



The Next Era of Medical Devices and Diagnostics



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Market conditions shift back to innovation

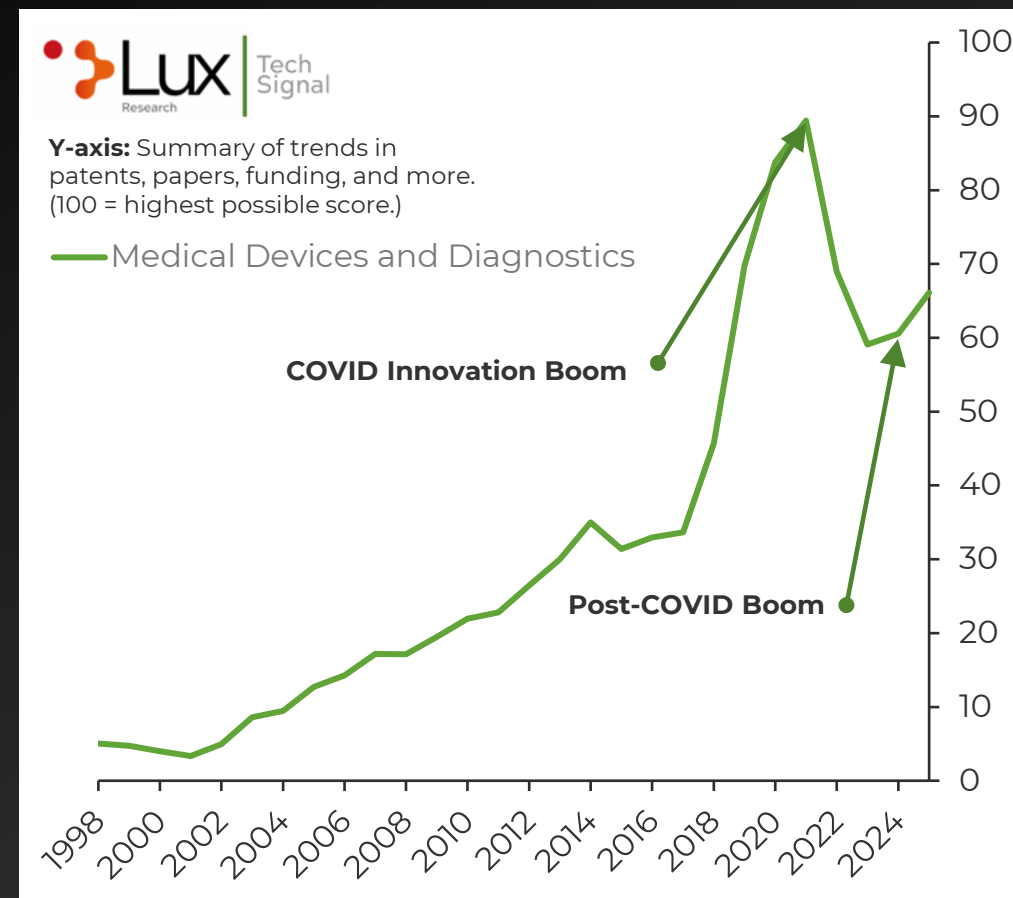
Growth through innovation is requisite

Medical device companies achieve over 30% growth from innovation.

Companies target adjacencies to revitalize growth.

Governments prioritize health innovation:

1. Quality of care is challenged by demand.
2. AI promises to reduce workforce strain and balance quality.
3. Costs of care create a financial burden.



Agenda

01

Unbiased, client-centric methodology

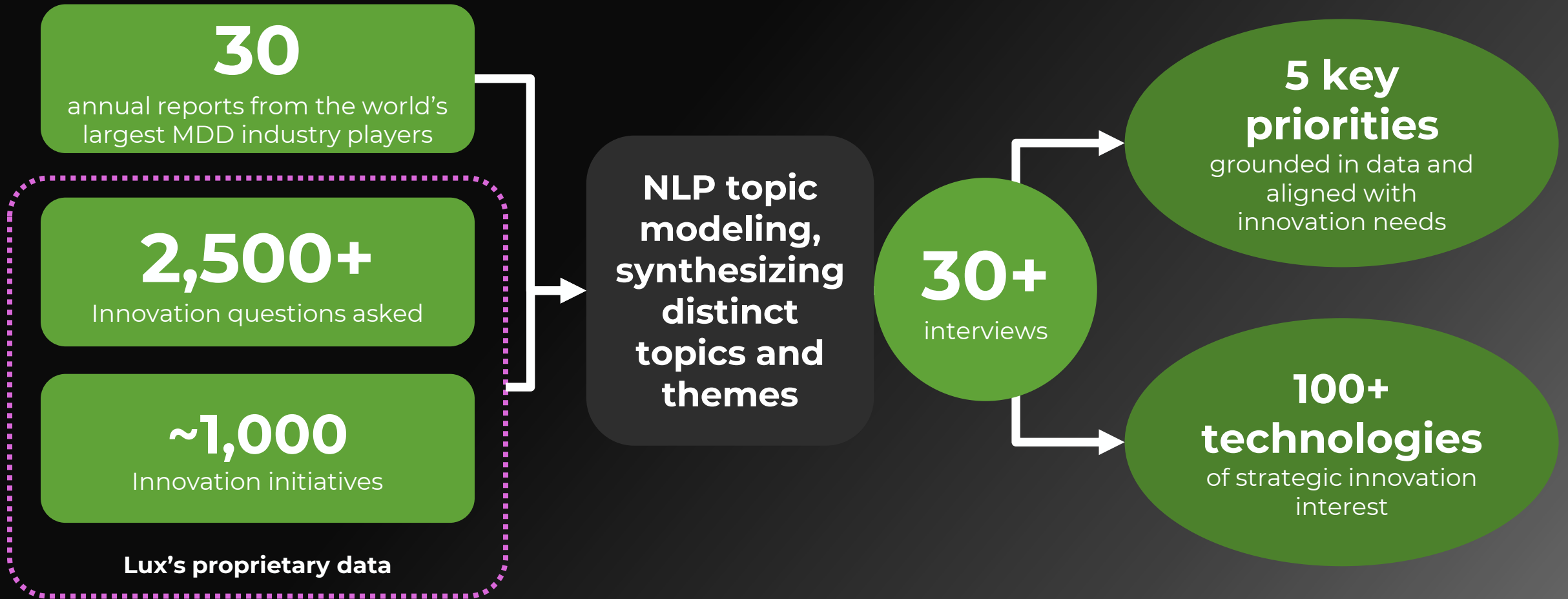
02

Lux client priorities for medical devices and diagnostics innovation leaders

03

Capitalizing on the next era of medical devices and diagnostics innovation

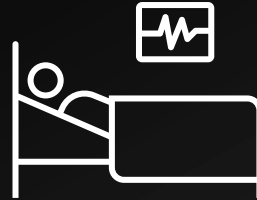
Unbiased, customer centric



Medical Devices and Diagnostics priorities



**Build Precision
Treatment and Care**



**Innovate Point-of-Care
Solutions**



**Streamline Laboratory
Workflows**



**Healthcare Operational
Excellence**

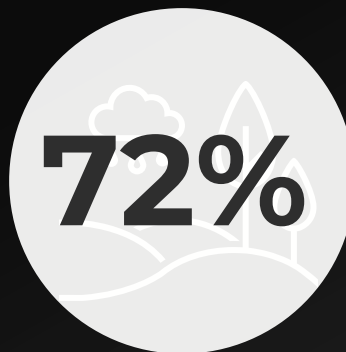


Policy and Regulations

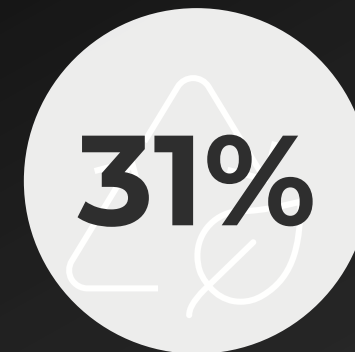
Agrifood and Health priorities



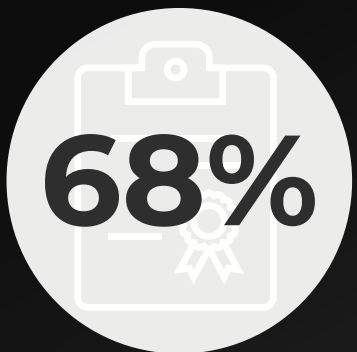
**Build Precision
Treatment and Care**



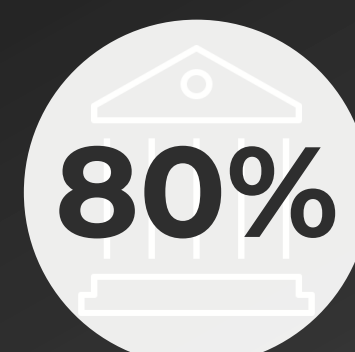
**Innovate Point-of-Care
Solutions**



**Streamline Laboratory
Workflows**



**Healthcare Operational
Excellence**



Policy and Regulations

Lux client priorities for medical devices and diagnostics innovation leaders

Build Precision Treatment and Care

Optimize targeted care while aligning on priorities and cost to drive impact at scale. Leverage precision to cut recovery time, minimize errors, and improve outcomes across urgent and routine conditions.

The healthcare system is shifting toward targeted interventions that enhance outcomes, reduce costs, and limit adverse effects.

The aim is not only to improve recovery times and reduce medical errors but also to achieve greater alignment between patient priorities, provider capacity, and payer incentives.



“

How are **advanced algorithms** enhancing early detection and decision support across specialties?

”

“

How are **digital therapeutics, sensors,** and **robotics platforms** enabling measurable recovery outcomes?

”

Build Precision Treatment and Care

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Innovation in Action

The NHS deployed a breakthrough AI tool across 107 stroke centers that analyzes CT scans within 1 minute, **cutting treatment time nearly in half** and **tripling** the proportion of patients who recover with no or minimal disability.

Innovate Point-of-Care Solutions

Evaluate reliable, point-of-care and at-home monitoring solutions to accelerate treatment decisions, reduce hospital stays and readmissions, expand access, and enhance user experience.

Healthcare is moving beyond centralized facilities to bring timely, accurate, and accessible care directly to patients. Point-of-care and at-home solutions can accelerate treatment decisions and reduce hospital stays and readmissions.

The opportunity lies in transforming diagnosis and monitoring into seamless experiences that improve patient outcomes while easing burdens on healthcare systems.



“

*How are **novel sensors and wearables** enabling accurate monitoring outside clinical settings?*

”

“

*How are **advanced materials** improving device safety, accuracy, and patient comfort in point-of-care applications?*

”

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Innovation in Action

Ireland's University Hospital Galway became the first to implant a **minimally invasive heart-failure sensor** that transmits daily fluid-level data to clinicians, **enabling intervention up to two weeks before** symptoms appear and significantly reducing hospital readmissions.

Healthcare Operational Excellence

Transform repetitive tasks across care settings to relieve workforce shortages and evolving care pressures, enabling clinicians to focus on complex decision-making.

Healthcare systems face mounting pressures from workforce shortages, rising costs, and complex care demands.

Achieving operational excellence requires transforming repetitive and resource-intensive tasks into streamlined, technology-driven processes that free clinicians to focus on complex decision-making.



“

Which **robotics** and **workflow automation systems** are reducing strain on staff and resources?

”

“

How are **immersive tools** enhancing workforce training, procedure planning, and patient engagement?

”

Healthcare Operational Excellence

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Innovation in Action

Mayo Clinic, Cleveland Clinic, and Rush University Medical Center implemented **AI-driven supply chain systems**, leveraging predictive analytics, sensors, and robotics, to prevent stockouts, **cut billions in waste**, and transition from reactive to proactive logistics.

Streamline Laboratory Workflows

Overcome lab bottlenecks by addressing costs, workforce shortages, and high volumes, by leveraging advanced technologies and workflow orchestration systems.

Laboratories are under pressure from rising costs, workforce shortages, and growing volumes of samples that strain traditional processes.

Streamlining workflows is not only about speed; it is about building resilient, scalable systems that deliver accuracy and reliability while lowering costs and easing pressure on lab staff.



“

*How are **novel automation** and **chemistry techniques** improving throughput and consistency?*

”

“

*Which **robotics** and **AI systems** are enabling high-volume, high-accuracy operations with reduced staffing needs?*

”

Streamline Laboratory Workflows

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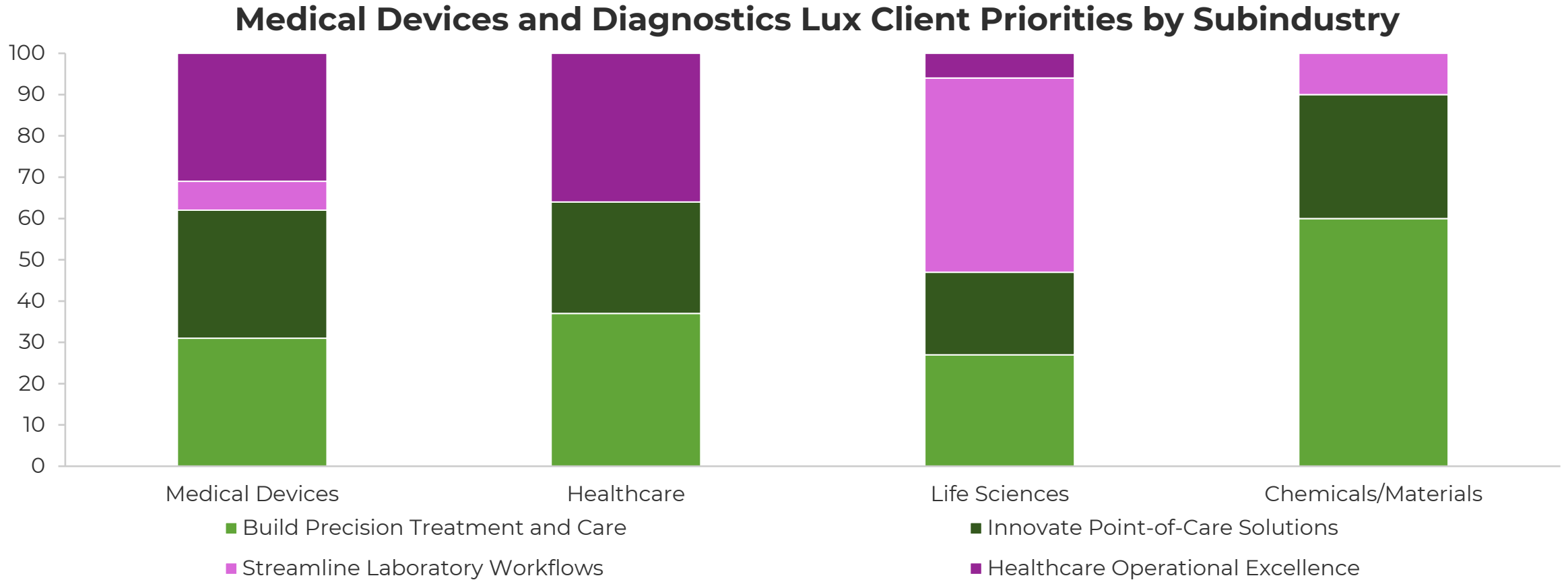
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Innovation in Action

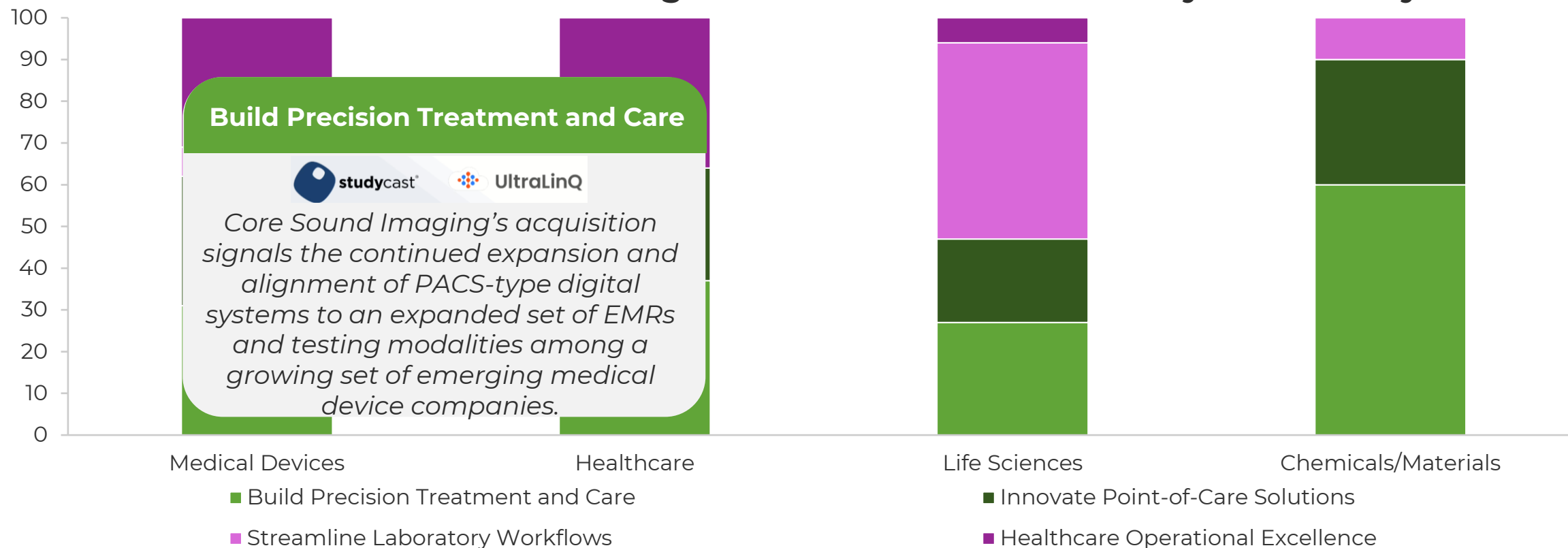
Eppendorf's BioBased consumables replace up to **90% of fossil plastic** with renewable materials while maintaining full performance, enabling labs to reduce **tens of thousands of kilograms of plastic waste** annually without altering workflows.

Distinct priorities in subindustries



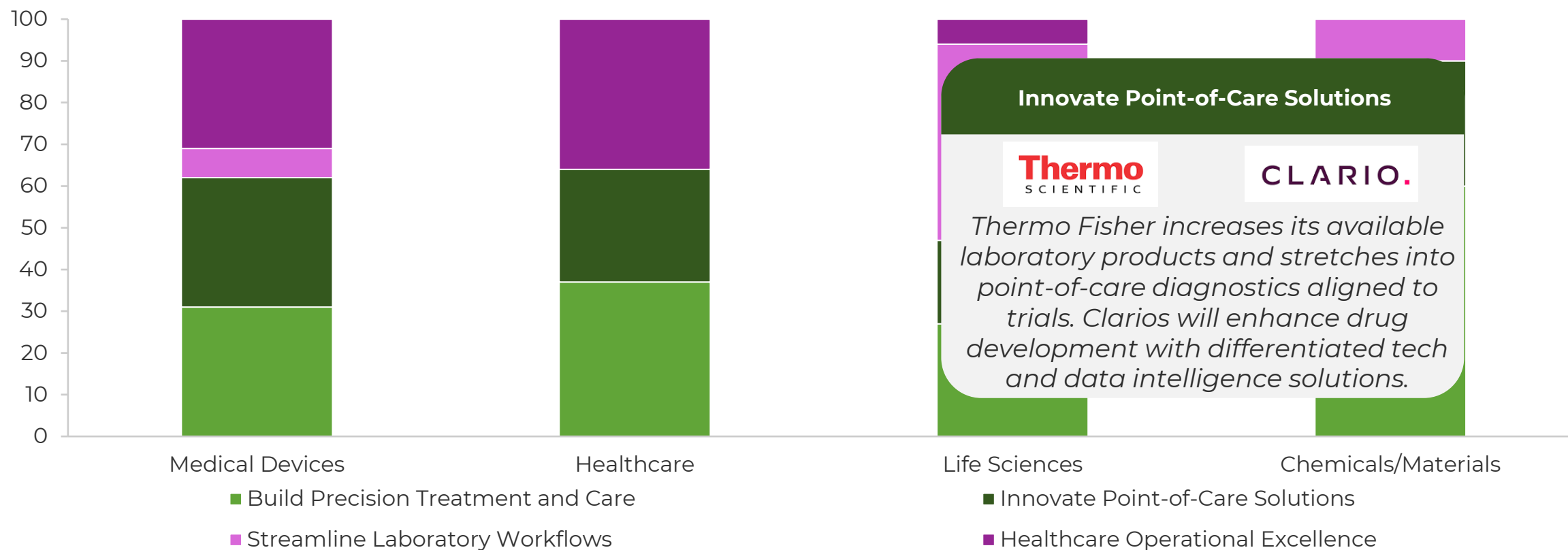
Consolidation of AI and Imaging

Medical Devices and Diagnostics Lux Client Priorities by Subindustry



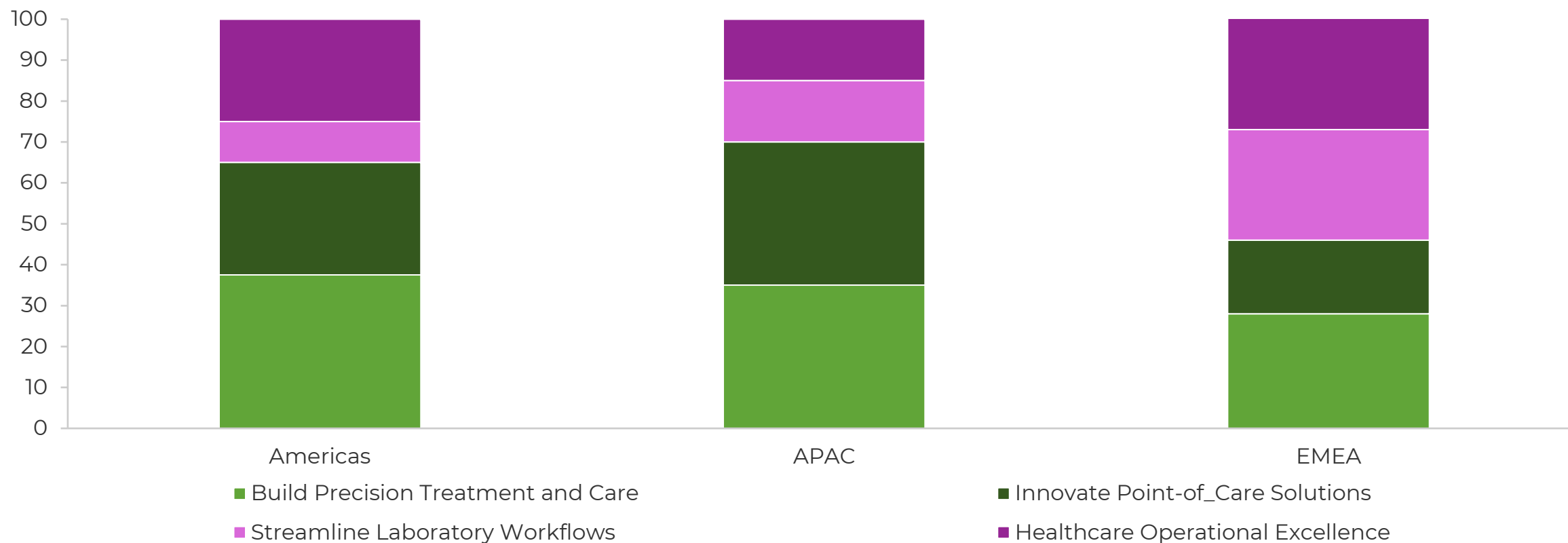
Extend the value of Point-of-Care solutions

Medical Devices and Diagnostics Lux Client Priorities by Subindustry



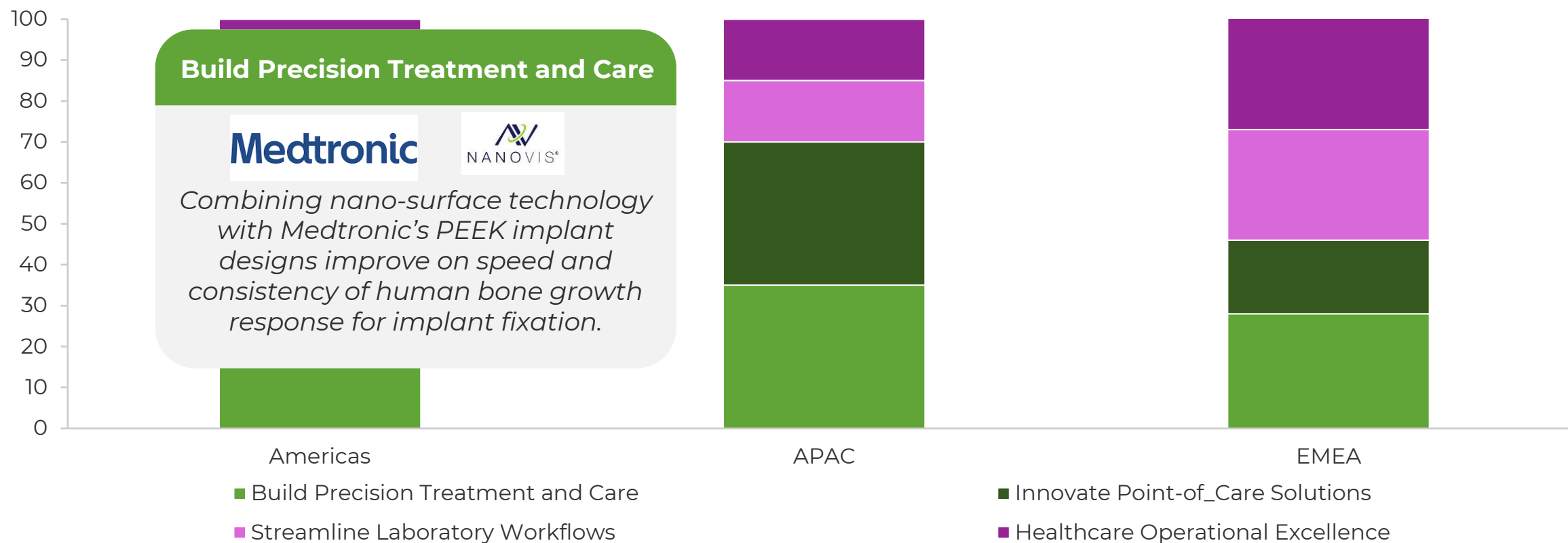
Regional variation is nuanced

Medical Devices and Diagnostics by Geographic Region



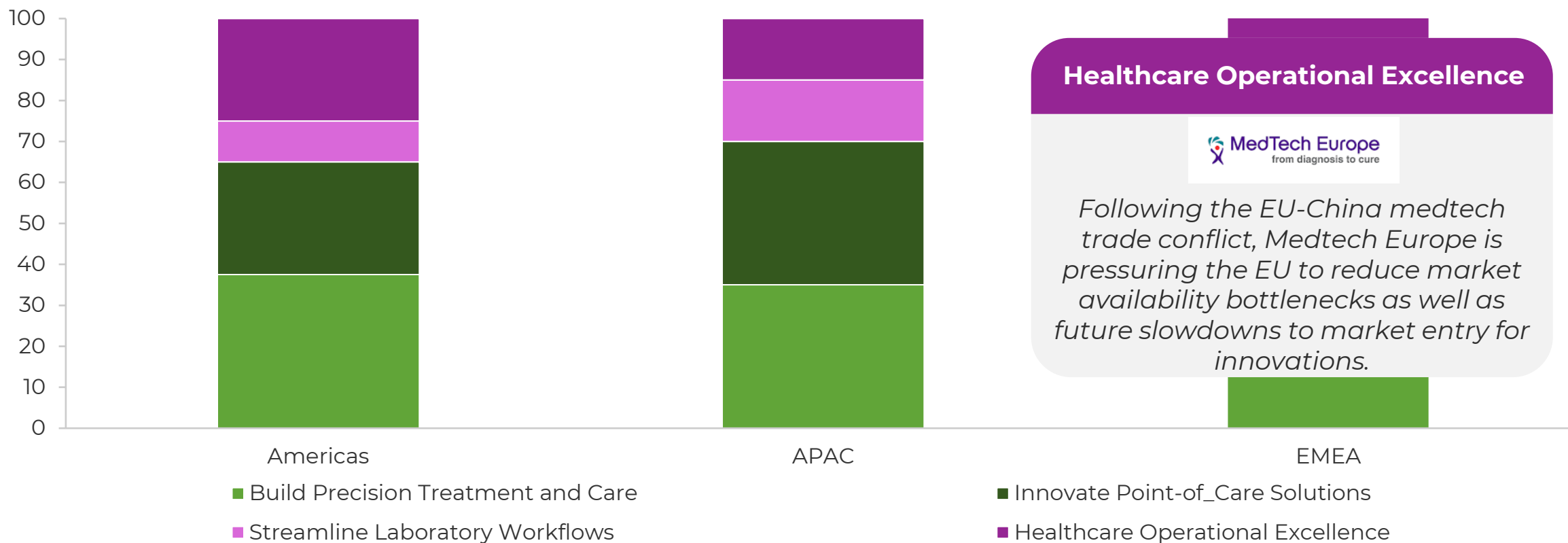
Materials make the difference

Medical Devices and Diagnostics by Geographic Region



Policies that reduce market bottlenecks

Medical Devices and Diagnostics by Geographic Region



Capitalizing on the next era of medical devices and diagnostics innovation

Understanding adjacencies for health

The Lux Health Radar Assesses opportunities across:

1. The continuum of care
2. The patient journey
3. The levels of individual health

Identify two key opportunities:

Platform adjacencies prioritizing diagnostics to preventive care that span the levels of health and continuum of care

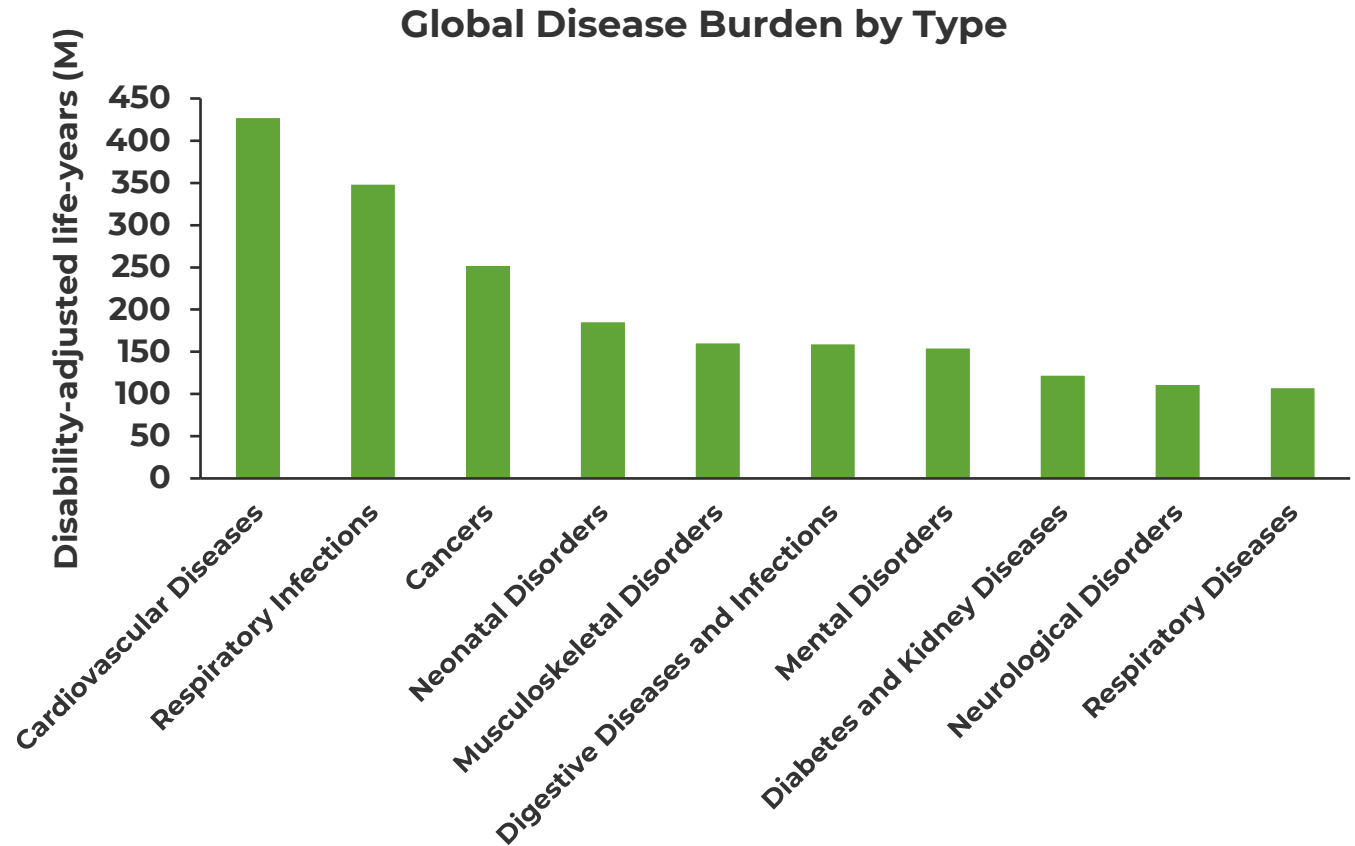
Closed loop systems focusing on end-to-end value creation



Unmet challenges assessments

Prioritization of next-generation tech to improve outcomes

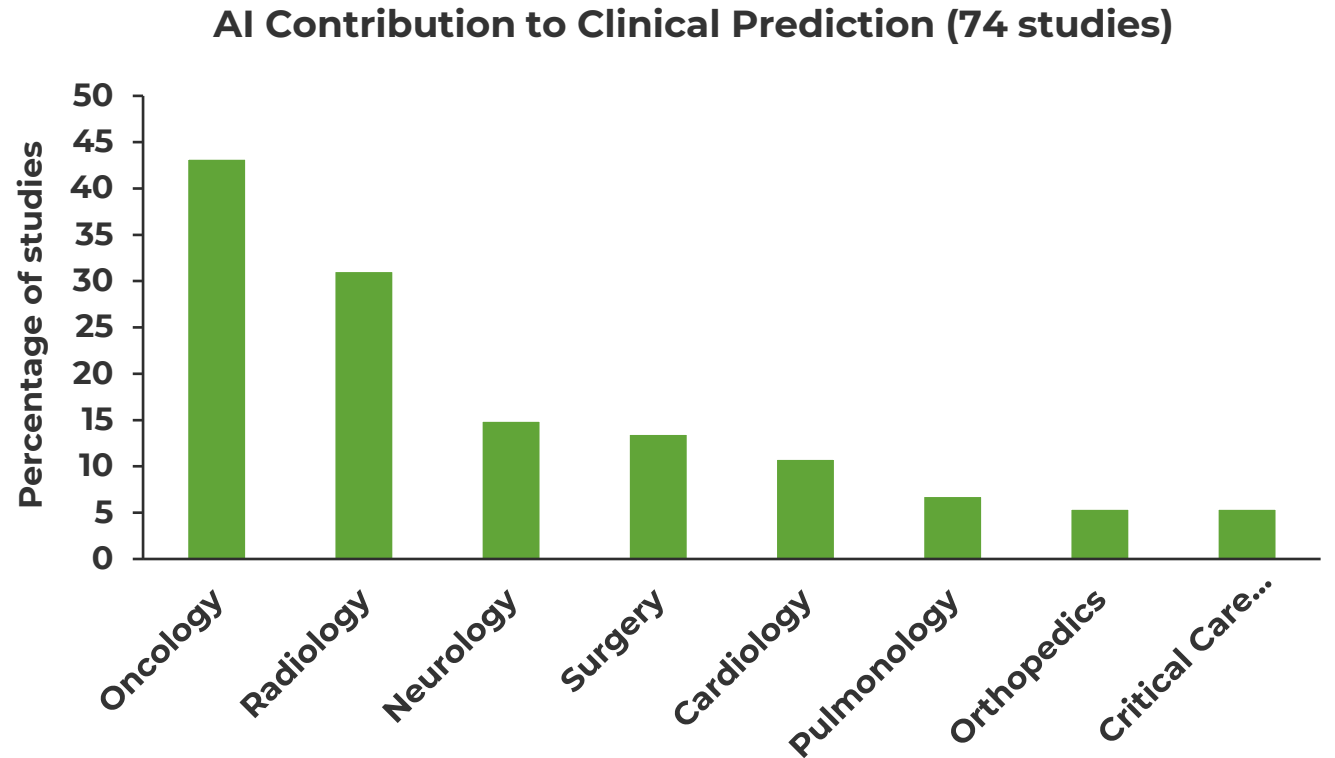
- Identify AI-driven diagnostics for early disease detection
- Expand point-of-care sensing for clinical and validation use-cases
- Invest in biomaterials that improve device and drug outcomes



Transition from capability to market opportunity

Impacts on detection, risk stratification, and treatment planning

- Increases cancer early diagnosis rates by 20%–30%
- Reduces diagnostic workload by 50%
- Enables precise, personalized therapy decisions that materially improve patient outcomes



Key Takeaways

01

Precision, AI-driven care is now the central battleground for competitive advantage.

02

The shift from centralized to distributed care is unmistakable and fast becoming the default expectation.

03

The next wave of MDD innovation will come from linking health adjacencies, addressing unmet challenges, and moving beyond functionality to market opportunity.



Thank You



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About Lux

Lux Research fuels innovators to not only imagine what's possible in the future but also operationalize innovation success in the near term. We deliver research and advisory services to inspire, illuminate, and ignite innovative thinking that reshapes and grows businesses. Using quality data derived from primary research, fact-based analysis, and opinions that challenge traditional thinking, our experts focus on finding truly disruptive innovations that are also realistic and make good business sense.

The “Lux Take” is trusted by innovation leaders around the world, many of whom seek our advice directly before placing a bet on a startup or partner — our clients rely on Lux insights to make decisions that generate fantastic business outcomes. We pride ourselves on taking a rigorous, scientific approach to avoid the hype and generate unique perspectives and insights that innovation leaders can't live without.

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