221             |
| TABLE 197 GLOBAL MARKET FOR WIRE CIRCLING NEEDLES BY REGION, THROUGH 2018 (\$ MILLIONS)                   | 222             |
| TABLE 198 GLOBAL MARKET FOR WIRE CUTTING AND EXTRACTING INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS) | 223             |
| TABLE 199 GLOBAL MARKET FOR LAPAROSCOPY BY PRODUCT, THROUGH 2018 (\$ MILLIONS)                            | 224             |
| TABLE 200 GLOBAL MARKET FOR LAPAROSCOPY BY REGION, THROUGH 2018 (\$ MILLIONS)                             | 224             |
| TABLE 201 GLOBAL MARKET FOR LAPAROSCOPES AND STANDARD INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)   | 226             |
| TABLE 202 GLOBAL MARKET FOR LIGATION CLIPS AND APPLIERS BY REGION, THROUGH 2018 (\$ MILLIONS)             | 227             |
| TABLE 203 GLOBAL MARKET FOR SUTURING BY REGION, THROUGH 2018 (\$ MILLIONS)                                | 228             |
| TABLE 204 GLOBAL MARKET FOR REUSABLE TROCARS AND VASCULAR CLAMPS BY REGION, THROUGH 2018 (\$ MILLIONS)    | 229             |
| TABLE 205 GLOBAL MARKET FOR POWER SYSTEMS BY PRODUCT, THROUGH 2018 (\$ MILLIONS)                          | 229             |
| TABLE 206 GLOBAL MARKET FOR POWER SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)                           | 230             |
| TABLE 207 GLOBAL MARKET FOR CARDIAC AND THORACIC POWER SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)      | 231             |

| <b>TABLE HEADING</b>  | <b>PAGE NO.</b> |
|---|-----------------|
| TABLE 208 GLOBAL MARKET FOR MAXILLOFACIAL PLASTICS POWER SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)  | 232             |
| TABLE 209 GLOBAL MARKET FOR RETRACTION SYSTEMS BY PRODUCT, THROUGH 2018 (\$ MILLIONS)                   | 234             |
| TABLE 210 GLOBAL MARKET FOR RETRACTION SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)                    | 235             |
| TABLE 211 GLOBAL MARKET FOR RING RETRACTOR SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)                | 235             |
| TABLE 212 GLOBAL MARKET FOR BRAIN RETRACTOR SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)               | 236             |
| TABLE 213 GLOBAL MARKET FOR HEMILAMINECTOMY RETRACTOR SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)     | 237             |
| TABLE 214 GLOBAL MARKET FOR LAMINECTOMY RETRACTOR SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)         | 238             |
| TABLE 215 GLOBAL MARKET FOR LUMBAR RETRACTOR SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)              | 239             |
| TABLE 216 GLOBAL MARKET FOR CERVICAL AND LAMINA RETRACTOR SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS) | 240             |
| TABLE 217 GLOBAL MARKET FOR OTHER HANDHELD RETRACTOR SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)      | 241             |
| TABLE 218 GLOBAL MARKET FOR SELF-RETAINING RETRACTOR SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)      | 242             |
| TABLE 219 GLOBAL MARKET FOR BREAST RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)                     | 244             |
| TABLE 220 GLOBAL MARKET FOR LIP AND CHEEK RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)              | 245             |
| TABLE 221 GLOBAL MARKET FOR SKIN AND DURA HOOK RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)         | 245             |
| TABLE 222 GLOBAL MARKET FOR NERVE ROOT RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)                 | 246             |
| TABLE 223 GLOBAL MARKET FOR NASAL RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)                      | 247             |
| TABLE 224 GLOBAL MARKET FOR VAGINAL RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)                    | 248             |
| TABLE 225 GLOBAL MARKET FOR LUNG RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)                       | 249             |
| TABLE 226 GLOBAL MARKET FOR FIBER-OPTIC MAMMARY RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)        | 250             |
| TABLE 227 GLOBAL MARKET FOR RIB AND STERNAL RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)            | 250             |
| TABLE 228 GLOBAL MARKET FOR SCAPULAR RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)                   | 251             |
| TABLE 229 GLOBAL MARKET FOR AORTA RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)                      | 252             |
| TABLE 230 GLOBAL MARKET FOR AURICLE RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)                    | 253             |
| TABLE 231 GLOBAL MARKET FOR WOUND AND VESSEL RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)           | 254             |
| TABLE 232 GLOBAL MARKET FOR BONE RETRACTORS AND LEVERS BY REGION, THROUGH 2018 (\$ MILLIONS)            | 255             |
| TABLE 233 GLOBAL MARKET FOR KNEE RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)                       | 257             |



| <b>TABLE HEADING</b>  | <b>PAGE NO.</b> |
|---|-----------------|
| TABLE 234 GLOBAL MARKET FOR CINCH ORGAN RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)  | 258             |
| TABLE 235 GLOBAL MARKET FOR OTHER RETRACTORS BY REGION, THROUGH 2018 (\$ MILLIONS)  | 258             |
| TABLE 236 GLOBAL MARKET FOR WOUND CLOSURE SURGICAL EQUIPMENT BY PRODUCT, THROUGH 2018 (\$ MILLIONS)                               | 261             |
| TABLE 237 GLOBAL MARKET FOR WOUND CLOSURE SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)                                | 261             |
| TABLE 238 GLOBAL MARKET FOR SUTURES BY REGION, THROUGH 2018 (\$ MILLIONS)   | 262             |
| TABLE 239 GLOBAL MARKET FOR TISSUE ADHESIVES BY REGION, THROUGH 2018 (\$ MILLIONS)  | 263             |
| TABLE 240 GLOBAL MARKET FOR HEMOSTATIC BONE WAX BY REGION, THROUGH 2018 (\$ MILLIONS)   | 264             |
| TABLE 241 GLOBAL MARKET FOR CARDIOVASCULAR AND OTHER NEEDLES BY REGION, THROUGH 2018 (\$ MILLIONS)                                | 265             |
| TABLE 242 GLOBAL MARKET FOR SURGICAL EQUIPMENT BY USABILITY, THROUGH 2018 (\$ MILLIONS)   | 267             |
| TABLE 243 GLOBAL MARKET FOR DISPOSABLE SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)                                   | 270             |
| TABLE 244 GLOBAL MARKET FOR REUSABLE SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)                                     | 271             |
| TABLE 245 GLOBAL MARKET FOR SURGICAL EQUIPMENT BY PROVIDER TYPE, THROUGH 2018 (\$ MILLIONS)                                       | 276             |
| TABLE 246 GLOBAL MARKET FOR SURGICAL EQUIPMENT BY END-USER TYPE, THROUGH 2018 (\$ MILLIONS)                                       | 277             |
| TABLE 247 GLOBAL MARKET FOR SURGICAL EQUIPMENT BY TECHNOLOGY, THROUGH 2018 (\$ MILLIONS)  | 280             |
| TABLE 248 GLOBAL MARKET FOR ELECTROSURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)                                       | 282             |
| TABLE 249 GLOBAL MARKET FOR MANUAL SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)                                       | 283             |
| TABLE 250 GLOBAL MARKET FOR WIRELESS SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)                                     | 283             |
| TABLE 251 NORTH AMERICAN MARKET FOR GENERAL SURGICAL EQUIPMENT BY PRODUCT CATEGORY, THROUGH 2018 (\$ MILLIONS)                    | 287             |
| TABLE 252 EUROPEAN MARKET FOR GENERAL SURGICAL EQUIPMENT BY PRODUCT CATEGORY, THROUGH 2018 (\$ MILLIONS)                          | 288             |
| TABLE 253 ASIAN MARKET FOR GENERAL SURGICAL EQUIPMENT BY PRODUCT CATEGORY, THROUGH 2018 (\$ MILLIONS)                             | 289             |
| TABLE 254 REST OF WORLD MARKET FOR GENERAL SURGICAL EQUIPMENT BY PRODUCT CATEGORY, THROUGH 2018 (\$ MILLIONS)                     | 290             |
| TABLE 255 SURGICAL EQUIPMENT MARKET PRODUCT LAUNCHES, 2010-2013   | 294             |
| TABLE 256 MERGERS AND ACQUISITIONS IN THE SURGICAL EQUIPMENT INDUSTRY, 2010-2013  | 296             |
| TABLE 257 AGREEMENTS, PARTNERSHIPS, COLLABORATIONS, AND JOINT VENTURES IN THE SURGICAL EQUIPMENT INDUSTRY, 2010-2013              | 298             |
| TABLE 258 GLOBAL MARKET FOR NEUROSURGERY HOOKS AND NERVE HOOKS BY REGION, THROUGH 2018 (\$ MILLIONS)                              | 301             |
| TABLE 259 GLOBAL MARKET FOR RASPATORIES (SPECIALTY INSTRUMENTS FOR PLASTIC SURGERY) BY REGION, THROUGH 2018 (\$ MILLIONS)         | 301             |
| TABLE 260 GLOBAL MARKET FOR SUCTION RASPATORIES (SPECIALTY INSTRUMENTS FOR PLASTIC SURGERY) BY REGION, THROUGH 2018 (\$ MILLIONS) | 302             |

| <b>TABLE HEADING</b>   | <b>PAGE NO.</b> |
|--|-----------------|
| TABLE 261 GLOBAL MARKET FOR VULVA SPREADERS (GYNECOLOGY INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS)                         | 302             |
| TABLE 262 GLOBAL MARKET FOR FORCEPS* (OBSTETRICAL INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS)                               | 303             |
| TABLE 263 GLOBAL MARKET FOR THORACIC INSTRUMENTS* BY REGION, THROUGH 2018 (\$ MILLIONS)  | 303             |
| TABLE 264 GLOBAL MARKET FOR WIRE THORACIC INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)  | 304             |
| TABLE 265 GLOBAL MARKET FOR FEMORAL NECK NAILING INSTRUMENTS (BONE INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS)              | 304             |
| TABLE 266 GLOBAL MARKET FOR FLEXIBLE MEDULLARY REAMERS (BONE INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS)                    | 304             |
| TABLE 267 GLOBAL MARKET FOR HOOK-END INTRAMEDULLARY NAIL INSTRUMENTS (BONE INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS)      | 305             |
| TABLE 268 GLOBAL MARKET FOR KUNTSCHER INSTRUMENTS (BONE INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS)                         | 305             |
| TABLE 269 GLOBAL MARKET FOR MISCELLANEOUS BONE INSTRUMENTS BY REGION, THROUGH 2018 (\$ MILLIONS)                                   | 305             |
| TABLE 270 GLOBAL MARKET FOR REAMERS (BONE INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS)                                       | 306             |
| TABLE 271 GLOBAL MARKET FOR SCREW HOLDING FORCEPS, TAPS, AND COUNTERSINKS (BONE INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS) | 306             |
| TABLE 272 GLOBAL MARKET FOR SCREWDRIVERS (BONE INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS)                                  | 306             |
| TABLE 273 GLOBAL MARKET FOR WIRE AND BAND TIGHTENING INSTRUMENTS (BONE INSTRUMENTS) BY REGION, THROUGH 2018 (\$ MILLIONS)          | 307             |
| TABLE 274 GLOBAL MARKET FOR WIRE CIRCLING NEEDLES BY REGION, THROUGH 2018 (\$ MILLIONS)  | 307             |
| TABLE 275 GLOBAL MARKET FOR POWER SYSTEMS FOR SPINE AND OTHER BY REGION, THROUGH 2018 (\$ MILLIONS)                                | 307             |
| TABLE 276 GLOBAL MARKET FOR SMALL BONE POWER SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)   | 308             |
| TABLE 277 GLOBAL MARKET FOR NEUROSURGERY POWER SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)                                       | 308             |
| TABLE 278 GLOBAL MARKET FOR SELF-RETAINING RETRACTOR SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)                                 | 308             |
| TABLE 279 GLOBAL MARKET FOR WIRE SAWS BY REGION, THROUGH 2018 (\$ MILLIONS)  | 309             |
| TABLE 280 GLOBAL MARKET FOR OTHER SURGICAL EQUIPMENT BY REGION, THROUGH 2018 (\$ MILLIONS)   | 309             |
| TABLE 281 GLOBAL MARKET FOR STERNAL KNIVES BY REGION, THROUGH 2018 (\$ MILLIONS)   | 309             |
| TABLE 282 GLOBAL MARKET FOR OTHER POWER SYSTEMS BY REGION, THROUGH 2018 (\$ MILLIONS)  | 310             |
| TABLE 283 AESCULAP-PRODUCT PORTFOLIO   | 322             |
| TABLE 284 AESCULAP-FINANCIALS (\$ MILLIONS)  | 323             |
| TABLE 285 AESCULAP-RECENT DEVELOPMENTS   | 324             |
| TABLE 286 ARTHROCARE-PRODUCT PORTFOLIO   | 324             |
| TABLE 287 ARTHROCARE-FINANCIALS (\$ MILLIONS)  | 325             |
| TABLE 288 ARTHROCARE-RECENT DEVELOPMENTS   | 325             |
| TABLE 289 B. BRAUN MELSUNGEN AG-PRODUCT PORTFOLIO  | 326             |
| TABLE 290 B. BRAUN MELSUNGEN AG-FINANCIALS (\$ BILLIONS)   | 327             |

| <b>TABLE HEADING</b>   | <b>PAGE NO.</b> |
|--|-----------------|
| TABLE 291 B. BRAUN MELSUNGEN AG-RECENT DEVELOPMENTS          | 327             |
| TABLE 292 BIEN-AIR MEDICAL TECHNOLOGIES-PRODUCT PORTFOLIO    | 329             |
| TABLE 293 BOSTON SCIENTIFIC-PRODUCT PORTFOLIO                | 330             |
| TABLE 294 BOSTON SCIENTIFIC-FINANCIALS (\$ MILLIONS)         | 331             |
| TABLE 295 BOSTON SCIENTIFIC-RECENT DEVELOPMENTS              | 331             |
| TABLE 296 BRASSELER USA-PRODUCT PORTFOLIO                    | 333             |
| TABLE 297 BRASSELER USA-RECENT DEVELOPMENTS                  | 334             |
| TABLE 298 CAREFUSION-PRODUCT PORTFOLIO                       | 336             |
| TABLE 299 CAREFUSION-FINANCIALS (\$ MILLIONS)                | 337             |
| TABLE 300 CAREFUSION-RECENT DEVELOPMENTS                     | 337             |
| TABLE 301 CODMAN & SHURTLEFF-PRODUCT PORTFOLIO               | 339             |
| TABLE 302 CODMAN & SHURTLEFF-RECENT DEVELOPMENTS             | 339             |
| TABLE 303 CONMED-PRODUCT PORTFOLIO                           | 340             |
| TABLE 304 CONMED-FINANCIALS (\$ MILLIONS)                    | 341             |
| TABLE 305 CONMED-RECENT DEVELOPMENTS                         | 341             |
| TABLE 306 CONMED LINVATEC-PRODUCT PORTFOLIO                  | 342             |
| TABLE 307 CONMED LINVATEC-RECENT DEVELOPMENTS                | 342             |
| TABLE 308 COVIDIEN PLC-PRODUCT PORTFOLIO                     | 343             |
| TABLE 309 COVIDIEN-FINANCIALS (\$ BILLIONS)                  | 344             |
| TABLE 310 COVIDIEN-RECENT DEVELOPMENTS                       | 344             |
| TABLE 311 ERBE USA INC.-PRODUCT PORTFOLIO                    | 346             |
| TABLE 312 ERBE USA INC.-RECENT DEVELOPMENTS                  | 346             |
| TABLE 313 ETHICON INC.-PRODUCT PORTFOLIO                     | 347             |
| TABLE 314 ETHICON INC.-RECENT DEVELOPMENTS                   | 348             |
| TABLE 315 HOLOGIC-PRODUCT PORTFOLIO                          | 349             |
| TABLE 316 HOLOGIC-FINANCIALS (\$ BILLIONS)                   | 349             |
| TABLE 317 HOLOGIC-RECENT DEVELOPMENTS                        | 349             |
| TABLE 318 INTACT MEDICAL-PRODUCT PORTFOLIO                   | 350             |
| TABLE 319 INTACT MEDICAL-RECENT DEVELOPMENTS                 | 351             |
| TABLE 320 MEDTRONIC-PRODUCT PORTFOLIO                        | 351             |
| TABLE 321 MEDTRONIC-FINANCIALS (\$ BILLIONS)                 | 352             |
| TABLE 322 MEDTRONIC-RECENT DEVELOPMENTS                      | 352             |
| TABLE 323 MEGADYNE MEDICAL PRODUCTS INC.-PRODUCT PORTFOLIO   | 354             |
| TABLE 324 MEGADYNE MEDICAL PRODUCTS INC.-RECENT DEVELOPMENTS | 354             |
| TABLE 325 OLYMPUS-PRODUCT PORTFOLIO                          | 355             |
| TABLE 326 OLYMPUS CORP.-FINANCIALS (\$ MILLIONS)             | 356             |
| TABLE 327 OLYMPUS-RECENT DEVELOPMENTS                        | 356             |
| TABLE 328 STRYKER-PRODUCT PORTFOLIO                          | 357             |
| TABLE 329 STRYKER-FINANCIALS (\$ MILLIONS)                   | 357             |
| TABLE 330 STRYKER-RECENT DEVELOPMENTS                        | 357             |
| TABLE 331 U.S. PATENTS AND PATENT APPLICATIONS               | 360             |
| TABLE 332 EUROPEAN PATENTS                                   | 372             |
| TABLE 333 JAPANESE PATENTS                                   | 377             |

**LIST OF FIGURES**

| <b>FIGURE TITLE</b>  | <b>PAGE NO.</b> |
|--|-----------------|
| SUMMARY FIGURE GLOBAL MARKET FOR GENERAL SURGICAL EQUIPMENT BY REGION, 2012-2018 (\$ MILLIONS)         | 7               |
| FIGURE 1 HEALTH CARE ENVIRONMENT IN DEVELOPED VERSUS DEVELOPING ECONOMIES                              | 10              |
| FIGURE 2 KEY FOCUS AREAS OF TECHNOLOGICAL INNOVATION IN THE SURGICAL EQUIPMENT INDUSTRY                | 22              |
| FIGURE 3 SURGICAL EQUIPMENT MARKET ANALYSIS (CAGR%)  | 27              |
| FIGURE 4 TOP STRATEGIES, 2010 TO JULY 2013 (NO.)   | 29              |
| FIGURE 5 PERCENTAGE GROWTH IN THE NUMBER OF SURGERIES PERFORMED IN THE U.S., 2003 TO 2010 AND 2020 (%) | 34              |
| FIGURE 6 SHARE OF RECENT DEVELOPMENTS IN SURGICAL EQUIPMENT BY MARKET PLAYER, 2010 TO JULY 2013 (%)    | 292             |
| FIGURE 7 PATENTS BY COMPANY, 2006 TO JULY 2013 (%)   | 312             |
| FIGURE 8 PATENTS BY TECHNOLOGY, 2006 TO JULY 2013 (%)  | 313             |
| FIGURE 9 U.S. PATENTS BY COMPANY, 2006 TO JULY 2013 (%)  | 314             |
| FIGURE 10 U.S. PATENTS BY TECHNOLOGY, 2006 TO JULY 2013 (%)  | 315             |
| FIGURE 11 EUROPEAN PATENTS BY COMPANY, 2006 TO JULY 2013 (%)   | 317             |
| FIGURE 12 EUROPEAN PATENTS BY TECHNOLOGY, 2006 TO JULY 2013 (%)  | 317             |
| FIGURE 13 JAPANESE PATENTS BY COMPANY, 2006 TO JULY 2013 (%)   | 319             |
| FIGURE 14 JAPANESE PATENTS BY TECHNOLOGY, 2006 TO JULY 2013 (%)  | 319             |