Insulin Delivery Devices Market to 2019

Simplified Pump Solutions and Low Cost Pens Represent Distinct Regional Growth Drivers
The report covers both type 1 and type 2 diabetes mellitus for estimation of the global insulin delivery market.

The report begins with an executive summary capturing the major factors driving the growth of the global insulin delivery market.

Chapter three provides an overview of type 1 and type 2 diabetes mellitus.

Chapter four provides a brief analysis on national prevalence of diabetes mellitus in key countries.

Chapter five provides an overview of the Insulin delivery devices that are included in the scope of the report.

Chapter six provides information on the market size for the historic period (2005–2012) and the forecast period (2012–2019). The chapter also provides information on key company shares in the global insulin delivery market. The chapter discusses the key trends and market dynamics that are expected to impact future growth.

Chapter seven provides segment analysis of insulin pens, insulin pumps, insulin syringes and traditional insulin pump accessories. The market sizes for the historic and forecast period are provided for each segment.

Chapter eight gives information on the market size for the historic and forecast period for the US, Japan, Germany, UK, France, Brazil, Italy, China, Canada, Australia, Spain and India, with cross-country analysis.

Chapter nine provides information on the healthcare reimbursement system for the US, Europe and Asia-Pacific.

Chapter 10 comprises profiles of the leading Insulin delivery devices companies, outlining their products, features and benefits.

Chapter 11 focuses on the pipeline products for each segment. The key pipeline products are listed and discussed in detail alongside product approval and expected launch dates.

Chapter 12 discusses the deals that took place in the Insulin delivery devices industry between 2009 and 2013.
Executive Summary

Global Insulin Delivery Devices Market to see Significant Growth during the Forecast Period

The following figure shows the projected revenue growth of the global insulin delivery market during the 2012–2019 period.

![Insulin Delivery Devices Market, Global, Revenue ($bn), 2012–2019](image)

<table>
<thead>
<tr>
<th>Market scenario</th>
<th>Base year market size (2012)</th>
<th>Projected market size by 2019</th>
<th>Base year market growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forecast CAGR</td>
<td>Market share held by top four companies</td>
<td>Extent of technical change</td>
<td></td>
</tr>
</tbody>
</table>

Source: GBI Research, Proprietary Database [Accessed February 12, 2014]

CAGR: Compound Annual Growth Rate

The global insulin delivery devices market was valued at $XX billion in 2012 and is forecast to reach $XX billion by 2019, at a CAGR of XX%. Growth in developed economies such as the US and Europe is attributed to an increasing preference for insulin pumps and the uptake of technical advances such as artificial pancreas devices. Supply-side initiatives aim to develop artificial pancreas devices that closely mimic the pancreas by using rapid-acting insulin and multiple hormone-secreting devices for the effective control of blood glucose. The growth in developing economies is attributed to the high prevalence of diabetes and low penetration of insulin delivery devices in these countries.

Collaborations among companies and research foundations such as the Juvenile Diabetes Research Foundation (JDRF) help foster innovation in the diabetes care devices market. Many of these collaborations aim to develop artificial pancreas devices that can effectively replace the pancreas, ensuring the effective management of diabetes.

Emerging economies such as India and China are expected to grow at the fastest pace during the 2012–2019 forecast period. While developed economies will witness increasing uptake of technically advanced devices, emerging economies will continue to see increasing uptake for conventional insulin delivery devices such as insulin pens, due to their lower cost.

New Entrants Act as Catalysts in Transformation from a Physician-Driven to Consumer-Driven Market

New entrants such as Insulet Corporation and Asante act as catalysts in transformation of the insulin pumps from being a physician-driven to a consumer-driven market. The change of perception of insulin pumps from being a medical device to a commodity is increasingly observed in developed economies such as the US. This is vindicated by companies such as Insulet and Asante, who have developed insulin pumps with simplified solutions that save time in administration. For instance, Asante Snap is a recently launched insulin pump that has a unique approach to using pre-filled cartridges that simplifies the use of an insulin pump. So far, the company has been targeting new patients who shift from conventional Multiple Daily Injection (MDI) to insulin pump therapy. The use of pre-filled cartridges eliminates the need for insulin reservoirs and reduces the weight of the insulin pump by XX%. These glass pre-filled cartridges are proven to be an effective way of storing insulin and maintaining it at a high quality. The Asante Snap automatically fills the tubing, which results in time savings. The device’s battery does not need to be replaced or charged, which increases patient convenience and saves the time and cost involved in charging or replacing the pump battery.
1 Table of Contents

1 Table of Contents........................................................................................................................................ 8
1.1 List of Tables........................................................................................................................................... 12
1.2 List of Figures......................................................................................................................................... 14
2 Introduction............................................................................................................................................... 16
3 Diabetes – Disease Overview..................................................................................................................... 17
  3.1 Types of Diabetes.................................................................................................................................. 17
    3.1.1 Type 1 Diabetes................................................................................................................................. 17
    3.1.2 Type 2 Diabetes................................................................................................................................. 17
    3.1.3 Gestational Diabetes......................................................................................................................... 17
    3.1.4 Signs and Symptoms....................................................................................................................... 17
    3.1.5 Diabetes Diagnosis......................................................................................................................... 18
4 Diabetes – Epidemiology........................................................................................................................... 19
5 Global Insulin Delivery Devices Market: Device Overview...................................................................... 20
  5.1 Insulin Pen............................................................................................................................................. 20
    5.1.1 Reusable Pen.................................................................................................................................... 20
    5.1.2 Disposable Pen................................................................................................................................. 20
    5.1.3 Pen Needle...................................................................................................................................... 20
  5.2 Insulin Pump.......................................................................................................................................... 21
    5.2.1 Traditional Insulin Pump................................................................................................................ 21
    5.2.2 Disposable Insulin Pump................................................................................................................ 21
  5.3 Insulin Syringe...................................................................................................................................... 21
  5.4 Traditional Insulin Pump Accessories................................................................................................. 21
  5.5 Comparison of Insulin Delivery Devices............................................................................................. 21
6 Global Insulin Delivery Devices Market: Market Characterization.......................................................... 23
  6.1 Global Insulin Delivery Devices Market, Revenue (Sbn), 2005–2012................................................... 23
  6.3 Insulin Delivery Devices Market, Global, Key Company Shares, 2012............................................. 25
    6.3.1 Global............................................................................................................................................ 26
    6.3.2 North America................................................................................................................................. 26
    6.3.3 Europe.......................................................................................................................................... 27
    6.3.4 Asia-Pacific.................................................................................................................................... 27
  6.4 Insulin Delivery Devices Market, Key Trends...................................................................................... 27
    6.4.1 Companies Move Closer to Developing Fully Automated Artificial Pancreas System............... 28
    6.4.2 Collaborations Foster Innovation in Insulin Delivery Devices Market........................................ 29
    6.4.3 Inhaled Rapid-Acting Insulin Studied in Research of Artificial Pancreas System...................... 30
  6.5 Market Dynamics.................................................................................................................................. 31
    6.5.1 Market Drivers............................................................................................................................... 31
    6.5.2 Market Restraints........................................................................................................................... 37
7 Global Insulin Delivery Devices Market: Segment Analysis and Forecasts.............................................. 39
  7.1 Insulin Pens Market, Global, Revenue, 2005–2012............................................................................. 39
  7.2 Insulin Pens Market, Global, Revenue, 2012–2019............................................................................ 40
  7.3 Insulin Pumps Market, Global, Revenue, 2005–2012....................................................................... 41
  7.4 Insulin Pumps Market, Global, Revenue, 2012–2019....................................................................... 42
  7.5 Insulin Syringes Market, Global, Revenue, 2005–2012................................................................. 43
  7.6 Insulin Syringes Market, Global, Revenue, 2012–2019................................................................. 44
  7.7 Traditional Insulin Pump Accessories Market, Global, Revenue, 2005–2012.............................. 45
  7.8 Traditional Insulin Pump Accessories Market, Global, Revenue, 2012–2019.............................. 46
8 Global Insulin Delivery Devices Market: Country Analysis and Forecasts.............................................. 47
  8.1 Insulin Delivery Devices Market: Cross-country Analysis................................................................. 47
  8.2 Historic and Forecast Revenue and Volume, by Country................................................................. 48
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table of Contents</td>
<td>1</td>
</tr>
<tr>
<td>9.1 Global Insulin Delivery Devices Market: Reimbursement System</td>
<td>84</td>
</tr>
<tr>
<td>9.1.1 US</td>
<td>84</td>
</tr>
<tr>
<td>9.2 Europe</td>
<td>84</td>
</tr>
<tr>
<td>9.2.1 Germany</td>
<td>84</td>
</tr>
<tr>
<td>9.2.2 France</td>
<td>84</td>
</tr>
<tr>
<td>9.2.3 Italy</td>
<td>84</td>
</tr>
<tr>
<td>9.2.4 Spain</td>
<td>84</td>
</tr>
<tr>
<td>9.2.5 UK</td>
<td>84</td>
</tr>
<tr>
<td>9.2.6 Denmark</td>
<td>84</td>
</tr>
<tr>
<td>9.2.7 Norway</td>
<td>85</td>
</tr>
<tr>
<td>9.2.8 Sweden</td>
<td>85</td>
</tr>
<tr>
<td>9.2.9 Belgium</td>
<td>85</td>
</tr>
<tr>
<td>9.2.10 Netherlands</td>
<td>85</td>
</tr>
<tr>
<td>9.2.11 Luxembourg</td>
<td>85</td>
</tr>
<tr>
<td>9.3 Asia-Pacific</td>
<td>85</td>
</tr>
<tr>
<td>10 Global Insulin Delivery Devices Market: Competitive Landscape</td>
<td>86</td>
</tr>
<tr>
<td>10.1 Comparison of Leading Insulin Pumps by Size and Color Options, 2014</td>
<td>86</td>
</tr>
<tr>
<td>10.2 Comparison of Leading Insulin Pumps by Basal and Bolus Specifications, 2014</td>
<td>87</td>
</tr>
<tr>
<td>10.3 Comparison of Leading Insulin Pumps by Bolus Calculator Options and Operation, 2014</td>
<td>88</td>
</tr>
<tr>
<td>10.4 Novo Nordisk (Subsidiary of Novo A/S)</td>
<td>88</td>
</tr>
<tr>
<td>10.4.1 Business Overview</td>
<td>88</td>
</tr>
<tr>
<td>10.4.2 Marketed Products</td>
<td>89</td>
</tr>
<tr>
<td>10.5 Sanofi</td>
<td>89</td>
</tr>
<tr>
<td>10.5.1 Business Overview</td>
<td>89</td>
</tr>
<tr>
<td>10.5.2 Marketed Products</td>
<td>89</td>
</tr>
<tr>
<td>10.6 Eli Lilly</td>
<td>89</td>
</tr>
<tr>
<td>10.6.1 Business Overview</td>
<td>89</td>
</tr>
<tr>
<td>10.6.2 Marketed Products</td>
<td>90</td>
</tr>
<tr>
<td>10.7 Medtronic</td>
<td>90</td>
</tr>
<tr>
<td>10.7.1 Business Overview</td>
<td>90</td>
</tr>
<tr>
<td>10.7.2 Marketed Products</td>
<td>90</td>
</tr>
<tr>
<td>10.8 Becton, Dickinson and Company</td>
<td>90</td>
</tr>
<tr>
<td>10.8.1 Business Overview</td>
<td>90</td>
</tr>
<tr>
<td>10.8.2 Marketed Products</td>
<td>91</td>
</tr>
<tr>
<td>10.9 Animas</td>
<td>91</td>
</tr>
<tr>
<td>10.9.1 Business Overview</td>
<td>91</td>
</tr>
<tr>
<td>10.9.2 Marketed Products</td>
<td>91</td>
</tr>
<tr>
<td>10.10 F. Hoffmann-La Roche</td>
<td>91</td>
</tr>
<tr>
<td>10.10.1 Business Overview</td>
<td>91</td>
</tr>
<tr>
<td>10.10.2 Marketed Products</td>
<td>92</td>
</tr>
</tbody>
</table>
11.1 Insulet .......................................................................................................................... 92
  11.1.1 Business Overview ............................................................................................... 92
  11.1.2 Marked Products ................................................................................................. 92
11.12 Asante Solutions ........................................................................................................ 92
  11.12.1 Business Overview ............................................................................................ 92
11.13 Abbott Laboratories .................................................................................................. 93
  11.13.1 Business Overview ............................................................................................ 93
  11.13.2 Marked Products ............................................................................................... 93
11.14 Ypsomed .................................................................................................................... 93
  11.14.1 Business Overview ............................................................................................ 93
  11.14.2 Marked Products ............................................................................................... 93
11.15 Owen Mumford .......................................................................................................... 94
  11.15.1 Business Overview ............................................................................................ 94
  11.15.2 Marked Products ............................................................................................... 94
11.16 Bioject Medical Technologies .................................................................................. 94
  11.16.1 Business Overview ............................................................................................ 94
  11.16.2 Marked Products ............................................................................................... 94
11.17 Injex - Equidyne Systems ........................................................................................ 95
  11.17.1 Business Overview ............................................................................................ 95
  11.17.2 Marked Products ............................................................................................... 95
11.18 Antares Pharma ......................................................................................................... 95
  11.18.1 Business Overview ............................................................................................ 95
  11.18.2 Marked Products ............................................................................................... 95
11.19 Tandem Diabetes Care .............................................................................................. 96
  11.19.1 Business Overview ............................................................................................ 96
  11.19.2 Marked Products ............................................................................................... 96
11.20 Tonghua Dongbao Pharmaceutical ......................................................................... 96
  11.20.1 Business Overview ............................................................................................ 96
  11.20.2 Marked Products ............................................................................................... 96
11.21 Shanghai Fosun Pharmaceutical ............................................................................... 96
  11.21.1 Business Overview ............................................................................................ 96
  11.21.2 Marked Products ............................................................................................... 97

11 Global Insulin Delivery Devices Market: Product Pipeline Analysis ........................................................................... 98
  11.1 Insulin Delivery Devices Market: List of Pipeline Products ............................................................................. 99
  11.1.1 Insulin Pumps, List of Pipeline Products ........................................................................... 99
  11.1.2 Insulin Pens, List of Pipeline Products ......................................................................... 100
  11.2 Insulin Delivery Devices Market: Profiles of Key Pipeline Products ................................................................. 100
  11.2.1 5th Generation CGM Sensor with t:sim Insulin Delivery System ....................................................... 100
  11.2.2 Accu-Chek Insight .................................................................................................. 100
  11.2.3 Angel Touch .......................................................................................................... 101
  11.2.4 Animas Vibe Insulin Pump and CGM System ...................................................................................... 101
  11.2.5 Bolus Patch ............................................................................................................ 101
  11.2.6 Cellnovo Wireless Insulin Pump System ...................................................................................... 102
  11.2.7 Freehand Patch Pump ............................................................................................. 102
  11.2.8 Insulin Pump ........................................................................................................... 103
  11.2.9 InsuPatch Device ................................................................................................... 103
  11.2.10 Integrated CGM with Next Gen OmniPod System PDM ......................................................... 103
  11.2.11 Jewel Pump .......................................................................................................... 104
  11.2.12 La Fenice E ............................................................................................................ 104
  11.2.13 La Fenice V ............................................................................................................ 105
  11.2.14 Lanzi ..................................................................................................................... 105
  11.2.15 Mini Pump ............................................................................................................. 105
# Table of Contents

## 13 Appendix

13.1 Definitions ........................................................................................................... 116
  13.1.1 Insulin Delivery ............................................................................................ 116
13.2 Abbreviations ....................................................................................................... 117
13.3 Bibliography ........................................................................................................... 118

13.4 Research Methodology ......................................................................................... 120
  13.4.1 Secondary Research ..................................................................................... 120
  13.4.2 Primary Research ........................................................................................ 120
  13.4.3 Models ......................................................................................................... 121
  13.4.4 Forecasts ...................................................................................................... 121
  13.4.5 Expert Panel ............................................................................................... 121

13.5 Contact Us ............................................................................................................ 121
13.6 Disclaimer ............................................................................................................. 121

## 12 Global Insulin Delivery Devices Market: Consolidation Landscape ........................................... 113

12.1 Deals Summary (2004–2013) ............................................................................... 113
  12.1.1 LifeScan Acquires Calibra Medical ................................................................ 113
  12.1.2 Roche Holding Acquires Medingo from Eiron Electronic Industries, 2010 .......................... 114
  12.1.3 Insulet Enters into Co-Development Agreement with Eli Lilly, 2013 ...................... 114
  12.1.4 Tandem Diabetes Enters into Co-Development Agreement with Juvenile Diabetes Research Foundation for Dual-Chamber Infusion Pump, 2013 ......................................................... 114
  12.1.5 Juvenile Diabetes Research Foundation Extends Co-Development Agreement with Becton, Dickinson, 2012 ........................................................................................................ 114
  12.1.6 Bioton and SciGen Amend Distribution Agreement with Bayer HealthCare, 2012 ............... 115
  12.1.7 Insulet Expands Distribution Agreement with Ypsomed Holding, 2012 .................... 115

12.2 Key Deals (2009–2013) ....................................................................................... 113
  12.2.1 LifeScan Acquires Calibra Medical ............................................................... 113
  12.2.2 Roche Holding Acquires Medingo from Eiron Electronic Industries, 2010 .......................... 114
  12.2.3 Insulet Enters into Co-Development Agreement with Eli Lilly, 2013 ...................... 114
  12.2.4 Tandem Diabetes Enters into Co-Development Agreement with Juvenile Diabetes Research Foundation for Dual-Chamber Infusion Pump, 2013 ......................................................... 114
  12.2.5 Juvenile Diabetes Research Foundation Extends Co-Development Agreement with Becton, Dickinson, 2012 ........................................................................................................ 114
  12.2.6 Bioton and SciGen Amend Distribution Agreement with Bayer HealthCare, 2012 ............... 115
  12.2.7 Insulet Expands Distribution Agreement with Ypsomed Holding, 2012 .................... 115

## 11 Definitions

11.1 BFDA .................................................................................................................... 111
11.2 CMI ....................................................................................................................... 111
11.3 FDA ....................................................................................................................... 111
11.4 GEH ....................................................................................................................... 111
11.5 HIM....................................................................................................................... 111
11.6 IATF ....................................................................................................................... 111
11.7 ISO....................................................................................................................... 111
11.8 MAP ....................................................................................................................... 111
11.9 MDS ..................................................................................................................... 111
11.10 MMF .................................................................................................................. 111
11.11 NME .................................................................................................................. 111
11.12 ORS .................................................................................................................... 111
11.13 POI ...................................................................................................................... 111
11.14 POC .................................................................................................................... 111
11.15 R&D ................................................................................................................... 111
11.16 RFS ..................................................................................................................... 111
11.17 RNC .................................................................................................................... 111
11.18 SQA ................................................................................................................... 111
11.19 TAP .................................................................................................................... 111
11.20 TCO ................................................................................................................... 111
11.21 TPA .................................................................................................................... 111
11.22 TPR .................................................................................................................... 111
11.23 TXH ................................................................................................................... 111
11.24 UDI ..................................................................................................................... 111
11.25 VAE ................................................................................................................... 111
11.26 VCI .................................................................................................................... 111
11.27 VCP ................................................................................................................... 111
11.28 VEC ................................................................................................................... 111
11.29 VFM ................................................................................................................... 111
11.30 VLF ................................................................................................................... 111
11.31 VSI ................................................................................................................... 111
11.32 VTV ................................................................................................................... 111
11.33 WPO ................................................................................................................... 111

## 12 Abbreviations

12.1.1 LifeScan Acquires Calibra Medical ............................................................... 113
12.1.2 Roche Holding Acquires Medingo from Eiron Electronic Industries, 2010 .......................... 114
12.1.3 Insulet Enters into Co-Development Agreement with Eli Lilly, 2013 ...................... 114
12.1.4 Tandem Diabetes Enters into Co-Development Agreement with Juvenile Diabetes Research Foundation for Dual-Chamber Infusion Pump, 2013 ......................................................... 114
12.1.5 Juvenile Diabetes Research Foundation Extends Co-Development Agreement with Becton, Dickinson, 2012 ........................................................................................................ 114
12.1.6 Bioton and SciGen Amend Distribution Agreement with Bayer HealthCare, 2012 ............... 115
12.1.7 Insulet Expands Distribution Agreement with Ypsomed Holding, 2012 .................... 115

## 13 Bibliography

13.1.1 LifeScan Acquires Calibra Medical ............................................................... 113
12.1.2 Roche Holding Acquires Medingo from Eiron Electronic Industries, 2010 .......................... 114
12.1.3 Insulet Enters into Co-Development Agreement with Eli Lilly, 2013 ...................... 114
12.1.4 Tandem Diabetes Enters into Co-Development Agreement with Juvenile Diabetes Research Foundation for Dual-Chamber Infusion Pump, 2013 ......................................................... 114
12.1.5 Juvenile Diabetes Research Foundation Extends Co-Development Agreement with Becton, Dickinson, 2012 ........................................................................................................ 114
12.1.6 Bioton and SciGen Amend Distribution Agreement with Bayer HealthCare, 2012 ............... 115
12.1.7 Insulet Expands Distribution Agreement with Ypsomed Holding, 2012 .................... 115

## 14 Contact Us

14.1 Contact Details ..................................................................................................... 116
14.2 Primary Research ................................................................................................. 120
14.3 Secondary Research ............................................................................................. 120
14.4 Models .................................................................................................................. 121
14.5 Forecasts ............................................................................................................... 121
14.6 Expert Panel ......................................................................................................... 121
14.7 Disclaimer ............................................................................................................ 121
1.1 List of Tables

Table 1: Insulin Delivery Devices Market, Global, Diabetes National Prevalence (%) and Patient Population (million), 2013 ................................................................. 19
Table 2: Insulin Delivery Devices Market, Global, Revenue ($bn), 2005–2012 .................................................. 23
Table 3: Insulin Delivery Devices Market, Global, Revenue ($bn), 2012–2019 .................................................. 24
Table 4: Insulin Delivery Devices Market, Global, Key Company Share by Region (%), 2012 .................. 26
Table 5: Insulin Delivery Devices Market, Number of Patients in 10 Largest Markets (Aged 29–79 Years), 2013–2035 ................................................................. 32
Table 6: Insulin Delivery Devices Market, Health Expenditure due to Diabetes (20–79 Years) and Diabetes Population, 2013 .................................................................. 33
Table 7: Insulin Pens Market, Global, Revenue ($bn), 2005–2012 ............................................................. 39
Table 8: Insulin Pens Market, Global, Revenue Forecast ($bn), 2012–2019 .................................................. 40
Table 9: Insulin Pumps Market, Global, Revenue ($m), 2005–2012 ............................................................. 41
Table 10: Insulin Pumps Market, Global, Revenue ($m), 2012–2019 ............................................................. 41
Table 11: Insulin Syringes Market, Global, Revenue ($m), 2005–2012 .......................................................... 43
Table 12: Insulin Syringes Market, Global, Revenue Forecast ($m), 2012–2019 ........................................... 44
Table 13: Traditional Insulin Pump Accessories Market, Global, Revenue ($m), 2005–2012 ........... 45
Table 14: Traditional Insulin Pump Accessories Market, Global, Revenue Forecast ($m), 2012–2019 .... 45
Table 15: Insulin Delivery Devices Market, Global, Cross-country Analysis, CAGR (%), 2005–2019 .... 47
Table 16: Insulin Delivery Devices Market, US, Revenue ($bn), Volume (million), 2005–2012 ........ 49
Table 17: Insulin Delivery Devices Market, US, Revenue ($bn), Volume (million), 2012–2019 ........ 49
Table 18: Insulin Delivery Devices Market, Japan, Revenue ($m), Volume (’,000), 2005–2012 ....... 52
Table 19: Insulin Delivery Devices Market, Japan, Revenue ($m), Volume (’,000), 2012–2019 ....... 52
Table 20: Insulin Delivery Devices Market, Germany, Revenue ($m), Volume (’,000), 2005–2012 .... 55
Table 21: Insulin Delivery Devices Market, Germany, Revenue ($m), Volume (’,000), 2012–2019 .... 55
Table 22: Insulin Delivery Devices Market, France, Revenue ($m), Volume (’,000), 2005–2012 ...... 58
Table 23: Insulin Delivery Devices Market, France, Revenue ($m), Volume (’,000), 2012–2019 ...... 58
Table 24: Insulin Delivery Devices Market, UK, Revenue ($m), Volume (’,000), 2005–2012 ...... 61
Table 25: Insulin Delivery Devices Market, UK, Revenue ($m), Volume (’,000), 2012–2019 ...... 61
Table 26: Insulin Delivery Devices Market, Spain, Revenue ($m), Volume (’,000), 2005–2012 ...... 64
Table 27: Insulin Delivery Devices Market, Spain, Revenue ($m), Volume (’,000), 2012–2019 ...... 64
Table 28: Insulin Delivery Devices Market, Italy, Revenue ($m), Volume (’,000), 2005–2012 ...... 67
Table 29: Insulin Delivery Devices Market, Italy, Revenue ($m), Volume (’,000), 2012–2019 ...... 67
Table 30: Insulin Delivery Devices Market, Canada, Revenue ($m), Volume (’,000), 2005–2012 ... 70
Table 31: Insulin Delivery Devices Market, Canada, Revenue ($m), Volume (’,000), 2012–2019 ... 70
Table 32: Insulin Delivery Devices Market, China, Revenue ($m), Volume (’,000), 2005–2012 .... 73
Table 33: Insulin Delivery Devices Market, China, Revenue ($m), Volume (’,000), 2012–2019 .... 73
Table 34: Insulin Delivery Devices Market, Australia, Revenue ($m), Volume (’,000), 2005–2012 ...... 76
Table 35: Insulin Delivery Devices Market, Australia, Revenue ($m), Volume (’,000), 2012–2019 ...... 76
Table 36: Insulin Delivery Devices Market, India, Revenue ($m), Volume (’,000), 2005–2012 ...... 79
Table 37: Insulin Delivery Devices Market, India, Revenue ($m), Volume (’,000), 2012–2019 ...... 79
Table 38: Insulin Delivery Devices Market, Brazil, Revenue ($m), Volume (’,000), 2005–2012 ...... 82
Table 39: Insulin Delivery Devices Market, Brazil, Revenue ($m), Volume (’,000), 2012–2019 ...... 82
Table 40: Novo Nordisk, Key Marketed Products, 2013 .............................................................. 89
Table 41: Sanofi, Key Marketed Products, 2013 .............................................................. 89
Table 42: Eli Lilly, Key Marketed Products, 2013 .............................................................. 90
Table 43: Medtronic, Key Marketed Products, 2013 .............................................................. 90
Table 44: Becton, Dickinson and Company, Key Marketed Products, 2013 ......................... 91
Table 45: Animas, Key Marketed Products, 2013 .............................................................. 91
Table 46: F. Hoffmann-La Roche, Key Marketed Products, 2013 ........................................ 92
Table 47: Insulet, Key Marketed Products, 2013 .............................................................. 92
Table 48: Asante Solutions, Key Marketed Products, 2013 ........................................ 92
Table 49: Abbott Laboratories, Key Marketed Products, 2013 ........................................ 93
Table 50: Ypsomed Holding AG, Key Marketed Products, 2013 ........................................ 93
Table 51: Owen Mumford, Key Marketed Products, 2014 ........................................ 94
Table 52: Bioject Medical Technologies, Key Marketed Products, 2014 ......................... 94
Table 53: INJEX - Equidyne Systems, Key Marketed Products, 2014 ......................... 95
Table 54: Antares Pharma, Key Marketed Products, 2014 ........................................ 95
<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>55</td>
<td>Tandem Diabetes Care, Key Marketed Products, 2014</td>
<td>96</td>
</tr>
<tr>
<td>56</td>
<td>Tonghua Dongbao Pharmaceutical, Key Marketed Products, 2014</td>
<td>96</td>
</tr>
<tr>
<td>57</td>
<td>Shanghai Fosun Pharmaceutical, Key Marketed Products, 2014</td>
<td>97</td>
</tr>
<tr>
<td>58</td>
<td>Insulin Pumps Market, Global, List of Pipeline Products, 2014</td>
<td>99</td>
</tr>
<tr>
<td>59</td>
<td>Insulin Pens Market, Global, List of Pipeline Products, 2014</td>
<td>100</td>
</tr>
<tr>
<td>60</td>
<td>5th Generation CGM Sensor With t:slim Insulin Delivery System, Product Status, 2014</td>
<td>100</td>
</tr>
<tr>
<td>61</td>
<td>Accu-Chek Insight, Product Status, 2014</td>
<td>100</td>
</tr>
<tr>
<td>62</td>
<td>Angel Touch, Product Status, 2014</td>
<td>101</td>
</tr>
<tr>
<td>63</td>
<td>Animas Vibe Insulin Pump and CGM System, Product Status, 2014</td>
<td>101</td>
</tr>
<tr>
<td>64</td>
<td>Bolus Patch, Product Status, 2014</td>
<td>101</td>
</tr>
<tr>
<td>65</td>
<td>Cellino Wireless Insulin Pump System, Product Status, 2014</td>
<td>102</td>
</tr>
<tr>
<td>66</td>
<td>Freehand Patch Pump, Product Status, 2014</td>
<td>102</td>
</tr>
<tr>
<td>67</td>
<td>Insulin Pump, Product Status, 2014</td>
<td>103</td>
</tr>
<tr>
<td>68</td>
<td>InsuPatch Device, Product Status, 2014</td>
<td>103</td>
</tr>
<tr>
<td>69</td>
<td>Integrated CGM With Next Gen OmniPod System PDM, Product Status, 2014</td>
<td>103</td>
</tr>
<tr>
<td>70</td>
<td>Jewel Pump, Product Status, 2014</td>
<td>104</td>
</tr>
<tr>
<td>71</td>
<td>La Fenice E, Product Status, 2014</td>
<td>104</td>
</tr>
<tr>
<td>72</td>
<td>La Fenice V, Product Status, 2014</td>
<td>105</td>
</tr>
<tr>
<td>73</td>
<td>Lanzi, Product Status, 2014</td>
<td>105</td>
</tr>
<tr>
<td>74</td>
<td>Mini Pump, Product Status, 2014</td>
<td>105</td>
</tr>
<tr>
<td>75</td>
<td>MiniMed 640G, Product Status, 2014</td>
<td>106</td>
</tr>
<tr>
<td>76</td>
<td>Minil, Product Status, 2014</td>
<td>106</td>
</tr>
<tr>
<td>77</td>
<td>OmniPod Insulin Pump – New Version, Product Status, 2014</td>
<td>106</td>
</tr>
<tr>
<td>78</td>
<td>Onetouch Ping Verio Insulin Pump with Meter Remote, Product Status, 2014</td>
<td>107</td>
</tr>
<tr>
<td>79</td>
<td>OneTouch with Next Gen Omnipod, Product Status, 2014</td>
<td>107</td>
</tr>
<tr>
<td>80</td>
<td>Patch Pump-1, Product Status, 2014</td>
<td>107</td>
</tr>
<tr>
<td>81</td>
<td>Patch Pump-2, Product Status, 2014</td>
<td>108</td>
</tr>
<tr>
<td>82</td>
<td>Patch Pump-3, Product Status, 2014</td>
<td>108</td>
</tr>
<tr>
<td>83</td>
<td>Spring Insulin Pump, Product Status, 2014</td>
<td>108</td>
</tr>
<tr>
<td>84</td>
<td>Spring Zone Hybrid Patch Pump, Product Status, 2014</td>
<td>109</td>
</tr>
<tr>
<td>85</td>
<td>U-Strip Insulin Patch, Product Status, 2014</td>
<td>109</td>
</tr>
<tr>
<td>86</td>
<td>Exenatide Once Weekly Pen Device, Product Status, 2014</td>
<td>109</td>
</tr>
<tr>
<td>87</td>
<td>Fix-Flex Device, Product Status, 2014</td>
<td>110</td>
</tr>
<tr>
<td>88</td>
<td>G-Pen, Product Status, 2014</td>
<td>110</td>
</tr>
<tr>
<td>89</td>
<td>G-Pen Mini, Product Status, 2014</td>
<td>110</td>
</tr>
<tr>
<td>90</td>
<td>Insulin Guard Self-Injector Safety Needle, Product Status, 2014</td>
<td>111</td>
</tr>
<tr>
<td>91</td>
<td>JuniorSTAR, Product Status, 2014</td>
<td>111</td>
</tr>
<tr>
<td>92</td>
<td>La Fenice Pen, Product Status, 2014</td>
<td>111</td>
</tr>
<tr>
<td>93</td>
<td>Levemir FlexTouch, Product Status, 2014</td>
<td>112</td>
</tr>
<tr>
<td>94</td>
<td>Next Generation Pen Needle II, Product Status, 2014</td>
<td>112</td>
</tr>
<tr>
<td>95</td>
<td>NovoLog FlexTouch, Product Status, 2014</td>
<td>112</td>
</tr>
</tbody>
</table>
1.2 List of Figures

Figure 1: Insulin Delivery Devices Market, Insulin Pump Timeline, 1963–2011 ........................................16
Figure 2: Insulin Delivery Devices Market, Device Overview .............................................................20
Figure 3: Insulin Delivery Devices Market, Comparison of Insulin Therapy ........................................22
Figure 4: Insulin Delivery Devices Market, Global, Revenue ($bn), 2005–2012 .....................................23
Figure 5: Insulin Delivery Devices Market, Global, Revenue ($bn), 2012–2019 .....................................24
Figure 6: Insulin Delivery Devices Market, Global, Key Company Share by Region (%), 2012 .............25
Figure 7: Insulin Delivery Devices Market, Market Trends .................................................................27
Figure 8: Insulin Delivery Devices Market, Ongoing/Completed Studies on Artificial Pancreas .........28
Figure 9: Insulin Delivery Devices Market, Leading Integrated CGM-Insulin Pump Brands, 2013 ......29
Figure 10: Insulin Delivery Devices Market, Market Dynamics ............................................................31
Figure 11: Insulin Delivery Devices Market, Number of Patients in 10 Largest Markets (Aged 29–79 Years), 2013–2035 ................................................................................................................................................31
Figure 12: Insulin Delivery Devices Market, Health Expenditure due to Diabetes (20–79 Years) and Diabetes Population, 2013 ..................................................................................................................33
Figure 13: Insulin Delivery Devices Market, Clinical Studies Indicating Safety and Efficacy of Insulin Pumps ........................................................................................................................................34
Figure 14: Insulin Delivery Devices Market, Annual Cost of Insulin Pumps and Supplies and Annual Cost of Treatment for Serious Complications in Alberta, Canada, 2012 and 2032 ........................................35
Figure 15: Insulin Delivery Devices Market, Clinical Studies Indicating Advantages of Insulin Pens Over Syringes ...........................................................................................................................................36
Figure 16: Insulin Delivery Devices Market, Patient Compliance Analysis for Insulin Pens and Insulin Syringes ........................................................................................................................................37
Figure 17: Insulin Pens Market, Global, Revenue ($bn), 2005–2012 ....................................................39
Figure 18: Insulin Pens Market, Global, Revenue Forecast ($bn), 2012–2019 ......................................40
Figure 19: Insulin Pumps Market, Global, Revenue ($mn), 2005–2012 ................................................41
Figure 20: Insulin Pumps Market, Global, Revenue Forecast ($mn), 2012–2019 ..............................42
Figure 21: Insulin Syringes Market, Global, Revenue ($mn), 2005–2012 .............................................43
Figure 22: Insulin Syringes Market, Global, Revenue Forecast ($mn), 2012–2019 ............................44
Figure 23: Traditional Insulin Pump Accessories Market, Global, Revenue ($mn), 2005–2012 ......45
Figure 24: Traditional Insulin Pump Accessories Market, Global, Revenue Forecast ($mn), 2012–2019 ....46
Figure 25: Insulin Delivery Devices Market, Global, Cross-country Analysis, CAGR (%), 2005–2019 ....47
Figure 26: Insulin Delivery Devices Market, US, Cross-segment Analysis, CAGR (%), 2005–2019 ....48
Figure 27: Insulin Delivery Devices Market, US, Revenue ($mn), Volume (million), 2005–2019 ...........49
Figure 28: Insulin Delivery Devices Market, Japan, Cross-segment Analysis, CAGR (%), 2005–2019 ....51
Figure 29: Insulin Delivery Devices Market, Japan, Revenue and Volume (000s), 2005–2019 ..........51
Figure 30: Insulin Delivery Devices Market, Germany, Cross-segment Analysis, CAGR (%), 2005–2019 ....53
Figure 31: Insulin Delivery Devices Market, Germany, Revenue ($mn), Volume (000), 2005–2019 ......54
Figure 32: Insulin Delivery Devices Market, France, Cross-segment Analysis, CAGR (%), 2005–2019 ....56
Figure 33: Insulin Delivery Devices Market, France, Revenue ($mn), Volume (‘000), 2005–2019 .......57
Figure 34: Insulin Delivery Devices Market, UK, Cross-segment Analysis, CAGR (%), 2005–2019 ......59
Figure 35: Insulin Delivery Devices Market, UK, Revenue ($mn), Volume (‘000), 2005–2019 ..........60
Figure 36: Insulin Delivery Devices Market, Spain, Cross-segment Analysis, CAGR (%), 2005–2019 ...62
Figure 37: Insulin Delivery Devices Market, Spain, Revenue ($mn), Volume (‘000), 2005–2019 ........63
Figure 38: Insulin Delivery Devices Market, Italy, Cross-segment Analysis, CAGR (%), 2005–2019 ....65
Figure 39: Insulin Delivery Devices Market, Italy, Revenue ($mn), Volume (‘000), 2005–2019 ..........66
Figure 40: Insulin Delivery Devices Market, Canada, Cross-segment Analysis, CAGR (%), 2005–2019 ....68
Figure 41: Insulin Delivery Devices Market, Canada, Revenue ($mn), Volume (‘000), 2005–2019 ......69
Figure 42: Insulin Delivery Devices Market, China, Cross-segment Analysis, CAGR (%), 2005–2019 ....71
Figure 43: Insulin Delivery Devices Market, China, Revenue ($mn), Volume (‘000), 2005–2019 .......72
Figure 44: Insulin Delivery Devices Market, Australia, Cross-segment Analysis, CAGR (%), 2005–2019 ...74
Figure 45: Insulin Delivery Devices Market, Australia, Revenue ($mn), Volume (‘000), 2005–2019 ......75
Figure 46: Insulin Delivery Devices Market, India, Cross-segment Analysis, CAGR (%), 2005–2019 ....77
Figure 47: Insulin Delivery Devices Market, India, Revenue ($mn), Volume (‘000), 2005–2019 ........78
Figure 48: Insulin Delivery Devices Market, Brazil, Cross-segment Analysis, CAGR (%), 2005–2019 ....80
Figure 49: Insulin Delivery Devices Market, Brazil, Revenue ($mn), Volume (‘000), 2005–2019 ..........81
Figure 50: Insulin Delivery Devices Market, Comparison of Leading Insulin Pumps by Size and Color Options, 2014 .................................................................................................................................................86
Figure 51: Insulin Delivery Devices Market, Comparison of Leading Insulin Pumps by Basal and Bolus Specifications, 2014 ................................ ................................ ................................ ................ 87
Figure 52: Insulin Delivery Devices Market, Comparison of Leading Insulin Pumps by Bolus Calculator Options and Operation, 2014 ............................................................................ 88
Figure 53: Global Insulin Delivery Devices Market, Pipeline Products Summary, 2013 ............................... 98
Figure 54: Global Insulin Delivery Devices Market, Deals Summary, 2013 ................................ ............... 113
Insulin can be delivered through syringes, pens and pumps. Insulin syringes are the oldest mode of insulin delivery. Insulin pens consist of an insulin cartridge, a dial for dose measurement and disposable pen needle. An insulin pump consists of a pump, battery, insulin reservoir and computer chip.

Insulin syringes are the cheapest means of insulin delivery. Insulin pens on the other hand are useful for people with poor eye-sight and help avoid over/under-dosing of insulin. They are also convenient to use when traveling. Insulin pumps are ideal for those who need to continuously monitor their glucose levels and require continuous insulin delivery as pump users can set it to continuously deliver basal amounts of insulin throughout the day. In addition to basal insulin delivery, an insulin pump delivers bolus insulin immediately after meals and at times when the blood glucose level is too high, depending upon the user’s requirements.
6 Global Insulin Delivery Devices Market: Market Characterization


The following figure shows the revenues generated by the global insulin delivery market for the 2005–2012 period.

![Insulin Delivery Devices Market, Global, Revenue ($bn), 2005–2012](chart)

Source: GBI Research, Proprietary Database [Accessed February 12, 2014]

The following table shows the revenues generated by global insulin delivery market for the 2005–2012 period.

<table>
<thead>
<tr>
<th>Year</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>CAGR (%)</th>
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</thead>
<tbody>
<tr>
<td>Insulin pens</td>
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<tr>
<td>Insulin pumps</td>
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<tr>
<td>Insulin syringes</td>
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<td></td>
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<tr>
<td>Traditional insulin pump accessories</td>
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</table>

Source: GBI Research, Proprietary Database [Accessed February 12, 2014]

The global insulin delivery devices market was valued at $XX billion in 2005 and grew to $XX billion in 2012, at a CAGR of XX%. The insulin pumps segment grew at the fastest pace, driven mainly by developed economies due to improved glucose control and the need for flexible, lifestyle-compatible treatment options. Insulin pens were the largest segment in sales revenue during the period, mainly driven by low cost and high patient compliance due to ease of use. High diabetes prevalence and increasing awareness of the importance of insulin delivery devices were the major drivers for growth during the historic period.
6.3 Insulin Delivery Devices Market, Global, Key Company Shares, 2012

The following figure shows the percentage market shares for the key companies in the insulin delivery market in 2012.

Source: GBI Research, Proprietary Database [Accessed February 12, 2014]

*BD: Becton Dickinson and Company; Roche: F. Hoffmann-La Roche
13 Appendix

13.1 Definitions

13.1.1 Insulin Delivery

Insulin delivery devices are used to inject measured doses of insulin through the skin and into the fatty tissue below. The insulin delivery devices included in this market are syringes, pens and insulin pumps. Non-percutaneous delivery devices such as inhaled, buccal and ocular devices are not included in this category.

13.1.1.1 Insulin Pens

An insulin pen is a device that delivers measurable doses of insulin through the skin. A pen is composed of disposable needles and an insulin cartridge. Insulin pens constitute disposable and reusable types.

Disposable Insulin Pens

Disposable insulin pens are pre-filled insulin devices that are disposed of after use. One insulin pen has been considered as one unit.

Pen Needles

Pen needles are used in conjunction with the insulin pens to deliver insulin into the body. A pen needle consists of a hollow needle that is embedded in a plastic hub which in turn attaches to the insulin pen. A pack of 100 needles per pack is considered as one unit.

Reusable Insulin Pens

Reusable insulin pens are delivery devices that can be loaded with a cartridge of insulin and used more than once. The first-time purchase of the device includes one pen, needles and one cartridge. One unit consists of a pen, needle and an insulin cartridge. Subsequent purchases of insulin cartridges are not considered in this segment.

13.1.1.2 Insulin Pumps

An insulin pump is an insulin delivery that administers programmed doses of insulin for diabetes management. The device consists of a battery-powered pump, an insulin reservoir and an infusion set with a tubing system for subcutaneous intervention. Traditional and disposable insulin pumps are tracked under insulin pumps.

Disposable Insulin Pumps

Disposable insulin pumps use microfluidic MEMS technology that allows a tiny pump to be mounted on a disposable skin patch, replaced every two to three days, to provide continuous insulin infusion. PDMs are not covered under this segment. One unit consists of built-in blood glucose monitor and disposable skin patches with sensors.

Traditional Insulin Pumps

Traditional insulin pumps are programmable battery powered pumps that deliver insulin through insulin infusion catheters. The traditional insulin pumps market does not include insulin reservoirs and infusion sets. One unit consists of one battery-powered pump.

13.1.1.3 Insulin Syringes

Insulin syringes are hypodermic needles attached to hollow barrels that are used to inject insulin. Insulin syringes come in several different sizes to match different insulin strengths and dosages. One unit of general insulin syringes consists of 100 syringes.

13.1.1.4 Traditional Insulin Pump Accessories

Traditional insulin pump accessories are consumable items that are used in conjunction with battery powered pumps. One unit of traditional insulin pump accessories contain a disposable reservoir for storing insulin, a disposable infusion set, including a cannula for subcutaneous insertion and a tubing system to connect the insulin reservoir to the cannula.
### 13.2 Abbreviations

- **BG:** Blood Glucose
- **CAGR:** Compound Annual Growth Rate
- **CC:** Cubic Centimeter
- **CE:** Conformité Européenne
- **CGM:** Continuous Glucose Monitoring
- **Ci:** Cubic Units
- **CNS:** Central Nervous System
- **CRDM:** Cardiac Rhythm Disease Management
- **CSII:** Continuous Subcutaneous Insulin Infusion
- **EU:** European Union
- **FDA:** Food and Drug Administration
- **HbA1c:** glycated Hemoglobin
- **I:C:** Insulin-to-Carbohydrate
- **IDE:** Investigational Device Exemption
- **IDF:** International Diabetes Federation
- **IOB:** Insulin on Board.
- **IS:** Insulin Sensitivity
- **ISO:** International Organization for Standardization
- **JDRF:** Juvenile Diabetes Research Foundation
- **M&A:** Mergers and Acquisitions
- **MDI:** Multiple Daily Injection
- **MEMS:** Microelectromechanical Systems
- **mg/dl:** milligrams per deciliter
- **MI:** Myocardial Infarction
- **mmol:** millimole
- **MMR:** Measles-Mumps-Rubella
- **NDSS:** National Diabetes Services Scheme
- **OAB:** Overactive Bladder
- **OGTT:** Oral Glucose Tolerance Test
- **PDM:** Personal Diabetes Manager
- **PRO:** Patient Reported Outcome
- **SAP:** Sensor-Augmented Pump
- **SGLT-2:** Sodium/Glucose Cotransporter-2
- **SOI:** Silicon On Insulator
- **U per/hr:** Units/hour
- **U:** Units
- **USP:** United States Pharmacopeia
Appendix

13.3 Bibliography


- Davis et al. (2008). Patient satisfaction and costs associated with insulin administered by pen device or syringe during hospitalization. American Journal of Health-Systems Pharmacy, July 15; 65 (14): 1,347–1,357


Appendix


13.4 Research Methodology

GBI Research’s dedicated research and analysis teams consist of experienced professionals with advanced statistical expertise and marketing, market research and consulting backgrounds in the medical devices industry.

GBI Research adheres to the codes of practice of the Market Research Society (www.mrs.org.uk) and Strategic and Competitive Intelligence Professionals (www.scip.org).

All GBI Research databases are continuously updated and revised. The following research methodology is followed for all databases and reports.

13.4.1 Secondary Research

The research process begins with extensive secondary research using internal and external sources to gather qualitative and quantitative information relating to each market.

The secondary research sources that are typically referred to include, but are not limited to:

- Company websites, annual reports, financial reports, broker reports, investor presentations and SEC filings
- Industry trade journals, scientific journals and other technical literature
- Internal and external proprietary databases
- Relevant patent and regulatory databases
- National government documents, statistical databases and market reports
- Procedure registries
- News articles, press releases and web-casts specific to the companies operating in the market

13.4.2 Primary Research

GBI Research conducts hundreds of primary interviews a year with industry participants and commentators in order to validate its data and analysis. A typical research interview fulfills the following functions:

- Provides first-hand information on market size, market trends, growth trends, competitive landscape and future outlook
- Helps to validate and strengthen secondary research findings
- Further develops the analysis team’s expertise and market understanding

Primary research involves email correspondence, telephone interviews and face-to-face interviews for each market, category, segment and sub-segment across a range of geographies.

The participants who typically take part in the process include, but are not limited to:

- Industry participants: CEOs, VPs, marketing/product managers, market intelligence managers and national sales managers
- Distributors, paramedics and representatives from hospital stores, laboratories and pharmacies
- Outside experts: investment bankers, valuation experts, research analysts specializing in specific medical equipment markets
- Key opinion leaders: physicians and surgeons that specialize in the therapeutic areas in which specific medical equipment is used
13.4.3 Models

Where no hard data is available GBI Research uses modeling and estimates in order to produce comprehensive data sets, for which the following rigorous methodology is adopted:

Available hard data is cross-referenced with the following data types to produce estimates:

- Demographic data: population, split by segment
- Macroeconomic indicators: GDP and inflation rate
- Healthcare indicators: health expenditure, physician base, healthcare infrastructure and facilities
- Selected epidemiological and procedure statistics

Data is then cross-checked by the expert panel. All data and assumptions relating to modeling are stored and are available to clients on request.

13.4.4 Forecasts

GBI Research uses proprietary forecast models, which utilize the following factors:

- Historic growth rates
- Macro indicators such as population trends and healthcare spending
- Forecast epidemiological data
- Qualitative trend information and assumptions

Data is then cross-checked by the expert panel.

13.4.5 Expert Panel

GBI Research uses a panel of experts to cross-verify its databases and forecasts.

GBI Research’s expert panel includes marketing managers, product specialists, international sales managers from medical device companies, academics from research universities, key opinion leaders from hospitals, consultants from venture capital funds and distributors/suppliers of medical equipment and supplies.

Historic data and forecasts are relayed to GBI Research’s expert panel for feedback and adjusted accordingly.

13.6 Disclaimer

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