## **List of Tables and Figures**

Table ES-1 ES-3

Factors Driving Tele-Medicine Adoption

**Table ES-2 2-5** 

Factors Likely To Create Shift To Tele-medicine

**Table ES-3 2-6** 

Tele-medicine Adoption Rate Issues And Concerns

Figure ES-4 2-6

Tele-medicine Market Factors

Figure ES-5 2-8

Aging of the Population, 600 Million Elderly Individuals World Wide

Figure ES-6 2-9

Tele-medicine Challenge: One Billion Adults Over

Weight, 86 Million Individuals with Chronic Conditions

Figure ES-7 2-10

Tele-medicine Goal: Improve Lifestyle Choices

Table ES-8 2-12

Tele-medicine Market Driving Forces

Table ES-9 2-15

Tele-medicine Critical Issues Addressed

Table ES-10 2-16

**Tele-Medicine Clinical Results** 

Table ES-11 2-17

Tele Health Monitoring Problem Solution Aspects

Table ES-12 2-19

Tele-Medicine Devices for Clinical Tracking of

Chronic Disease Market Shares, Dollars, Worldwide, 2012

Figure ES-13 2-21

TeleMedicine Patient Modules and Nursing Stations,

Market Forecasts Dollars, Worldwide, 2013-2019

Figure 1-1

Remote Monitoring as Standard of Care

Table 1-2

Telemedicine Nursing Stations Typical Telemonitoring Questions

Table 1-3

Remote Patient Monitoring Device Uses

Table 1-4

Clinical Assessment and Response to Alert Provided by Telemonitor

Table 1-4 (Continued)

Clinical Assessment And Response To Alert Provided By

Telemonitor

Table 1-5

Clinical Assessment And Actions Taken To Alert Provided By

Telemonitor

Table 1-6

**Telehealth Solutions Benefits** 

Table 1-7

Monitoring Used To Take Measurements In Homecare Settings

Table 1-8

Monitoring Measurement Functions In Homecare Settings

Table 1-9

Bosch Recommendations for Innovation Funded By The VA

Table 1-10

**Intel Health Guide Functions** 

Table 1-11

Intel® Health Care Management Suite of Software Tools

**Table 1-11** 

NEJM Letters That Critique The Telemonitoring Study

Table 1-12

Physician Notification on CHF Using "SBAR"

Table 1-13

US Healthcare Coverage Legislation Functions

Table 1-14

FDA Enforcement Actions And Remedies

Table 1-15

**HIPAA** Information Covered entities

**Table 1-16** 

HIPAA Information That Needs to Be Private

Table 1-17

HIPAA Information Sharing by Health Care Providers

Table 1-18

**HIPAA** Information Sharing Prohibitions

Table 1-19

HIPAA Information Managed via Court Order

Figure 1-20

HIPAA Privacy and Security Rule and Compliant Process

Table 2-1

Factors Driving Tele-Medicine Adoption

Table 2-2

Tele-medicine Clinical Results

Table 2-3

Tele Health Monitoring Problem Solution Aspects

Table 2-4

Tele-Medicine Devices for Clinical Tracking of Chronic

Disease Market Shares, Dollars, Worldwide, 2012

Table 2-5

Tele-Medicine Devices for Clinical Tracking of Chronic Disease

Market Shares, Dollars, Worldwide, 2012

Figure 2-6

TeleMedicine Patient Modules and Nursing Stations, Market

Forecasts Dollars, Worldwide, 2013-2019

Table 2-7

Tele-Medicine Market Forecasts Dollars, Worldwide, 2013-2019

Figure 2-8

Healthcare Patient, Physician, and Facility Decision Support

Market Forecasts, Dollars, Worldwide, 2012-2019

Table 2-9

Healthcare Decision Support Market Dollars, Worldwide, 2013-2019

Figure 2-10

Healthcare Patient Decision Support Market Forecasts, Dollars,

Worldwide, 2012-2019

Figure 2-11

Decision Support Market Forecasts, Dollars, Worldwide,

2012-2019

Table 2-12

Remote And Wireless Patient Monitoring Device Using

Wireless Networks

**Table 2-13** 

Tele-Medicine and M-Health Sensor Market Forecasts Dollars,

Worldwide, 2013-2019

**Table 2-14** 

Tele-Medicine and M-Health Carrier Service Provider

Cloud SaaS Market Forecasts Dollars, Worldwide, 2013-2019

**Table 2-15** 

Cloud Computing Platform Systems of Engagement Solutions

Market Shares, Dollars, Worldwide, 2012

**Table 2-16** 

Drivers for the Adoption of Telepresence Solutions

**Table 2-17** 

Telemedicine Video Conferencing Telepresence Market Shares,

Dollars, Worldwide, 2012

Figure 2-18

M-Health Regional Market Segments, 2012

Table 2-19

M-Health Regional Market Segments, 2012

Figure 2-20

Telemedicine Regional Market Segments, 2012

**Table 2-21** 

Telemedicine Regional Market Segments, 2012

Tele-Medicine / M-Health Market Shares and Market Forecasts: Expanded Version

Table 2-22

Factors Driving Tele-Medicine Adoption

Table 2-23

Factors Likely To Create Shift To Tele-medicine

**Table 2-24** 

Tele-medicine Adoption Rate Issues And Concerns

Figure 2-25

Tele-medicine Market Factors

Figure 2-26

Aging of the Population, 600 Million Elderly Individuals World Wide

Figure 2-27

Tele-medicine Challenge: One Billion Adults Over Weight, 86

Million Individuals with Chronic Conditions

Figure 2-28

Tele-medicine Goal: Improve Lifestyle Choices

**Table 2-29** 

Tele-medicine Market Driving Forces

**Table 2-30** 

Tele-medicine Critical Issues Addressed

**Table 2-31** 

Tele-medicine Clinical Results

**Table 2-32** 

Tele Health Monitoring Problem Solution Aspects

**Table 2-33** 

Tele-Medicine Devices for Clinical Tracking of Chronic

Disease Market Shares, Dollars, Worldwide, 2012

**Table 2-34** 

Tele-Medicine Devices for Clinical Tracking of Chronic

Disease Market Shares, Dollars, Worldwide, 2012

Figure 3-35

IBM Watson Transforms Healthcare Delivery

Table 2-36

Gemalto CINTERION Wireless Module Functions

Figure 2-37

TeleMedicine Patient Modules and Nursing Stations,

Market Forecasts Dollars, Worldwide, 2013-2019

Table 2-38

Tele-Medicine Market Forecasts Dollars, Worldwide, 2013-2019

**Table 2-39** 

Tele-Medicine Market Forecasts by Patient Module and by

Nursing Station Modules, Units and Dollars, Worldwide,

2013-2019

Table 2-40

Tele-medicine Device and Software Market Forecasts,

Units and Dollars, Worldwide, 2012-2018

Figure 2-41

Congestive Heart Failure (CHF) Patients Worldwide, Forecasts,

Number, 2012-2018

Figure 2-42

Diabetes Patients Worldwide, Forecasts, Number, 2012-2018

**Table 2-43** 

Number of Patients with Disease Conditions Requiring

Wheelchairs, By Diagnosis, Number, Worldwide, 2012-2018

Table 2-44

Healthcare IT Customer Needs and Carrier Service Provider

Telemedicine Benefits

Table 2-45

Carrier Service Provider Cloud Telemedicine Advantages

Table 2-46

Tele-Medicine and M-Health Carrier Service Provider Cloud SaaS

Market Forecasts Dollars, Worldwide, 2013-2019

**Table 2-47** 

Cloud Computing Platform Systems of Engagement Solutions

Market Shares, Dollars, Worldwide, 2012

Figure 2-48

Follow Up Link Increases Exponentially In Europe

Table 2-49

**Tele-Medicine Program Benefits** 

Table 2-50

Tele-medicine Alarm Devices

**Table 2-51** 

Healthcare Decision Support Software Market Shares,

Dollars, Worldwide, 2012

Figure 2-52

Healthcare Decision Support Software Market Shares, Dollars,

Worldwide, 2012

Figure 2-53

Healthcare Patient, Physician, and Facility Decision Support

Market Forecasts, Dollars, Worldwide, 2012-2019

Table 2-54

Healthcare Decision Support Market Dollars, Worldwide, 2013-2019

**Table 2-55** 

Natural Language Healthcare Decision Support Market

Dollars and Units, Worldwide, 2012-2019

Figure 2-56

Healthcare Decision Support Market Forecasts, Facility,

Research, and Insurers, Dollars, Worldwide, 2013-2019

Figure 2-57

Healthcare Patient Decision Support Market Forecasts, Dollars,

Worldwide, 2012-2019

**Table 2-58** 

Smart Phone Market Shares, Units and Dollars, Worldwide, 2011

Table 2-59

Total Smart Phone Installed Base Units, Worldwide, 2012-2018

Table 2-60

Healthcare Physician Decision Support Market Forecasts, Dollars,

Worldwide, 2012-2019

**Table 2-61** 

Remote And Wireless Patient Monitoring Device Using

Wireless Networks

Figure 2-62

Healthcare Decision Support Market Forecasts, Facility,

Research, and Insurers, Dollars, Worldwide, 2013-2019

Table 2-63

The Medicare Tele-health Originating Site Facility Fee and MEI

Increase by the Applicable Time Period

Figure 2-64

Healthcare Decision Support Market Forecasts, Facility,

Research, and Insurers, Dollars, Worldwide, 2013-2019

Figure 2-65

M-Health Regional Market Segments, 2012

**Table 2-66** 

M-Health Regional Market Segments, 2012

Figure 2-67

Telemedicine Regional Market Segments, 2012

**Table 2-68** 

Telemedicine Regional Market Segments, 2012

Figure 3-1

Bosch Health Buddy System

Table 3-2

Bosch Health Buddy System Components

Figure 3-3

Bosch Health Buddy Decision Support Dashboard and Heat Map

Table 3-4

Bosch Healthcare Telemedicine Solution

Figure 3-5

Bosch Health Buddy System

Table 3-6

Bosch Health Buddy System Patient Uses for Custom Messaging

Figure 3-7

Bosch VitelCare<sup>TM</sup> T400 Home Health Monitor

Figure 3-8

**Bosch Decision Support** 

Table 3-9

**Bosch ViTelCare Functions** 

**Table 3-10** 

McKesson / Bosch Telemedicine Advisor Benefits

Table 3-11

McKesson / Bosch Telemedicine Advisor Features

**Table 3-12** 

Viterion Tele-medicine UK Department of Health (DOH)

Initial Findings from Whole System Demonstrator (WSD) Program

Figure 3-13

Viterion 200

Table 3-14

Viterion Telemedicine Monitor Measurement Of Vital Signs:

Figure 3-15

Viterion 100

Table 3-16

ViterionNET Administrator Features:

Figure 3-17

Viterion Monitor

**Table 3-18** 

ViterionNET Healthcare Provider Features:

Table 3-19

Viterion Telemonitoring Study Parameters:

Table 3-20

Viterion Telemonitoring Study Statistics:

**Table 3-21** 

Honeywell HomMed Genesis Touch Key features

Table 3-22

Honeywell Homemed Health Monitoring System Vital Signs Features

Table 3-23

Honeywell Homemed Health Monitoring System Features

Table 3-24

Honeywell Homemed Health Monitoring Med Partner System Features

**Table 3-25** 

Honeywell Homemed Health Monitoring System Criteria for Monitoring

**Table 3-26** 

Honeywell HomeMed Health Monitoring System Functions

**Table 3-27** 

Honeywell HomMed Recommended Criteria for Monitoring

Figure 3-28

Cardiocom Commander

**Table 3-29** 

Cardiocom Commander Features

Table 3-30

Cardiocom Commander Modular Functions

**Table 3-31** 

Cardiocom Commander Home Telemedicine Management of Complex3Conditions

Table 3-32

Cardiocom System Vital Signs Disease Conditions Telemonitoring

**Table 3-33** 

Cardiocom Commander Features

Figure 3-34

Cardiocom Comprehensive Monitoring Solution

Table 3-35

Cardiocom System Vital Signs Telemonitoring Solutions Functions

Table 3-36

Cardiocom System Modules

**Table 3-37** 

Cardiocom System Modules

**Table 3-38** 

Philips HeartStart Telemedicine Benefits for Receiving Hospitals

Table 3-39

Philips HeartStart Telemedicine Benefits for EMS

Table 3-40

Application Server: Systems Integration Features

**Table 3-41** 

Philips IntelliVue Application Server Functions

Table 3-42

Value of Philips Home Telemonitoring

Figure 3-43

Philips Decision Support for Home Telemonitoring

Figure 3-44

Intel® Health Guide: Healthcare Technology

**Table 3-45** 

Intel-Based Computers Positioning for Rural Areas Worldwide

Figure 3-46

Intel Telemedicine Device

Figure 3-47

IBM Cognitive Computing for Healthcare

Figure 3-48

IBM Cognitive Computing Decision Support

Figure 3-49

IBM Watson Transforms Healthcare Delivery

Figure 3-50

IBM Mobile Foundation

Figure 3-51

IBM Mobile Enterprise Capabilities

Table 3-52

IBM Builds, Manages, Deploys & Hosts Cross Platform Applications

Figure 3-53

IBM Mobile Application Development Models

Table 3-54

MERCURYTM Web Telemedicine Parameters

Figure 3-55

Mercury Web Telemedicine

Figure 3-56

ZTE Supports Remote Delivery of Medical Care

Figure 3-57

Vidyo Conferencing Extending the Reach Of Healthcare

**Table 3-58** 

Vidyo for Healthcare Applications:

Figure 3-59

Vidyo API

Figure 3-60

Philips Telemedicine Monitor

Figure 3-61

GlobalMed Telemedicine Carts

Figure 3-62

GlobalMed Telemedicine Carts Mobile Medical Stations

Figure 3-63

GlobalMed Telemedicine Cart | Mobile Medical Station

Figure 3-64

GlobalMed i8500 Teleaudiology Station

Figure 3-65

GlobalMed Telehealth Cameras

Figure 3-66

GlobalMed TotalExam<sup>TM</sup> HD Examination Camera

Figure 3-67

TotalExam<sup>TM</sup> Examination Camera

Figure 3-68

GlobalMed iREZ® i5770 PTZ Camera

Table 5-69

Mayo Clinic Services

Figure 5-70

Kaiser Thrive Campaign

**Table 5-71** 

**Kaiser Services** 

Figure 3-72

Polycom Telehealth

Figure 3-73

Polycom RealPresence Cloud Collaboration Center

**Table 3-74** 

Polycom RealPresence Cloud Collaboration Center Features

Table 3-75

Polycom RealPresence Cloud Collaboration Center Two

**Seater Components** 

**Table 3-76** 

Polycom RealPresence Cloud Collaboration Center Four Seater Components

Figure 3-77

TelePresence System 3200 Series

**Table 3-78** 

Cisco TelePresence System 3200 Functions:

Figure 3-79

Cisco Hospital Video Surveillance

Figure 3-80

Vidyo Telehealth

Figure 3-81

Intel mHealth

Figure 3-82

GreatCall Leverages Samsung Mobile Phone

**Table 3-83** 

GreatCall 5Star Urgent Response

Figure 3-84

Logitech Lifesize Product Matrix

**Table 3-85** 

AT&T Virtual Care Benefits

**Table 3-86** 

AT&T Imaging in the Cloud Benefits:

Figure 3-87

AT&T Medical Imaging and Information Management

Figure 3-88

Verizon University of Virginia Remote Telemedicine Program

Figure 3-89

MedApps HealthPAL

Figure 3-90

Care Innovations Telemedicine Tablet Device

Figure 3-91

Care Innovations Telemedicine Devices

Figure 3-92

Care Innovations Telemedicine Monitoring Blood Pressure

Figure 3-93

Care Innovations Telemedicine Monitor Screen

Figure 3-94

Care Innovations Telemedicine Video Conferencing

Figure 3-95

Care Innovations Telemedicine Monitor

**Table 3-96** 

Nurse Call Center Manages Information Typical AMCC

**Telemonitoring Questions For Patients** 

Figure 3-97

Viterion Telemedicinecare Nursing Station

Figure 3-98

Cardiocom Integrated Systems

Figure 3-99

Cardiocom Device Platforms

Table 3-100

Kiwok BodyKom ECG Features

Figure 3-101

A&D Medical Scale

Table 3-102

A&D Medical XL-18 Activity Monitor Product Features

Figure 3-103

A&D Medical XL-18 Tri-Axial Activity Monitor

Figure 3-104

A&D Medical DataSend Personal Blood Pressure Monitor

Figure 3-105

Wellness Connected Wireless Blood Pressure Monitor

**UA-851THX Product Features** 

Table 3-106

Types of Patients Referred For Philips AseraCare Telemonitoring

Services At Hospital Discharge

Table 3-107

TouchPointCare Telemedicine Target Markets

Table 3-108

TouchPointCare Telemedicine Positioning

Table 3-109

**TouchPoint Monitoring Functions** 

Table 3-110

TouchPointCare Target Functions

Table 3-111

TouchPointCare Target Markets

Table 3-112

TouchPointCare Features

Table 3-113

TouchPointCare Technology Deployment Features

Table 3-114

TouchPointCare Monitoring Key benefits

Table 3-115

**Hospital Telemedicine Solutions** 

Table 3-116

Medical Sensor Technologies

Table 4-1

New England Journal of Medicine (NEJM) Sarwat I.

Chaudhry, M.D Telemonitoring Research and Letters

That Critique The Study

Table 4-2

Evident Health Services Target Patient Metrics,

Best Practice Targets Blood Pressure, Blood Lipids

Table 4-2 (Continued)

Evident Health Services Target Patient Metrics,

Best Practice Targets Blood Pressure, Blood Lipids

Table 4-3

Evident Health Services Target Patient Metrics,

Best Practice Obesity and Insulin Targets

Table 4-4

Partners Healthcare Tele-Monitoring Benefits

Figure 4-5

Medtronic CareLink Disease Management

Figure 4-6

Medtronic Device Monitoring and Disease Management

Figure 4-7

Device Follow-up and Disease Management

Figure 4-8

Medtronic Cardiac Implantable Device Monitoring

Heart Failure Guidelines

Figure 4-9

Viterion Device for Tele-Health Monitoring

Figure 4-10

Continua Interfaces and Standards for Telemedicine

Figure 4-11

Continua Telemedicine Ecosystem Development

Figure 4-12

Continua Personal Connected Healthcare Solution

Figure 4-13

Payer Impact on Telemedicine

Figure 4-14

PPACA Telemedicine Quality Improvement

Figure 4-15

Philips Telemedicine Operating Model

Table 4- 16

Healthcare Education: Value Categories and KPIs

Table 4-17

**Telemedicine Accessibility Functions** 

Table 4-18

Healthcare Delivery In A Community Context

Table 4-19

Health Information Exchange services Example Solutions

Table 4-20

Health Information Exchange Services Benefits

**Table 4-21** 

Home-Based Care Telemedicine Benefits

**Table 4-22** 

Mobile Health Care Solution

**Table 4-23** 

**Mobile Office Solutions** 

Table 4-24

Telehealth Readiness Assessment System Functions

Table 5-1

A&D Positioning:

Figure 5-2

**A&D Wellness Connected Solutions** 

Figure 5-3

A&D Wellness Connected Wireless Precision Scale

Figure 5-4

A&D Wellness Connected Wireless Blood Pressure Monitor

Table 5-5

AT&T Mobile Security Benefits

Table 5-6

Authentidate Holding Positioning and Risks

Table 5-7

Biotronik Electrotherapy Devices

Table 5-8

**Biotronik Electrotherapy Devices** 

Table 5-9

Cardiocom Patient Conditions For Telemonitoring And

Disease Management

Figure 5-10

Continua Telemedicine Board Members

Figure 5-11

Continua Telemedicine Promoter Members

Figure 5-12

Continua Telemedicine Challenges

**Table 5-13** 

Key Components of Evident Health Services Methodology

Table 5-14

Key Components of Evident Health Services Collaboration

Table 5-15

Gemalto / CINTERION Wireless Module Functions

Figure 5-16

CINTERION Global Interoperable Personal Health Solutions Architecture

Figure 5-17

Gemalto / Cinterion Wireless Data Transmission

Table 5-18

Honeywell HomMed Genesis Touch Key features

Table 5-19

IBM PureSystems Target Industries

Table 5-20

JSC CEM Technology

Table 5-21

CEM®-ThermoDiagnostics Personal Thermograph

Target Audience and Aims

Table 5-22

Personal thermograph "CEM®-ThermoDiagnostics" for

Professional And Domestic Use

**Table 5-23** 

Prices for ???®-ThermoDiagnostics Personal Thermograph:

Table 5-24

Logitech LifeSize UVC Platform Features

**Table 5-25** 

McKesson Telehealth Advisor Critical Issues Addressed

Table 5-26

McKesson Telehealth Advisor Clinical Results

**Table 5-27** 

MedApps Products

**Table 5-28** 

MedApps System Features

Figure 5-29

Medtronic EMR Systems

Figure 5-30

Medtronic Carelink Value Propositions

**Table 5-31** 

Partners Healthcare Connected Health Consulting Services

**Table 5-32** 

Partners Healthcare Heart Failure, Hypertension,

**Diabetes And Chronic Condition Programs** 

Table 5-33

Philips Positions To Simplify Global Healthcare Delivery For

The Long Term

Table 5-34

Philips Healthcare Delivery Product Positioning

Figure 5-35

Philips Healthcare Positioning

Figure 5-36

Philips Revenue Market Segments

Figure 5-38

Philips Employee, Manufacturing, and Research Profile

Figure 5-39

Philips Continuing Sales Growth in Emerging Markets

Figure 5-40

Philips Gaining Share And Leadership in Emerging Markets

Figure 5-41

Philips Delivering Margin Improvement and Decreasing Manufacturing Overhead

Figure 5-42

Philips Healthcare Information Systems Market Shares

Table 5-43

Polycom Strategic Investments And Five Key Strategic Initiatives

Table 5-44

Polycom Unified Collaboration Solutions ROI Metrics

**Table 5-45** 

Polycom Strategic Investments And Five Key Strategic Initiatives

**Table 5-46** 

Polycom Unified Collaboration Solutions ROI Metrics

Figure 5-47

Samsung Revenue Growth

Table 5-48

TeleAtrics<sup>TM</sup>Childcare Center Features

Table 5-49

TouchPointCare

Table 5-50

TouchPointCare Goals

Table 5-51

AMAC Call Centers

Figure 5-52

AMAC / Intel® Health Guide

Figure 5-53

AMAC / Bosch Health Buddy®

Figure 5-54

Tunstall Healthcare Group / AMC Positioning to Provide Continuity of Care for Chronic

Conditions

Table 5-55

Vidavo Positioning

Table 5-56

Vodafone Cloud Features

Table 5-57

VRI Units Monitored

Table 5-58

VRI Services to Partners