What Matters and Where: Managing Sustainability in the Healthcare Sector

TRUCOST

BrownFlynn

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Sustainability has emerged as both a financial strategy and leading management approach for high-achieving organizations across all sectors of the global economy. For healthcare organizations, the importance of sustainability is magnified by the correlations to population health. The mission of healthcare is to "protect and promote" human health and to "do no harm." The healthcare industry has the opportunity to strategically engage with its entire value chain and proactively address these issues as a global citizen, in alignment with its societal role to protect the health of its patients.

Beyond its mission, the delivery of healthcare is a business. As such, sustainability for healthcare organizations is now both a financial strategy and management imperative versus a "feel good, nice to have" set of isolated programs.

Sustainability as a financial strategy within healthcare can drive the following benefits:

1. Cost reductions and return on capital
2. Improved patient experience/outcomes and worker safety
3. Business continuity and risk management
4. Human capital development
5. Reputation management

These sustainability-driven benefits link directly to performance improvement, can reduce costs (either directly or indirectly), and have quantifiable financial impacts. As a result, the healthcare sector will benefit by incorporating sustainability considerations into its business strategies at the clinical, operational, and supply chain levels.

The Problem

Although many businesses are starting to invest in sustainability projects and programs, even more struggle to make the case internally to incorporate sustainability into the decision-making process and day-to-day operations. The challenge for many businesses, including those within the healthcare industry, is that sustainability is a wide-ranging concept with broad meanings that are often interpreted differently. As a result, businesses can find it difficult to focus and prioritize the sustainability initiatives most important to their financial performance and stakeholder interests.

Sustainability managers within healthcare also struggle to translate intangible sustainability-related benefits into tangible business terms for their peers in finance, human resources, marketing, and operations. As a consequence, even though the healthcare business is aware of sustainability, it can be hard to move from awareness to business action.

Based on BrownFlynn's and Trucost's experience, some businesses are busy on sustainability projects and programs with questionable relevance to true value creation or financial performance. Our reviews of company CSR reports over the past decade show that significant investments are being made on hundreds of sustainability initiatives with unknown, and perhaps even low, financial and environmental return.

Businesses need a way to connect sustainability with an overall understanding of environmental benefit and financial value. The term "value chain," originally used by Michael Porter in his 1985 book "*Competitive Advantage: Creating and Sustaining Superior Performance*," contends that an organization is more than a random compilation of machinery, equipment, people, and money. Rather, it is the organization's ability to perform particular activities and to manage the linkages between these activities that is the very source of competitive advantage.

How many environmental issues does your business track or invest in?

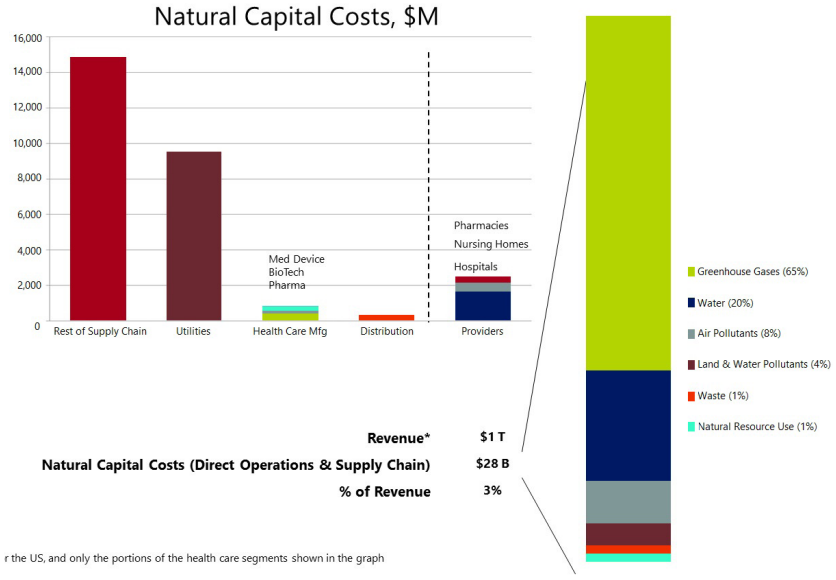
Which of these are truly material to your healthcare business and stakeholders?

BrownFlynn's and Trucost's view is that applying Porter's value chain theory to sustainability in the healthcare sector starts new and important conversations. This paper outlines proven strategies, including value chain Impact Mapping℠ and Natural Capital Accounting, for identifying what matters, where it matters, and how much it matters to better manage sustainability. The business outcome is a systematic approach for mapping, measuring and ultimately understanding how to create value and grow revenue by taking sustainability into account.

The Need for a Value Chain Approach

Healthcare makes up a significant portion of the U.S. economy, with spending on healthcare expected to reach 18% of GDP by 2020. Given the size of the healthcare industry, it is not surprising that it also has a large environmental footprint. Based on Trucost's research of the healthcare industry, for every $1 trillion in revenue generated the healthcare industry requires $28 billion in environmental resources, equivalent to 3% of revenue. Greenhouse gas emissions from the healthcare industry are by far the biggest societal impact on well-being, followed by water use and air pollution (see figure 1).

FIGURE 1: HEALTHCARE INDUSTRY NATURAL CAPITAL COSTS



Sustainability measures within a hospital's own direct operations, especially those that are designed to reduce energy, water, or waste, have a direct financial return on investment and significant benefits for society. Healthcare delivery facilities are energy intensive: The U.S. Environmental Protection Agency's Energy Star Program estimates that energy spending accounts for 1-3% of a hospital's operating budget. In the U.S., one estimate indicates healthcare facilities generate more than 5.9 million metric tons of waste annually. A recent research letter in the Journal of the American Medical Association estimates hospitals contribute approximately 8% of the greenhouse gas emissions resulting from human activity. Other sustainability initiatives, such as the procurement of non-toxic cleaners, medical devices with less chemicals, or more wholesome foods, can lead to healthier outcomes for patients as well as communities as these materials eventually enter the waste stream.

Many healthcare companies have mature sustainability programs which have been effective at driving improvements in energy efficiency and reductions in waste and pollution. Sustainability programs are often built on traditional assessments of a company's impacts using environmental metrics such as metric tons of carbon dioxide equivalent and cubic meters of water used. For instance, U.S. hospitals working with Practice Greenhealth reduced energy use equivalent to avoiding 73,600 metric tons of CO_2 and recycled 122,000 metric tons of waste in 2014. New York Presbyterian Hospital installed cogeneration power equipment, reducing electric grid demand, lowering annual carbon emissions by 27,000 metric tons, and saved $6.92 million annually with a four-year payback period for the installation. Holy Redeemer Health System in Pennsylvania implemented a waste disposal policy that decreased municipal solid waste and red bag waste while boosting recycling. These changes resulted in a 44% reduction in financial costs over three years.

The vast majority of the societal costs from healthcare's environmental impacts are outside of the direct operations of a hospital and are spread across the value chain as shown in figure 1 above. The Trucost research shows that the supply chain accounts for some $15 billion of the U.S. healthcare sector's total societal environmental costs, which makes sustainability a priority issue for chief procurement officers. Recent Trucost research conducted on behalf of the American Sustainable Business Council and Green Commerce and Chemistry Council documented the business and economic case for sourcing products made with safer chemistry. Noteworthy examples included the work by Kaiser Permanente to adopt sustainable sourcing programs to reduce impacts.

In 2010, Kaiser Permanente introduced a sustainability scorecard to rate the environmental performance of its suppliers. The scorecard forms the basis for a standardized list of questions about medical products, which is now used by the U.S.'s five healthcare group purchasing organizations (GPOs). Combined, these GPOs spend approximately $135 billion per year.

All organizations can benefit from addressing sustainability in their supply chain as well as their operations. To maximize the benefits, it helps to take a systematic approach like Impact Mapping℠ and Natural Capital Accounting to understand and account for sustainability across the value chain.

"We hear from members, hospitals, and businesses alike about all of the significant savings and improved environmental performance their commitment to sustainability brings," said Jeffrey Brown, Executive Director, Practice Greenhealth. "We think it's terrific that all of these cost savings can go directly to the improved care for patients and healthier communities."

Impact Mapping℠

Where along an organization's value chain do the potentially positive and negative sustainability-related impacts occur? What are the consequences of these impacts, who should manage them, and how should they be managed? BrownFlynn refers to this process as Impact Mapping℠ as it prompts conversations that ultimately help an organization answer these important questions while visualizing how sustainability topics impact their value chain.

What is Impact Mapping℠?

BrownFlynn's holistic approach to identifying social and environmental issues across the value chain and understanding their importance to the business.

Impact Mapping℠ is an essential step as companies begin to assess the materiality of sustainability to their organization. The process can shed light on identifying potential risk management and business continuity issues while also identifying key stakeholders and their concerns. The Global Reporting Initiative (GRI), a multi-stakeholder group that provides global sustainability reporting guidelines, recently released its G4 Guidelines, which provide guidance on this type of process. GRI's new definition of "boundary" expects companies to describe where impacts occur in the value chain for each material sustainability issue. As a result, companies are looking beyond directly controlled operations and are developing a more holistic view of their impacts.

Businesses reap tangible benefits when putting Impact Mapping℠ into practice, in particular:

Perspective: The process expands perspectives and often highlights impacts that may have been previously overlooked. By understanding the various ways businesses affect their stakeholders and the community at large, the organizations can begin to prioritize their sustainability efforts where their risks and opportunities are the greatest.

Identification: Impact Mapping℠ often reveals management gaps in unexpected areas. Through this lens, businesses are able to identify risks, opportunities, and impacts associated within specific regions for both their operations and their suppliers.

Precision: Rather than listing broad sustainability topics, Impact Mapping℠ enables businesses to describe exactly where in the value chain the sustainability topics are addressed or need to be addressed.

Engagement: Impact Mapping℠ engages internal and external stakeholders in conversations about their impacts and how they affect the "big picture" of the organization. By engaging stakeholders involved in and impacted by different activities in the value chain, the company builds a deeper understanding of the significance of certain impacts, risks, and opportunities.

Actionability: Based upon where the impact occurs in a company's value chain, Impact Mapping℠ illuminates how difficult or easy it will be to address an issue by understanding how deep in the value chain the issue is occurring and what controls they have to take action.

Planning: Impact Mapping℠ helps companies anticipate and plan for future risks and opportunities. As companies develop their materiality assessments, this widened perspective of company impacts will ensure that sustainability efforts are prioritized according to where they have the greatest impact.

Two case study examples, Dignity Health and Baxter International Inc., illustrate Impact Mapping℠ in practice.

Dignity Health

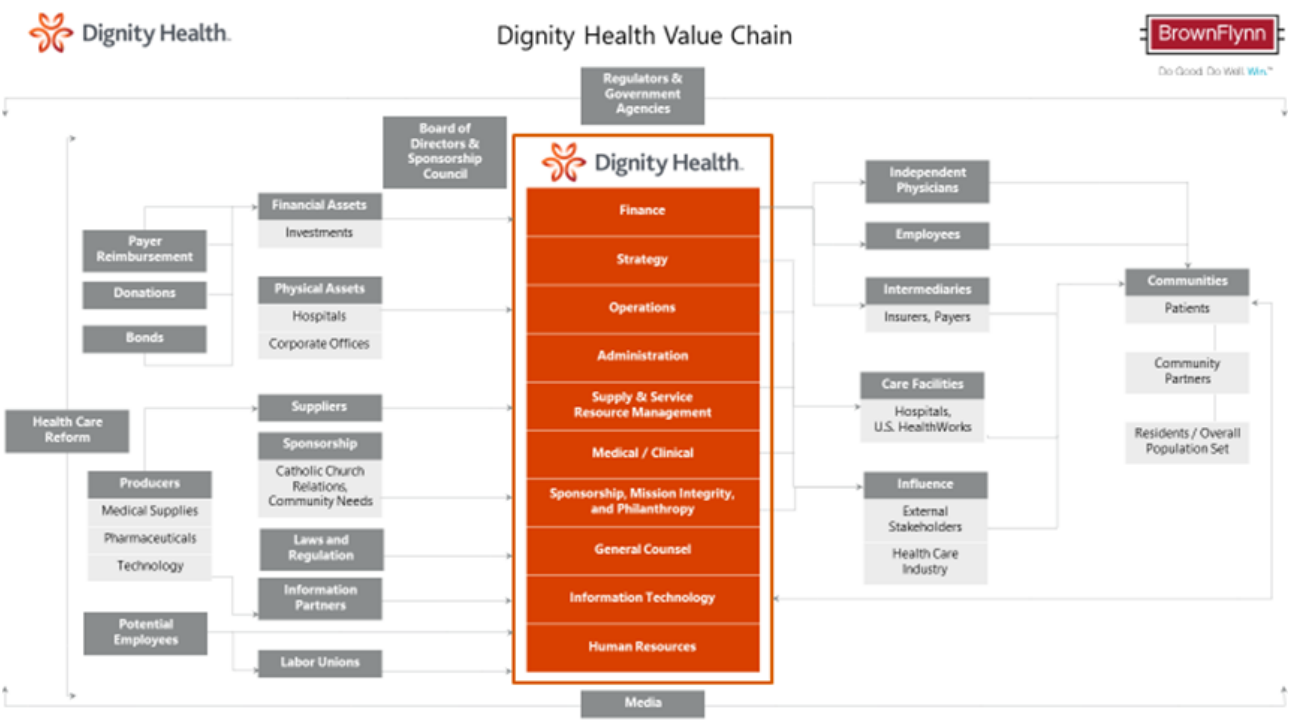
Dignity Health is a recognized leader in the healthcare industry for its long-standing commitment to social and environmental responsibility and reporting. Dignity Health is also recognized as one of the first in its industry to have taken proactive steps to source sustainable products and engage suppliers on issues of sustainability, and continues to set examples in best practices for peer organizations. Transparency and engagement with stakeholders drive Dignity Health's responsible initiatives and sustainability performance.

As part of the evolution of its reporting practices, Dignity Health engaged BrownFlynn to perform a materiality assessment, which included Impact Mapping℠ as an important step in the overall process. BrownFlynn conducted eight impact mapping interviews with key members of the Dignity Health team. Participants received a high-level visual representation of Dignity Health's value chain for review prior to the interview (see figure 2).

Through BrownFlynn's Impact Mapping℠ process, we gained important context for our material impacts as they affect different stakeholder groups. These interviews informed and shaped the remainder of the materiality assessment, ultimately resulting in our enhanced understanding of the most important impacts and opportunities for our organization."

Sister Susan Vickers, Vice President for Corporate Responsibility at Dignity Health.

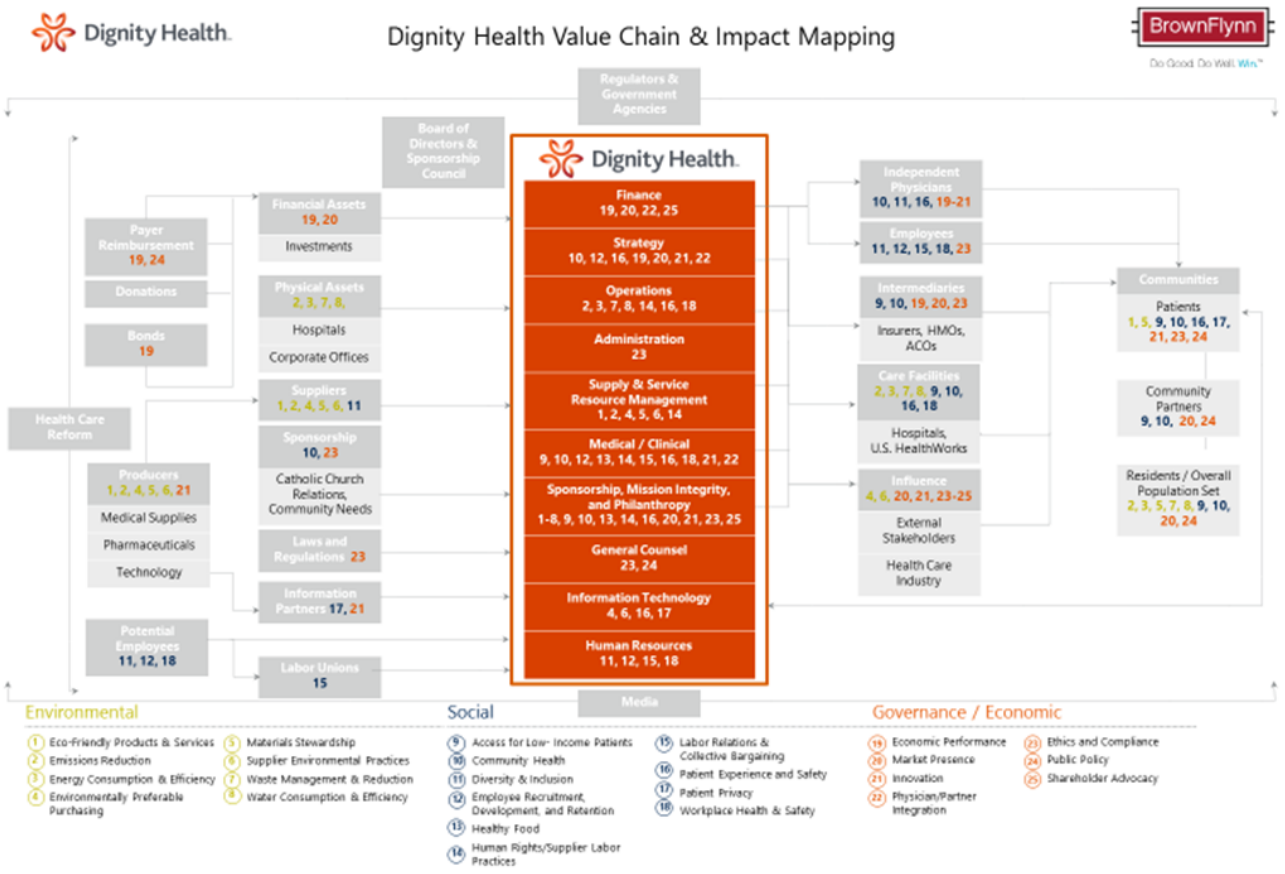
FIGURE 2: DIGNITY HEALTH VALUE CHAIN MAP



Source: BrownFlynn

This value chain highlighted key stakeholder groups, as well as the six major components of Dignity Health's long-term organizational strategy. During the interview, participants identified organizational risks and potential impacts of these risks and opportunities on stakeholders both upstream and downstream in its value chain. BrownFlynn aggregated and synthesized the findings of these interviews and the final impact map represented the collective insights of these experts. At the conclusion of the materiality assessment, Dignity Health received a detailed visualization of the value chain entities impacted by each of its material topics (see figure 3).

FIGURE 3: DIGNITY HEALTH VALUE CHAIN & IMPACT MAP



Source: BrownFlynn

Baxter International, Inc.

Baxter has been recognized as a sustainability leader for decades. With the completion of its long-term goals and the expectation of new reporting guidelines, Baxter tapped BrownFlynn to assist in mapping its value chain and sustainability impacts as part of a materiality assessment.

BrownFlynn developed a draft value chain that meaningfully grouped targeted stakeholders' input by like activity. Through the Impact Mapping[SM] process, BrownFlynn identified the areas in Baxter's value chain where specific ESG impacts, risks, and opportunities occur.

The materiality assessment helped the company synthesize a large amount of information and identify and consider additional stakeholder input. For example, these efforts revealed the importance of employee education and engagement in sustainability to advance this work.

This is particularly relevant as many of Baxter's sustainability programs are maturing, and require employee engagement to achieve higher levels of innovation and performance.

The completion of this work helped Baxter prepare to finalize and implement its new set of sustainability goals and transition to the new GRI G4 reporting standards.

"Corporate responsibility is a foundational priority for Baxter. Our efforts in this arena continue to evolve and mature, and we recognized the need for a fresh perspective and a third-party assessment of our next strategy out to 2020. BrownFlynn served as a valued partner and counsel during our materiality assessment. They helped capture and apply information in a manner that validated and helped refine our new 2020 goals and measures."

Art Gibson, Vice President of EHS & Sustainability at Baxter

Natural Capital Accounting

Armed with an array of prioritized stakeholder insights from the Impact Mapping[SM] process, businesses can quantify the associated risks and opportunities. Natural Capital Accounting uses a value chain perspective and is a way to identify and account for the value of environmental resources and services (natural capital) that a business needs to grow revenue. Natural Capital Accounting is an economic analysis that estimates the cost to society of environmental impacts that occur as a result of activities in a business and its value chain. The analysis entails measuring the environmental impacts in physical terms such as metric tons of greenhouse gas emissions or cubic meters of water. These quantities are then converted into monetary amounts based on their value to society and the environment.

Understanding how revenue growth depends on natural capital enables business to better manage risks such as the future availability of resources (like water or commodities that go into healthcare products) whether in direct business operations or upstream supply chains.

Natural Capital Accounting provides many benefits for healthcare organizations, including:

Understand Risk: Natural Capital Accounting translates environmental impacts into monetary terms so that organizations can understand the risk to the business. By calculating the total cost of its natural capital impacts in dollars and cents, an organization creates a powerful case for change. All of a sudden, sustainability is not some abstract concept but a tangible business issue with serious financial consequences. This should help get the attention of the chief executive and the chief financial officer.

Integrate Sustainability: It gives environmental data much greater clarity and relevance for the business, assisting in the integration of sustainability. It creates a strong evidence base on which to refine improvement plans and set targets. Natural Capital Accounting offers a range of practical tools such as a 'shadow price' on carbon or water so that decisions over investments in new facilities and equipment can be taken into account. Baxter factors a carbon price into investments in the UK and Ireland, and may expand carbon pricing with investments to other regions.

Compare: Assess different types of impacts or regional issues that are not normally comparable in physical terms. Quantifying and valuing impacts in monetary terms enables trade-offs to be considered across different business functions, sustainability issues, regions, or products. It also relates consumption of resources, such as water, to their scarcity, enabling a company to understand its natural capital dependency in relation to finite supplies.

Transparent Reporting: Communicate sustainability issues in business terms, alongside traditional financial metrics. Conventional sustainability reporting using a variety of physical metrics can often present so much information that it can leave readers struggling to get a clear picture of what it all means. While some stakeholders want this level of detail, others want an overview that puts everything into perspective. Natural Capital Accounting puts a single monetary value on environmental impacts enabling organizations to clearly communicate the significance of sustainability to different internal and external stakeholders including shareholders, board members, policymakers, employees, and patients.

What is Natural Capital Accounting?

Natural Capital Accounting is a technique that quantifies environmental performance and puts a monetary value on environmental impacts (such as greenhouse gas emissions, air pollution, water use, waste, etc.) enabling organizations to understand and manage them in a business-like way.

Enhance Reputation: Natural Capital Accounting enhances an organization's reputation by demonstrating leadership on sustainability. It shows that an organization genuinely understands that sustainability is part of its core business.

Two case study examples, Novo Nordisk and the NHS, illustrate Natural Capital Accounting in practice.

Novo Nordisk

Novo Nordisk is the first pharmaceutical company in the world to publish an Environmental Profit and Loss (EP&L) account so that it can further integrate sustainability into its core business. An EP&L is an innovative new tool to help identify and account for the value of environmental resources (natural capital) to a business. The EP&L measures, in financial terms, the natural resources on which a company and its value chain depend to generate revenue.

The Danish company, which is best known for making insulin to treat diabetes, already had a well-established sustainability strategy through which it measures, manages, and reports its environmental and social impacts. The challenge was to explore how an EP&L account could take this to the next level by putting a financial value on its environmental impacts so that their significance can be easily understood and managed alongside other strategic business issues.

The analysis covered Novo Nordisk's global manufacturing facilities and business support functions along the value chain using a mixture of primary data from the company and its suppliers, and modelled data based on direct and indirect expenditure. The scope included extraction and processing of raw materials, manufacturing, and product distribution.

Trucost's analysis showed that the environmental impacts of Novo Nordisk's business cost €223m ($240 million) in 2011. Novo Nordisk's own operations, however, were responsible for only 13% of

these costs. Three quarters came from supply chain impacts, such as greenhouse gases released from agricultural production of maize to make glucose, the main ingredient in insulin.

A significant benefit of the EP&L approach is that it provides a single metric to compare the relative scale of all environmental impacts across company operations, supply chains, and product portfolios. The results of the EP&L will be used by Novo Nordisk to ensure its environmental strategy is focused on the most material environmental 'hotspots' in its business, enabling the company to reduce operational and supply chain risks from volatile energy and raw materials prices, natural resource scarcity and regulatory costs.

FIGURE 4: THE NOVO NORDISK ENVIRONMENTAL PROFIT AND LOSS ACCOUNT 2011

EUR millions	Water use	GHGs	Air pollution	Total	% of total
Novo Nordisk operations	7	21	1	29	13%
Tier 1	10	58	12	80	36%
Tier 2	3	23	1	27	12%
Tier 3	14	69	4	87	39%
Total	**34**	**171**	**18**	**223**	**100%**

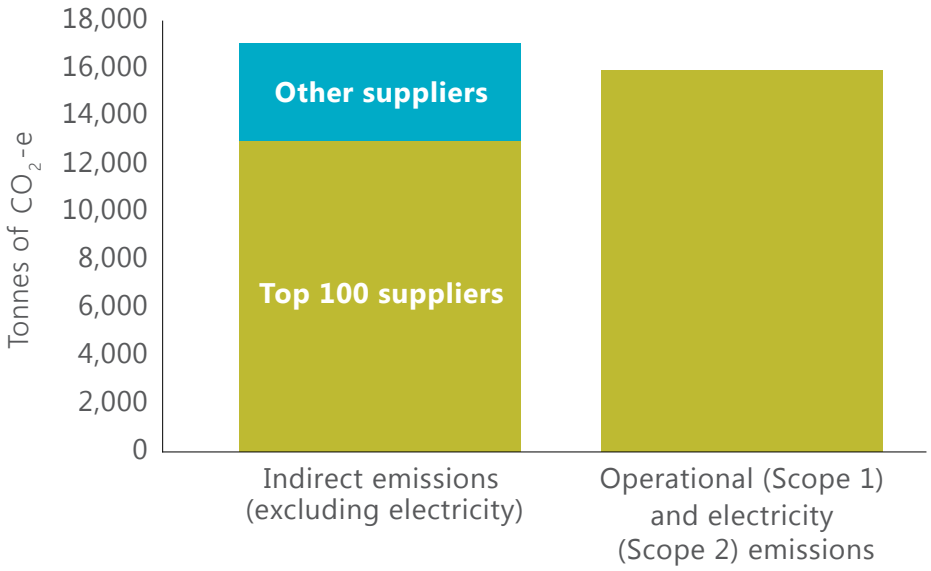
UK's National Health Service (NHS)

Natural Capital Accounting can help healthcare organizations take environmental purchasing to the next level by quantifying and monetizing the environmental impacts of their activities across the supply chain. Armed with this knowledge, healthcare organizations can focus on priority issues, as the following case study shows.

Mid Essex Hospital Services NHS Trust wanted to measure and report on the environmental impacts of its operations and procurement to identify cost savings, deliver on its commitment to accounting beyond the financial bottom line, and to demonstrate best practice against the NHS environmental strategy.

Trucost prioritized the Trust's most significant environmental impacts using its environmental profiling techniques. These impacts covered carbon, waste, and water use. The Trust and its suppliers were then supported in providing relevant data in either physical or financial quantities via an online assessment tool.

FIGURE 5: INDIRECT EMISSIONS FROM SUPPLIERS VERSUS SCOPE 1 AND 2 EMISSIONS



With its database of corporate environmental impacts, Trucost was able to calculate the Trust's supply chain footprint quickly and irrespectively of whether its suppliers currently measure or disclose their own impacts. This enabled Trucost to engage with the Trust's top 500 most carbon-intensive suppliers to help them understand and reduce their impacts. Trucost produced a comprehensive report for the Trust, comparing performance across its sites and identifying opportunities for the Trust to reduce its environmental impacts and associated costs, both directly and through its supply chain.

FIGURE 6: TOTAL DAMAGE COSTS BY KPI

Resource/ Pollutant	Quantity (tonnes)	Total damage costs (£)
Greenhouse gases (GHGs)	33,014	739,543
Waste (Landfill and incineration)	1,492	66,371
Water use	166,476	56,313
Total		862,227

As shown in Table 4, environmental damage costs attributable to the total environmental impacts of the above resources and pollutants amount to £862,227, which equates to about 0.4% of the Trust's revenue in 2008-09. GHG emissions are the main contributor to environmental external costs (86%), followed by waste (7.7%).

By analyzing its building energy use, travel, procurement, waste management and water consumption, the Trust achieved an NHS-first by reporting on all its key areas of environmental impact as recommended by the NHS. The Trust is well-placed to understand and manage its direct and indirect risk exposure to the costs likely to be incurred as UK carbon regulation increases. The Trust also has a data-grounded environmental strategy and system in place to monitor and improve its environmental performance across both its own operations and supply chain.

Next Steps

Many U.S. healthcare providers including Baxter, Dignity Health, and Kaiser Permanente have made excellent progress integrating sustainability into their operations and supply chains. They understand the synergy between their mission to protect human health, the need to promote more sustainable operations, and the financial benefits of becoming more efficient organizations.

Other healthcare organizations can follow suit by taking a value chain approach to sustainability. Impact Mapping℠ and Natural Capital Accounting are two leading examples of this robust and business-like method. They provide a lens through which healthcare organizations can take a holistic view of their value chain to understand material risks, and a systematic process to manage these risks and turn them into opportunities to benefit the organization and its stakeholders.

To learn more about these techniques, please contact:

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About Trucost

Trucost helps companies and investors to achieve success by understanding environmental issues in business terms. Our data-driven insights enable organizations to manage risks and identify opportunities for growth.

We are the world's leading experts in quantifying and valuing the environmental impacts of operations, supply chains, products and financial assets. By putting a monetary value on pollution and resource use, we integrate natural capital into business and investment decisions.

With offices in Europe, the US and Asia, Trucost works with businesses worldwide to increase revenues, improve communications, meet marketplace expectations and comply with regulatory requirements.

About BrownFlynn

Founded in January 1996, BrownFlynn is a leading, award-winning corporate responsibility and sus-tainability consulting firm. The Firm advises Fortune 500 and privately-held companies to drive value creation by focusing on and managing their greatest impacts by understanding their landscape, set-ting their direction, telling their story, and engaging their stakeholders. BrownFlynn is the first U.S.-certified training partner of the Global Reporting Initiative (GRI). The Firm shares its expertise through speaking engagements, whitepapers, webinars, collaborative partnerships, and regular columns in leading publications. To learn more visit brownflynn.com.