Global Trends in MedTech 2024

Healthcare Economics Direct MedTech

A.S. Freeman Advisors
August 2024

Executive Summary

- Global medtech market: $567 billion in 2023
- Estimated 5.9% growth rate through 2026
- Unsustainable healthcare spending influences OEMs to change development themes for new devices
  - Less costly procedures
  - Reduced labor hours per treatment

Executive Summary *continued*

- Three product trends:
  - Digitization
  - Workflow improvements
  - Moving care to less expensive settings

- A shifting supply chain:
  - Tiering of suppliers
  - Suppliers as competitors to OEMs
  - LCCs still in vogue, though automation reduces costs
  - New niches evolving for suppliers

Perspective and Methodology

- Focus on the “seismic trends” driving the industry
- Three- to 10-year horizon
- Source materials:
  - OEM presentations to analysts and investors
  - Contract manufacturer public statements
  - Government health, financial, and demographic data

About A.S. Freeman Advisors

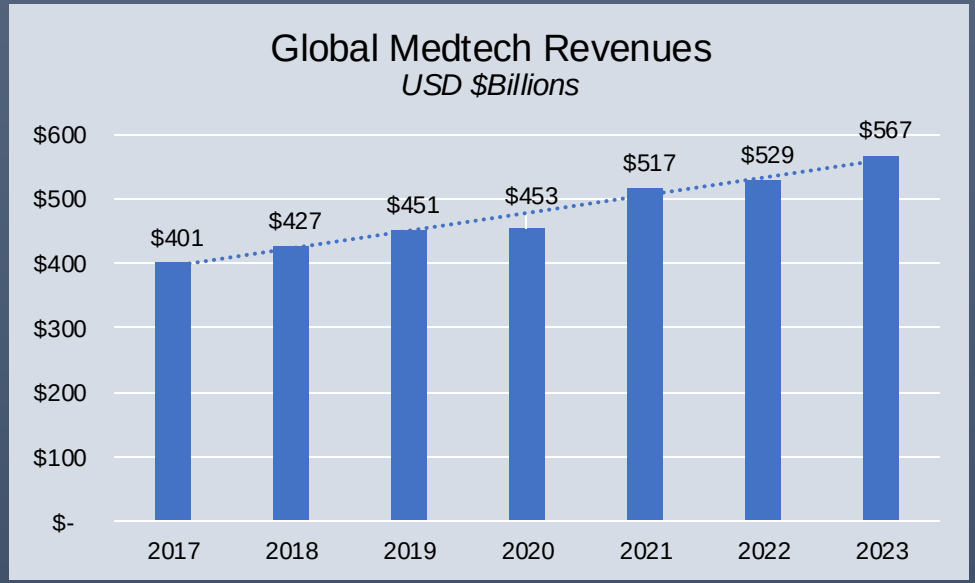
Tony Freeman
President

A.S. Freeman ADVISORS, LLC

- Merger and acquisition advisory services
- Corporate value-enhancement strategies
- Focus on precision manufacturing and specialty materials markets
- Publishes *Global Trends: Medical Device and Diagnostic OEM Strategy and Implications for the Supply Chain*

The Medtech Market: Global Market Size

- $567 billion USD in 2023
- Increase of 7% over 2022 (largely due to final stage of COVID recovery)
- Expect a lower rate of growth in 2024
- OEMs to work down their inventories, adjust to inflation

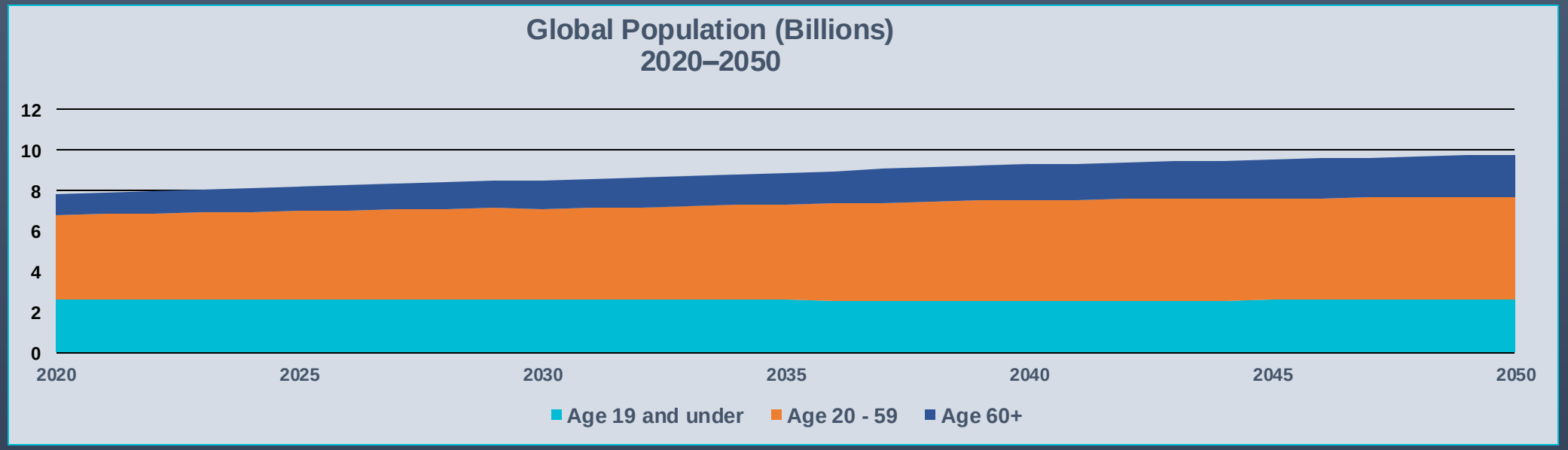


The Medtech Market: Growth Rate

- 5-Year (2019-2023) CAGR = 5.8%
- 3-Year (2021-2023) CAGR = 7.7%
- Projected revenue growth rate of 5.9% through 2026
- Revenue growth rate ranges from 4% to 8% depending on OEM

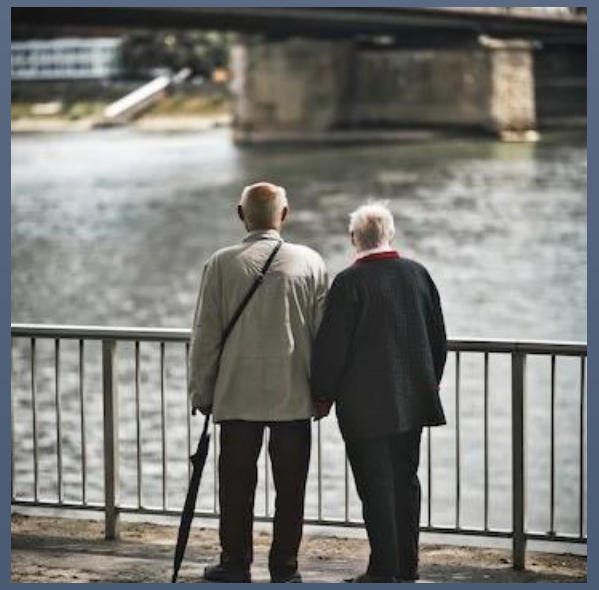
The Demographics of the Next 25 Years

- **2020 – People over 60**
  - 1 billion out of 7.8 billion
  - 12.8% of global population
  - More over 60yo than under 5yo
- **2050 – People over 60**
  - 2.1 billion out of 9.7 billion
  - 22% of global population



Can This Growth Be Funded?

- More old people than young people
  - Massive increase in healthcare spending
  - Decline in ratio of healthy workers/taxpayers to older healthcare consumers
- How much can a country sustainably spend on healthcare?



US Healthcare Expenditure

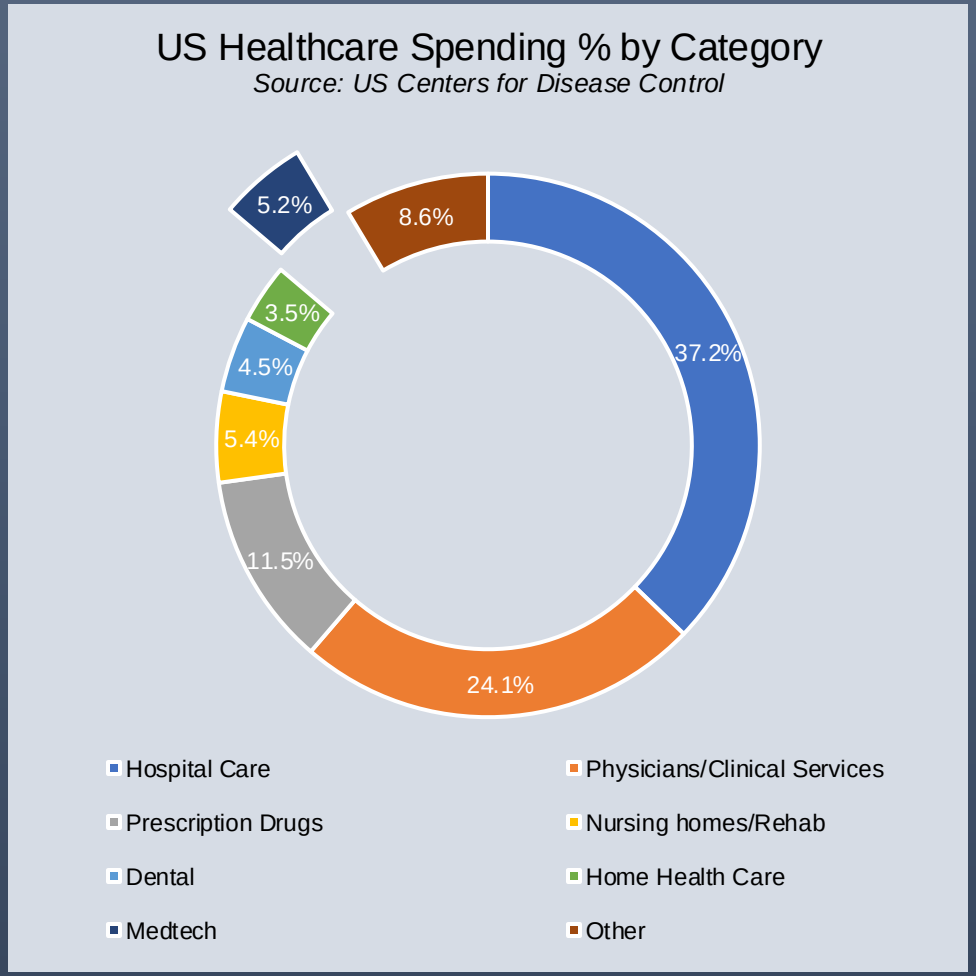
- In 2024, the US will spend $5.1 trillion on healthcare (~17.3% of GDP)
- Of this, the federal government represents 37% ($1.9 trillion)
  - Medicare, Medicaid, ACA (Obamacare)
  - VA health services
  - Active military health services
  - Other grants and programs
- US will borrow about 25% ($475 billion) in 2024 to support healthcare spending
- ***Unsustainable***
  - Unfavorable ratio of patients to health taxpayers
  - At least 20 years of demographic challenges

Other Developed Nations Face Healthcare Solvency Issues

- The US and other developed economies represent ~60% of global healthcare spending
- Western Europe, Japan, Canada, Australia/New Zealand:
  - Healthcare to GDP ratio ranges from 9.9% to 16% of GDP for other economically developed nations
  - Most developed nations run deficits and must borrow to fund healthcare
- Lower percentage of GDP than the US, but more challenging demographic issues
  - Low birth rates in Western Europe & Japan
  - Even greater reliance on taxpayer funding than US
  - No notable signs of change

Medtech's Share of the Funding Issue

- Medtech represents 5.2% of overall healthcare spending
- Smallest share of the key categories:
  1. Hospitals and other care facilities
  2. Physicians/clinical services
  3. Prescription drugs
  4. Medtech



Besides Money: The Staffing Dilemma

- Healthcare staffing inadequate to meet future demand
- Global patient population to increase 2.5x by 2050
- Current methods of providing care are labor-intensive
  - Originally developed in decades past, when staffing was less of an issue
  - The focus has, quite rightly, been on quality of care, but little thought has been given to the affordability of quality care
- COVID exposed the vulnerability of healthcare staffing to heavy patient loads

Problems and Opportunities

- Can medtech reduce healthcare costs?
  - Prevention and early intervention reduce the need for costly procedures
  - Improved treatment of chronic conditions can reduce costs
  - Continued drive for improved outcomes → lower overall costs
- Can medtech improve healthcare workflows and reduce labor hours while providing quality care?

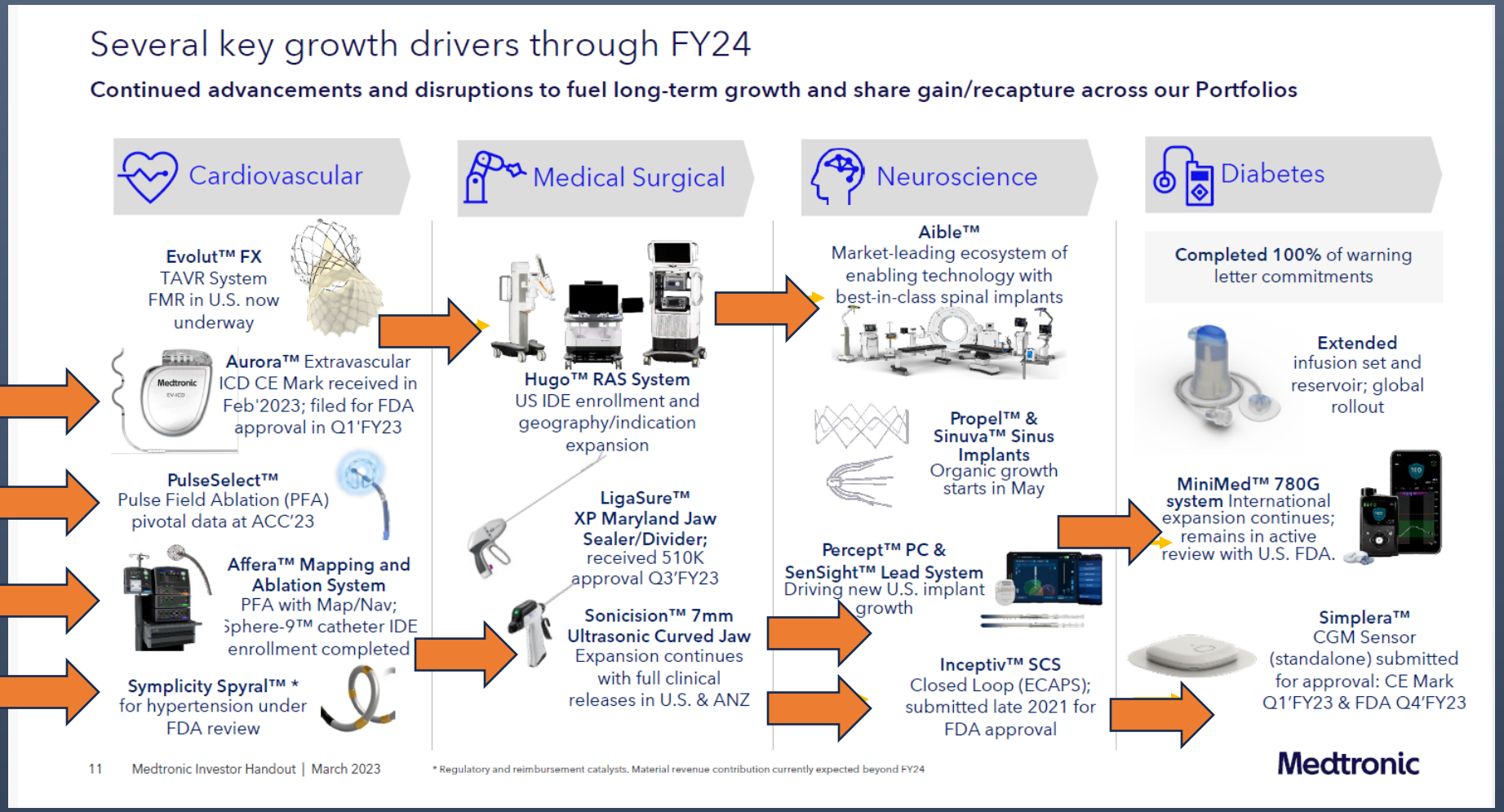
How Are OEMs Facing These Issues?

- Medtech OEMs are aware of funding and staffing issues
- New products are being introduced that
  - Improve results, lowering healthcare costs
  - Participate in both clinical and administrative workflows, reducing staff time away from best-use patient care,
- Three themes in medtech product development
  - Digitization of devices and AI
  - Labor-saving workflow features
  - Moving healthcare to less expensive settings

Digitization: Better Outcomes Through Data

- Over 65% of product announcements by major OEMs are for digital or digitally-enhanced products
- Much of the digitization effort revolves around gathering and organizing patient data
  - At its simplest: better recordkeeping
  - At its most advanced: deep reservoirs of actions and results that permit effective planning and treatments

Example: Medtronic



Example: Medtronic

- Medtronic product pipeline by division as of March 2023:
  - 9/15 key growth products contain digital content
- Why?
  - Superior outcomes via improved data management and device control
  - Lower overall cost of care when it is “done right the first time”
- Medtronic is not alone – other OEMs are adding digital and digitally-enabled products to their offerings

What About AI?

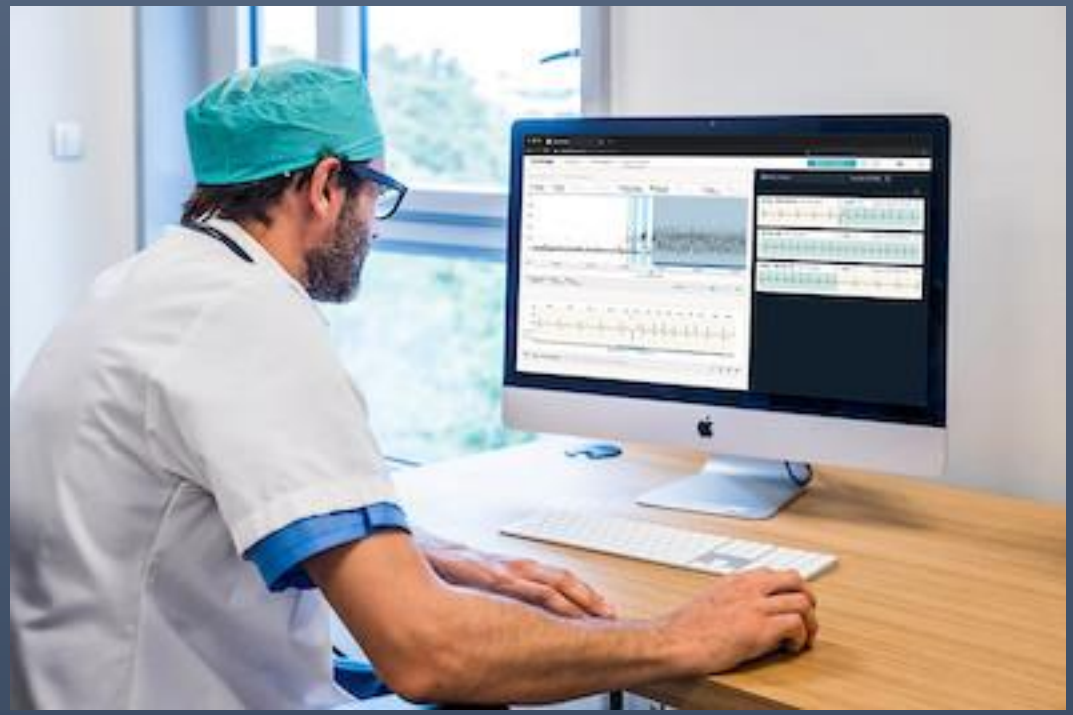
- Many OEMs mention AI-infused product line enhancements:
  - Medtronic
  - Johnson & Johnson
  - Stryker
  - Boston Scientific
  - Canon
  - Intuitive
- As in many other industries, AI's impact is expected to be profound, but OEMs are short on specifics for the time being

What About AI?

- Imaging companies (Siemens, GE Healthcare, Philips) most concrete in describing their new AI features
  - Quicker identification of lesions, tumors, and other areas of concern
  - Greater accuracy in the treatment of diseased or injured tissue
  - Allow imaging teams to focus on more pressing issues

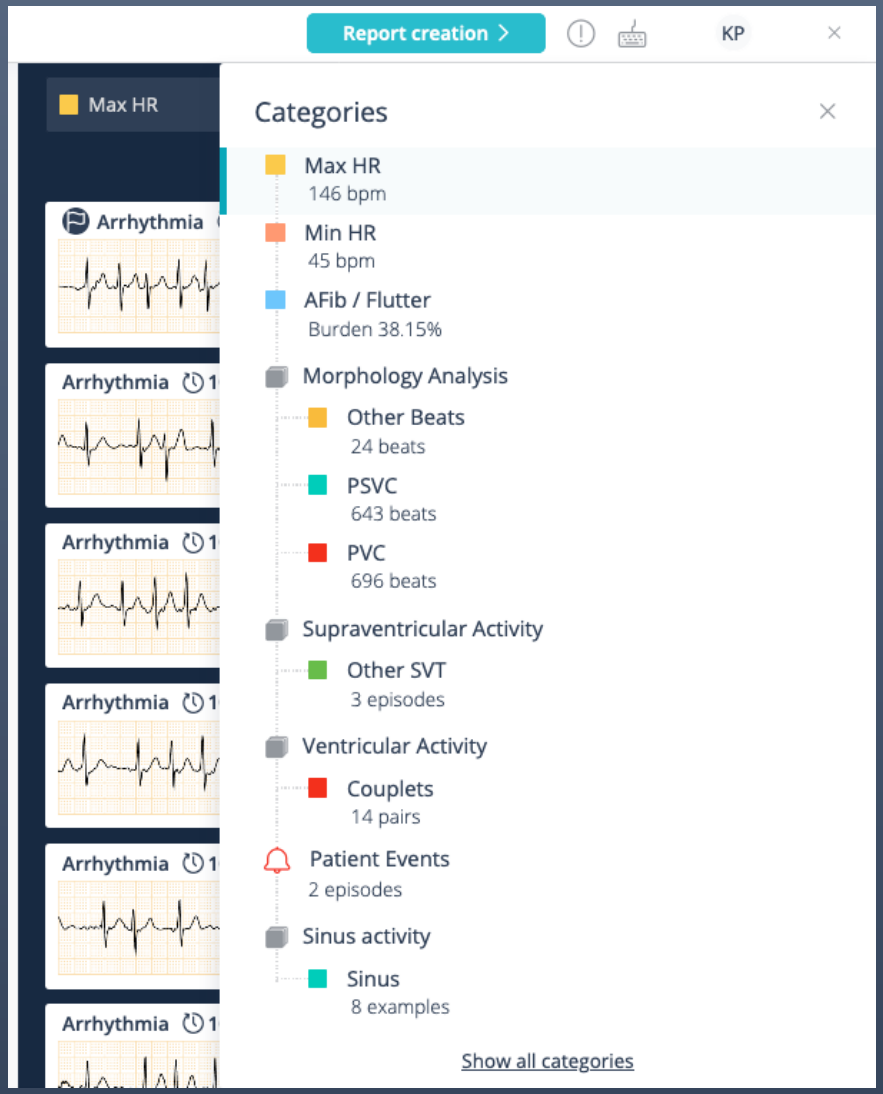
Example: Philips Cardiologs AI

- Identifies and classifies cardiac irregularities
  - Five major classes of arrythmias with multiple sub-classes
  - Each requires different treatments
- Traditional diagnosis procedures can be time-consuming, may miss hard-to-detect nuances in heart rhythm



Example: Philips Cardiologs AI

- Cardiologs AI by Philips compares EKG or Holter readings to a database of ~20 million records, providing more insightful initial diagnoses in less time than standard approaches
- Frees cardiologists to concentrate on more urgent areas of diagnosis and care
- More precise information improves outcomes for patients and lowers costs of care



Workflow and Medtech

- Few CMs use the same workflows that they did 50 years ago
  - LEAN, Six Sigma, and related philosophies changed how products are made
  - Process/workflow has been elevated in importance as managers have increasingly recognized its impact on product costs, safety, and quality

Workflow and Medtech

- Healthcare is only just now beginning to put the same emphasis on process to better meet rising patient loads and inelastic, costly labor supply
  - Most healthcare organizations operate with procedures similar to those used 50 years ago. The technology may have changed, but workflows have barely budged.
  - Ripe with opportunity for cost and staff savings

Workflow and Medtech

- COVID revealed how critical workflow improvements are to the survival of a quality healthcare system
  - US hospital occupancy rose from a historical rate of 80% to 117% at the pandemic's peak
  - Staff burnout drove the system past redline
- OEMs beginning to address workflow via device design and features

Example: Intuitive da Vinci 5

Example: Intuitive da Vinci 5

- Intuitive's latest robot surgery system
- Key selling points:
  - Superior physician visualization, ergonomics, and controls → Of interest to physicians and OR staff
  - Workflow enhancements → Of interest to hospital administrators and others paying the bills
- Workflow improvements during procedure, faster reset times for the next procedure
  - 10- to 30-minute reduction in total operating room time from start through procedure through reset in many cases
  - Average US operating room cost of $2,200/hour when staffed

Moving Care to Less Expensive Settings

- Hospitals are the most expensive places to provide care
  - Hospitals/clinics comprise about 37% of overall healthcare costs
  - Massively over-resourced for many conditions
- Kaiser Permanente and the Mayo Clinic estimate 30% of hospital patients can be treated at home, lowering healthcare costs
- New products being launched to support out-of-hospital care

Example: Avanos Homepump Eclipse

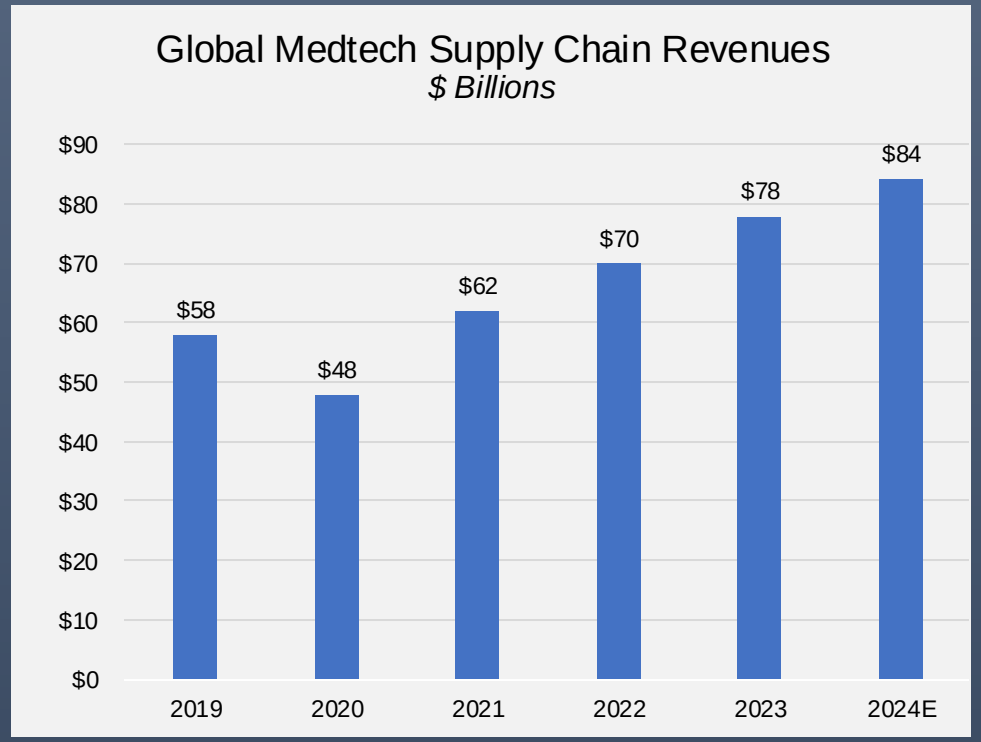
- Replaces sophisticated infusion pump with simple, medication-filled elastomeric bladder set to a single flow rate
- Intended for routine infusions
- Can be used in a hospital or at home
- Patients can conduct their own infusion sessions
- Cheap and effective

Supply Chain Issues No Longer Top of Mind for OEMs

- OEMs are talking less about supply chain issues as COVID recedes into the past
- Some mentions of dual-sourcing, resilient supply chains, and near-shoring few details or major initiatives
- Much of the chatter re: near-shoring is now driven by geopolitical issues

The Medtech Supply Chain

- Supply chain *roughly* ~$84 billion in 2024
  - No commonly agreed-upon source for supply chain revenues
- Growth slowing to ~7% in 2024 from >10% in 2023
  - OEMs reporting overstocked inventories
  - Pushing out deliveries



Questions About the Supply Chain

- Have the OEMs sculpted the supply chain they want?
- Has the structure of the supply chain been set for the rest of the decade?
- Is LCC a requirement?
- Where are the pockets of opportunity for the little guy?
  - Digital/Electronics CM?
  - Finished devices white label?
  - Bioactives?
  - AI?

Have OEMs Sculpted Their Ideal Supply Chain?

- **Yes, largely so**
- OEMs have the supply chain they desire
- In the last 10 years:
  - Notable increase in the outsourcing of manufacturing
  - Back-of-the-envelope numbers:
    - 2017: 27% of the $140 billion in medtech COGS was performed by the supply chain
    - 2023: 31% of the $255 billion COGS handled by supply chain

OEMs Have Transferred Risk to Their Suppliers

- Manufacturing risk
- Investment in new facilities and equipment
- Working capital transfer: Suppliers function as a bank for OEMs

Should OEMs Be Happy? Yes

- By increasing outsourcing, OEMs have reshaped their supply chains
- Moving in-house manufacturing out to the supply chain gave OEMs a number of wins:
  - Spurred the creation of large, financially stable suppliers
  - M&A-driven consolidation of a fragmented, challenging-to-manage supplier base has led to big, “one neck to choke” suppliers capable of building complete devices
  - Shifted capex spending from OEM to supplier
    - Frees funds for higher-return activities: R&D, marketing, sales, distribution

Is There a Lurking Supply Chain Issue for OEMs?

"The Teleflex Conundrum"

- Teleflex has moved from being a partner to a threat for some OEMs
  - Teleflex (NYSE:TFX) was originally a telecom/data equipment CM
  - Drawn by higher profit margins, TFX moved into medtech in the 1990s
  - Today, TFX is a $3 billion, 100% medtech company
  - Still a CM, but a significant portion of revenue from TFX-branded interventional and surgical products
  - Competes with former and current customers
- Other large CMs have the capabilities to offer competing products

Has the Structure of the Supply Chain Been Set for the Rest of the Decade?

- **Yes, for the most part**
- Moving from a flat structure of 15,000 medtech suppliers in 2000 to an aerospace-style, tiered supply chain
  - Dominated by large CMs functioning as prime contractors
  - Smaller firms, no matter how capable, are being commercially disintermediated from OEMs
    - Working under primes
- A structure that tends toward stability

Is an LCC Required for Supply Chain Success?

- Favored by most OEMs
- Automated production with little labor content is *currently* immune
  - Operative word: *Currently*
- Terumo Medical is making Costa Rica the preferred location for its operations in the Americas

What Are The Evolving Niches?

Digital medtech contract manufacturers

- Combine metals, plastics, AND electronics expertise
- Compete with international electronics CMs like Jabil and Flex, but can win with:
  - Market concentration and expertise
  - Speed-to-market, improved revenue recognition

What Are The Evolving Niches?

Private label device developer and manufacturer

- Many CMs have the expertise to design and manufacture devices to fill holes in OEM catalogs
  - Not blockbuster products, but items that OEM sales forces can sell in support of major products
- Requires careful analysis of OEM product lines and a willingness to avoid competing against customers on key items

What Are The Evolving Niches?

Bioactives

- Combining devices with bioactive (drug) coatings and fillings
- Requires specialized knowledge, facilities, and quality systems

What Are The Evolving Niches?

AI products

- No one quite fully comprehends AI or how it applies to medical devices
- Identifying and building products that improve outcomes and save money will likely draw attention as well as orders

For More Information

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