

EMISSIONS REDUCTIONS:

HOW HEALTH SYSTEMS LOWER COSTS,
INCREASE ACCESS TO CAPITAL,

AND IMPROVE RECRUITMENT AND RETENTION OF STAFF



Neal C. Hogan, PhD





Road Map

- It's Getting Hot
- A Healthcare Crisis
- ESG Becoming Industry Standard
- Health System Leadership

It is getting hot

The megadrought in the American Southwest has become so severe that it's now the driest two decades in the region in at least 1,200 years

Lake Powell: Powers the Glen Canyon Dam Generation Station

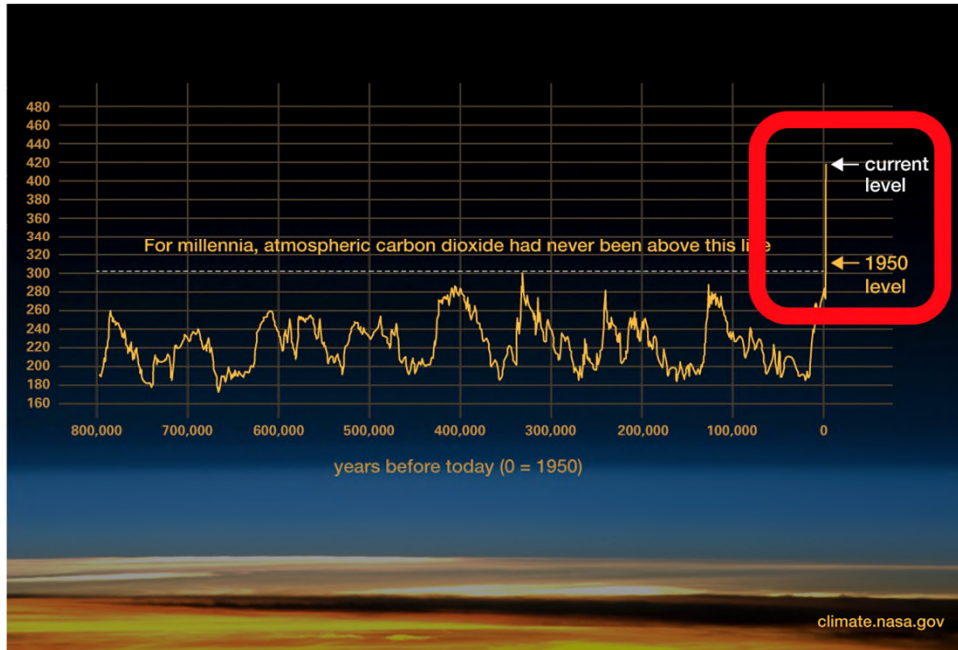


July 2022

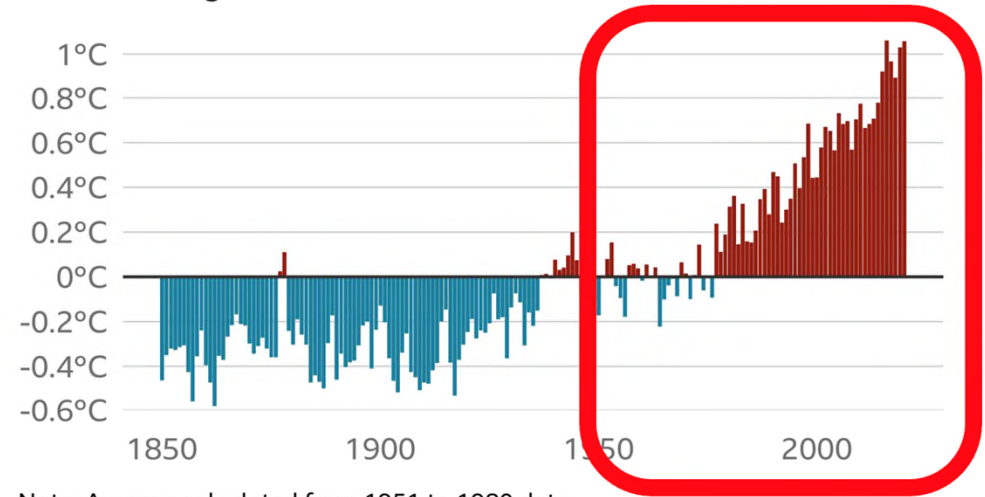
Lake Mead: Powers the Hoover Dam Generation Station



July 2022



Annual mean land and ocean temperature above or below average, 1850 to 2020



Note: Average calculated from 1951 to 1980 data

Not Rocket Science

“There are two numbers you need to know about climate change. The first is 51 billion. The other is zero.”

Bill Gates

How to Avoid a Climate Disaster

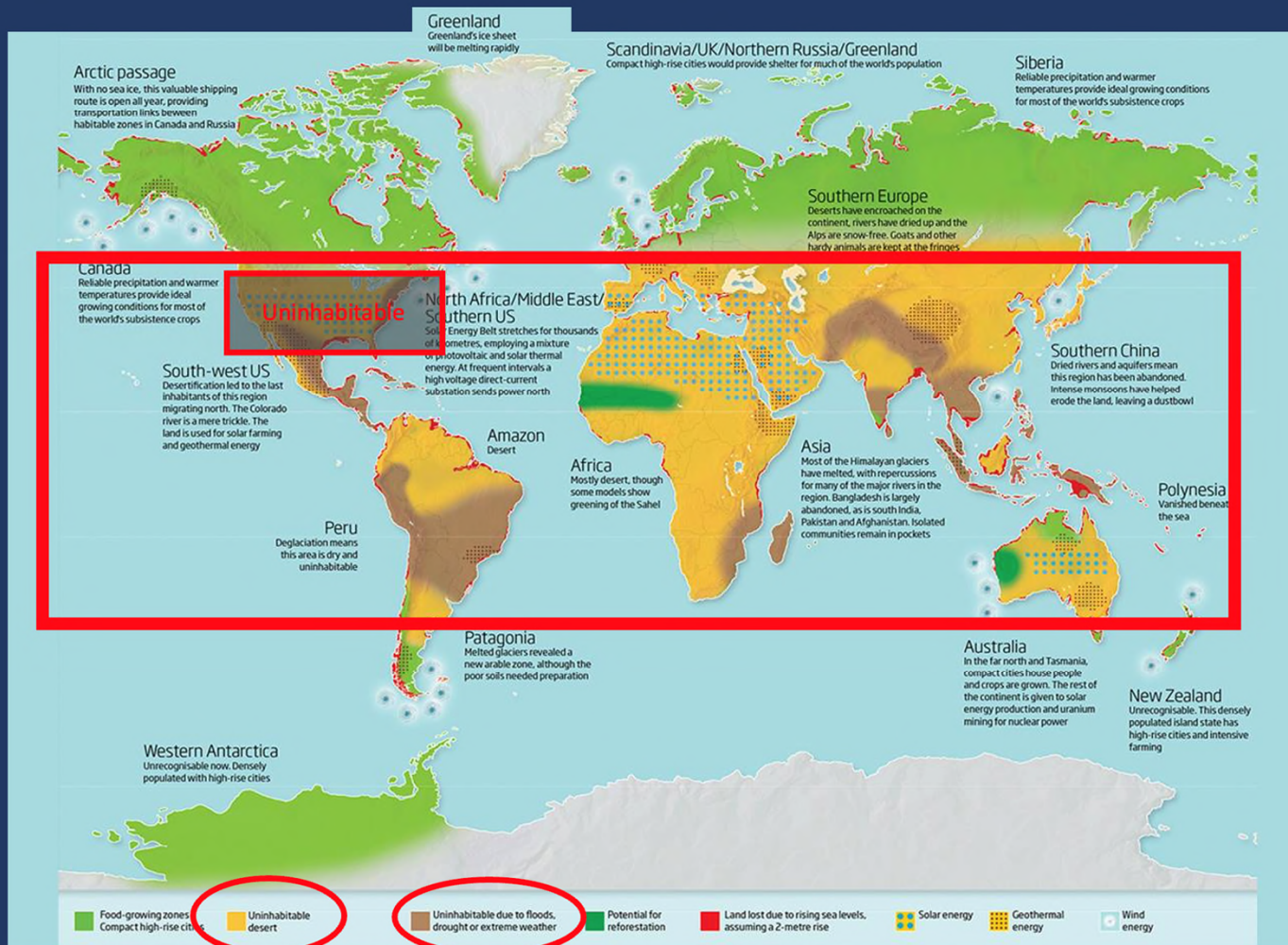


Tipping Point

Happens at 1.5-2 degree C

50-50 Chance in 5 Years

A 4 degree C Warmer World





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Dead Cattle in Kansas



Heat Record In England



July 2022

Fires In New Mexico



Climate Change is a Health Problem Today

- Climate change is aiding the spread of pathogens including Lyme disease and malaria.
- One of the more regionally specific illnesses is Valley Fever or coccidioidomycosis, a deadly fungal infection contracted by inhaling spores from soil and dirt.
- Drought in the southwest has increase the number of diagnoses 800% since 2000.

Just Burning Fossil Fuels Has Created A Health Crisis

- Premature death in people with heart or lung disease
- Nonfatal heart attacks
- Irregular heartbeat
- Aggravated asthma
- Decreased lung function
- Increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.

Getting oil out of the ground produces three barrels of toxic wastewater for every barrel of oil.

- 98.6 percent of children living in an oil production zone exceeded the safe limits for the cancer-causing heavy metal cadmium in their blood.

Particulate emissions kill 9 million people worldwide each year.

- 350,000 Americans

Scope 1



Scope 2



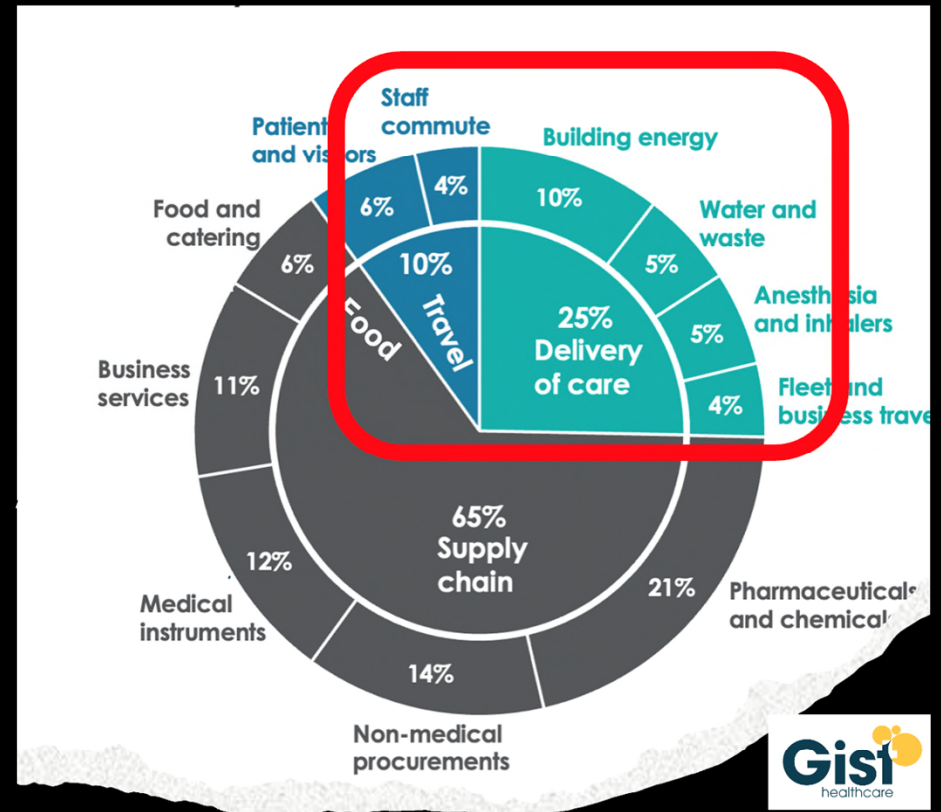
Scope 3



What Makes Up Your GHG Footprint

Scopes of Emissions

US Health System Emissions





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What Is ESG?

A taxonomy that categorizes non-financial factors that impact an organization's long-term performance

Salient Features

These are common characteristics of ESG programs

- Assessment of corporate activities based on impact on company operations and financial results
- Recognition that the adoption of ESG measures drives commercial success
- Involves examining existing programs through the lens of long-term value creation
- Significant focus on the management of ESG risks and opportunities
- Key component of board's oversight responsibilities



Institutional Investor and Proxy Advisor Pressure

Institutional investors and proxy advisors are focused on board oversight of ESG given the impact on long-term value, with increasing expectations for performance and disclosure



"If a situation arises in which the board has failed to effectively identify, monitor, and ensure management of material risks and business practices under its purview based on committee responsibilities, a fund will generally vote against the relevant committee chair. These risks may include material social and environmental risks, inclusive of climate change." (2022 U.S. Proxy Voting Policy)



"With regard to material ESG risk factors, or where the company has failed to provide shareholders with adequate disclosure to conclude appropriate strategic consideration is given to these factors by the board, we may vote against directors of the responsible committee, or the most relevant director." (2022 U.S. Proxy Voting Guidelines)



Considers "demonstrably poor risk oversight of environmental and social issues" among the governance failures that may justify recommending a vote against individual directors, committee members or the entire board (2022 U.S. Proxy Voting Guidelines)



"In situations where we believe that a company has not properly managed or mitigated material environmental or social risks to the detriment of shareholder value, or when such mismanagement has threatened shareholder value, Glass Lewis may recommend that shareholders vote against the members of the board who are responsible for oversight of environmental and social risks. In the absence of explicit board oversight of environmental and social issues, Glass Lewis may recommend that shareholders vote against members of the audit committee. In making these determinations, Glass Lewis will carefully review the situation, its effect on shareholder value, as well as any corrective action or other response made by the company." (2022 U.S. Policy Guidelines)


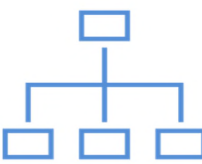




Third-Party ESG Ratings and Rankings

- ESG ratings are third-party assessments of a company's approach to sustainability, which are issued by third-party ESG ratings organizations.
- An ESG rating provides an overall score, grade, or ranking based on an assessment in one of three areas:
 - **The quality and/or quantity of a company's ESG disclosures**
 - **Company performance against ESG criteria**
 - **Company exposure to ESG risk**
- The primary audience for ESG scores are investors, who use them across their investing and voting activities. In addition, these ratings will often be reviewed and discussed at the board level.



SEC Proposed Climate Rule

The SEC proposed climate rule (the "Proposed Climate Rule") would require extensive disclosures regarding climate-related oversight, risk assessment, greenhouse gas ("GHG") emissions, and targets and goals.

Board Oversight	Management Oversight	Climate Risk Assessment	GHG Emissions Metrics	Targets & Goals	Climate-Related Disclosures
 <p>The Proposed Climate Rule would require a company to describe the board's oversight of climate-related risks, including the processes by which the board discusses climate-related risks, how the board is informed about climate-related risks, and how the board sets climate-related targets or goals.</p>	 <p>The Proposed Climate Rule would establish new disclosure requirements and expectations regarding the role of management in a company's climate-related programs and initiatives.</p>	 <p>The Proposed Climate Rule would require a company to disclose climate-related risks that are reasonably likely to have a material impact on the company, including on its business or consolidated financial statements.</p>	 <p>The Proposed Climate Rule would require the disclosure of GHG emissions both disaggregated by constituent greenhouse gases and in the aggregate, and in absolute and intensity terms.</p>	 <p>The Proposed Climate Rule provides that if a company has publicly identified climate-related targets or goals, it must disclose information relating to scope, time horizon, interim targets, progress, and use of carbon offsets or RECs.</p>	 <p>The extensive climate-related disclosures contemplated by the Proposed Climate Rule would require a company to adopt incremental governance measures to ensure that ESG disclosures are vetted and aligned.</p>

SEC Proposed Cybersecurity Rule

The SEC's proposed rule requires disclosure of:

- Material cybersecurity incidents on Form 8-K:
 - Includes reporting of certain third-party incidents
 - No law enforcement exception
- Updates to incidents, and incidents that are material in the aggregate, in 10-Qs/10-Ks
- Proxy disclosure of policies and procedures to identify and manage cybersecurity risks; cybersecurity's role in strategy, financial planning and capital allocation; board oversight process and any directors with cybersecurity expertise; management's roles, expertise and processes



SECURITIES AND EXCHANGE COMMISSION

17 CFR Parts 229, 232, 239, 240, and 249

[Release Nos. 33-11038; 34-94382; IC-34529; File No. S7-09-22]

RIN 3235-AM89

Cybersecurity Risk Management, Strategy, Governance, and Incident Disclosure

AGENCY: Securities and Exchange Commission.

ACTION: Proposed rule.

SUMMARY: The Securities and Exchange Commission ("Commission") is proposing rules to enhance and standardize disclosures regarding cybersecurity risk management, strategy, governance, and cybersecurity incident reporting by public companies that are subject to the reporting requirements of the Securities Exchange Act of 1934. Specifically, we are proposing amendments to require current reporting about material cybersecurity incidents. We are also proposing to require periodic disclosures about a registrant's policies and procedures to identify and manage cybersecurity risks, management's role in implementing cybersecurity policies and procedures, and the board of directors' cybersecurity expertise, if any, and its oversight of cybersecurity risk. Additionally, the proposed rules would require registrants to provide updates about previously reported cybersecurity incidents in their periodic reports. Further, the proposed rules would require the cybersecurity disclosures to be presented in Inline eXtensible Business Reporting Language ("Inline XBRL"). The proposed amendments are intended to better inform investors about a registrant's risk management, strategy, and governance and to provide timely notification of material cybersecurity incidents.

DATES: Comments should be received on or before May 9, 2022.



Reevaluate cybersecurity disclosure controls and procedures and board and management governance systems.

SEC Proposed Human Capital Management Rule

- On Sept 21, 2022, the SEC Investor Advisory Committee met to discuss several topics, including the proposed human capital management rule, which will replace the existing human capital management rule:
 - In 2020, the SEC adopted principles-based disclosure mandate to report on “any human capital measures or objectives that the registrant focuses on in managing the business”;
 - Panelists noted that most companies are not providing much in the way of human capital metrics, and that most of the reporting was in corporate social responsibility reports, which are not audited or standardized;
 - Panelists identified a few human capital metrics as most important, which could appear in the proposed rule: (i) Wages, (ii) Hours, (iii) Equity/diversity, (iv) Turnover and (v) Investments in training;
- The proposed cybersecurity and climate change rules suggest that the proposed human capital management rule could also require disclosing human capital risks and oversight of risk at both the board and management level.

Press Release

SEC Investor Advisory Committee to Discuss Human Capital Labor Valuation, Security-Based Swaps, Beneficial Ownership, and ESG Disclosure on Sept. 21

FOR IMMEDIATE RELEASE 2022-166

Washington D.C., Sept. 19, 2022 — The Securities and Exchange Commission’s Investor Advisory Committee will hold a virtual public meeting on September 21 at 10 a.m. ET. The meeting will be webcast on the SEC website.

The committee will host four panels to discuss:

- Human capital management labor valuation and performance data;
- 10B-1 position reporting;
- 13D and 13G beneficial ownership reports; and
- ESG fund disclosure.

Customer ESG Requirements

- Increasingly common for large customers with significant leverage to impose burdensome ESG requirements that can be the single most important driver of an organization's ESG program
- Requirements can be used by customers to advance their own ESG strategies/goals
- Types of requirements:
 - ESG questionnaires
 - ESG certifications in RFPs or vendor agreements
 - ESG representations or covenants in vendor agreements
- Topics addressed may include:
 - Climate Change and GHG emissions
 - Environmental sustainability
 - Diversity, equity and inclusion
 - Specific human rights issues (e.g., forced labor, minerals sourcing)
 - Adoption of or adherence to ESG policies or codes (e.g., RBA Code of Conduct)

Customer Scope 3 GHG Emissions Targets

243 U.S. companies have set a near-term SBTi target that includes Scope 3 GHG emissions, and an additional 270 U.S. companies have committed to setting an SBTi target within 24 months.



Customer ESG Flow Downs

73 of the top 100 companies in the Fortune 500 have flowed down ESG requirements to suppliers within a supplier code of conduct or through other supplier policies or statements.

Fortune 500





10 ESG Principles for the Healthcare Sector

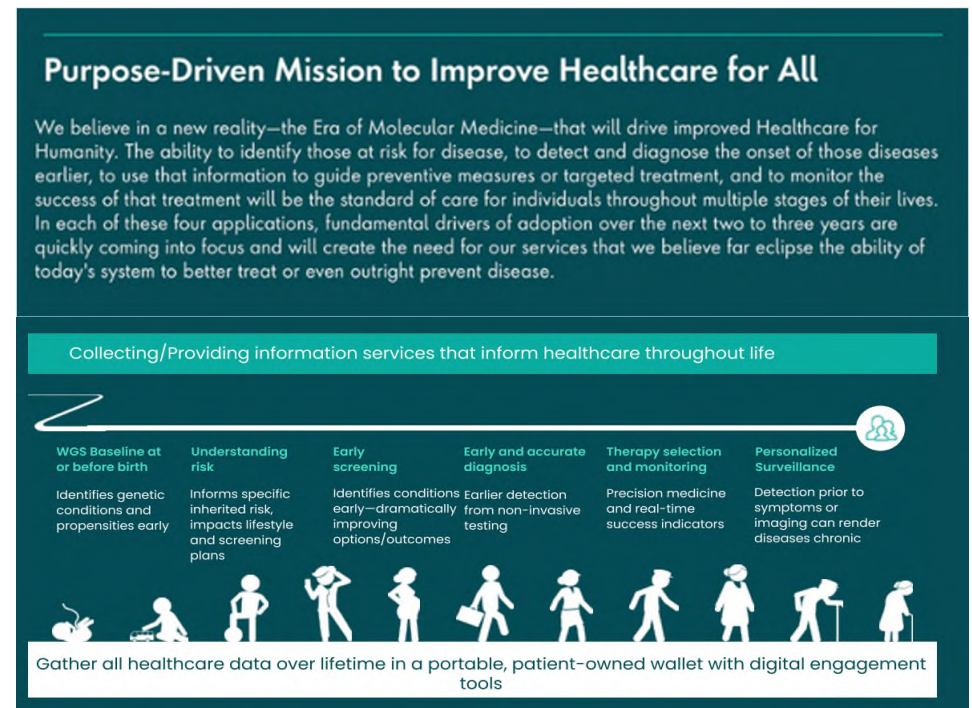
10 ESG Principles for the Healthcare Sector

1 The "S" is paramount

- ❑ Organizations in the healthcare sector should emphasize their social purpose and their impacts on stakeholders.

2 Share your positive impact

- ❑ ESG is not just about risk — it includes finding and communicating opportunities.
- ❑ Healthcare organizations have a powerful ESG story to tell.



Invitae 2022 ESG Report – Healthcare for Humanity

10 ESG Principles for the Healthcare Sector

3 Put access and affordability on the agenda

- ❑ Healthcare organizations should be ready to address access and affordability as core ESG topics.

4 Patient safety is a core ESG topic

- ❑ ESG is leading to more disclosure and scrutiny of patient safety, with safety data informing third-party ESG assessments.

HEALTH CARE DELIVERY Sustainability Accounting Standard



Accounting Metrics

Access for Low Income Patients

HC-DY-240a.1. Discussion of strategy to manage the mix of patient insurance status

HC-DY-240a.2. Amount of Medicare Disproportionate Share Hospital (DHS) adjustment payments received

Quality of Care and Patient Satisfaction

HC-DY-250a.1. Average Hospital Value-Based Purchasing Total Performance Score and domain score, across all facilities

HC-DY-250a.2. Number of Serious Reportable Events (SREs) as defined by the National Quality Forum (NQF)

HC-DY-250a.3. Hospital-Acquired Condition (HAC) Score per hospital

HC-DY-250a.4. Excess readmission ratio per hospital

10 ESG Principles for the Healthcare Sector

5 Success requires proper governance

- ❑ ESG needs to be embedded in key governance bodies, with buy-in and alignment from across management.

6 Business ethics is a top governance priority

- ❑ Core ESG topics include ethical interactions with health care professionals, responsible marketing, and fraud prevention.

Board's Role of Oversight of ESG				
Corporate Governance and Nominating Committee	Compensation and Human Capital Committee	Audit Committee	Quality and Regulatory Committee	Full Board
<ul style="list-style-type: none"> • ESG Goals and Sustainability Review • Climate Change • Product Impact • Transparency • Board Compensation • Lobbying/Political Contributions • Social Investing 	<ul style="list-style-type: none"> • Healthy Workforce and Communities <ul style="list-style-type: none"> • Inclusion, Diversity & Equity (ID&E) • Human Capital • Executive Compensation 	<ul style="list-style-type: none"> • Responsible Supply Chain • Cybersecurity and Privacy • Business Ethics and Compliance 	<ul style="list-style-type: none"> • Product Quality and Safety 	<ul style="list-style-type: none"> • Climate Change • Healthy Workforce and Communities <ul style="list-style-type: none"> • ID&E • Human Capital • Product Quality and Safety • Cybersecurity and Privacy • Board Compensation • Executive Compensation

BD Enterprise Risk and ESG Committee

BD Operating Committees

ESG governance structure, Becton Dickinson

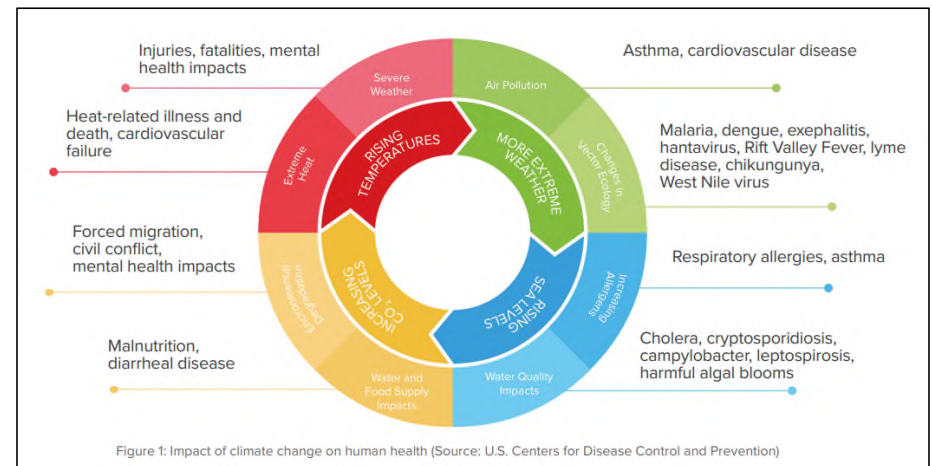
10 ESG Principles for the Healthcare Sector

7 Don't forget the "E" in ESG

- ❑ Healthcare organizations need to meet stakeholder expectations on environmental issues including energy and waste management.

8 Climate change is a priority for everyone

- ❑ Health care accounts for [8.5% of U.S. greenhouse gas emissions](#), with an increasing level of expected regulation on climate change.



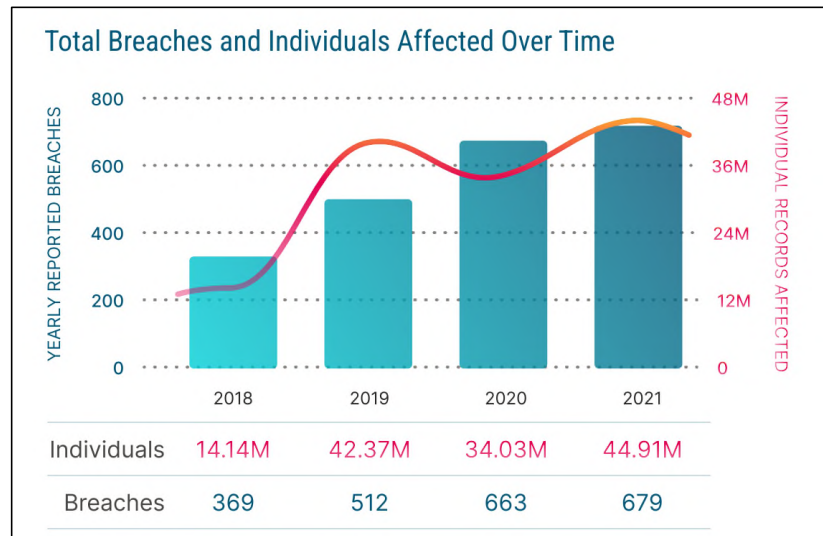
10 ESG Principles for the Healthcare Sector

9 Cybersecurity is a growing ESG issue

- ❑ Cyber attacks against healthcare organizations reached an **all-time high in 2021**, and are a core ESG challenge

10 Stay on top of new and emerging ESG issues

- ❑ Organizations should track ESG issues as they become increasingly important over time to the business and external stakeholders





Road Map

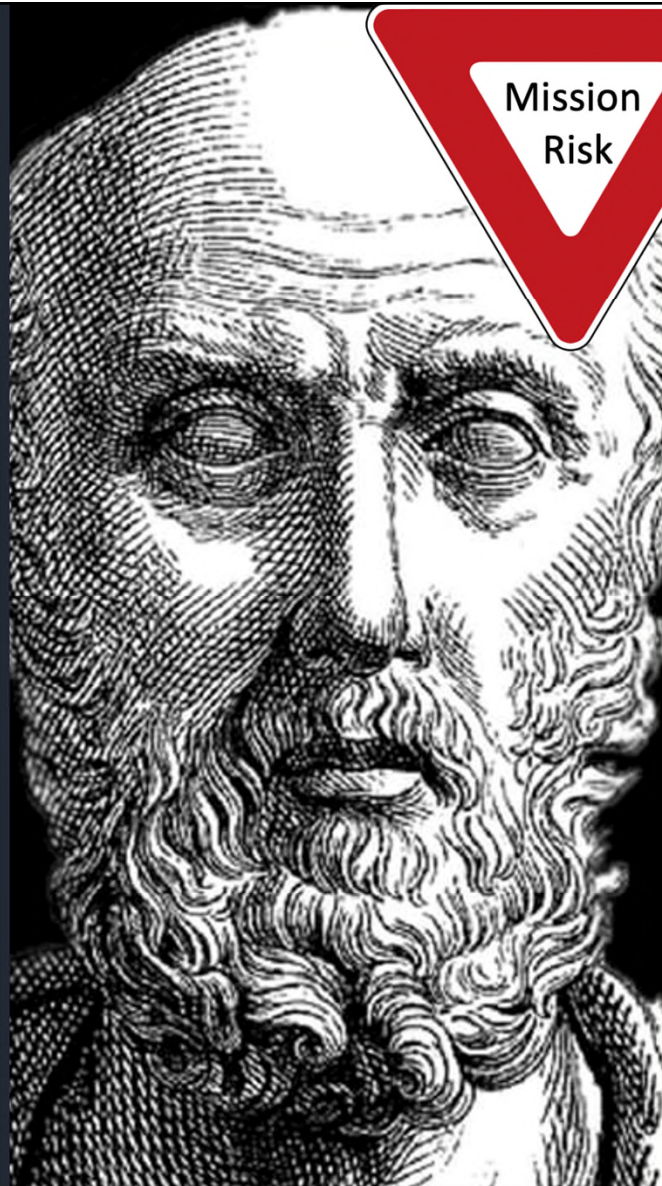
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HHS Climate Pledge: Reduce Emissions 50% by 2030

- AdventHealth
- Advocate Aurora Health
- Advocate Children's Hospital
- AltaMed Health Services Corporation
- Ascension, Aspirus Health
- Atlantic Health System
- Atrium Health
- Baystate Health
- Berkshire Health Systems
- Beth Israel Deaconess Medical Center
- Boston Children's Hospital
- Boston Medical Center
- Care Alliance Health Center
- CentraState Healthcare System
- Cherokee Health Systems
- Children's National Hospital
- Children's Hospital Los Angeles
- ChristianaCare
- CommonSpirit Health
- Dana-Farber Cancer Institute
- DaVita
- Englewood Health
- Gillette Children's
- Greater Lawrence Family Health Center
- Gundersen Health System
- Hackensack Meridian Health
- HealthPartners
- Henry Ford Health
- HonorHealth
- Kaiser Permanente
- Keck Medicine of USC
- Kedren Health
- Legacy Health
- Mass General Brigham
- Memorial Health Services (MemorialCare)
- Montefiore
- Mount Sinai Health System
- Nebraska Medicine
- Northern Arizona Healthcare
- Northwell Health
- NYC Health + Hospitals
- NYU Langone Health
- OhioHealth
- OLE Health
- Oregon Health & Science University
- Providence Health
- Rush University System for Health
- RWJBarnabas Health
- Seattle Children's Hospital
- Southcoast Health
- SSM Health
- Stanford Children's Health
- Stanford Health Care
- Stanford Health Care Tri-Valley
- Steward Health Care System
- Stony Brook University Hospital
- Sun River Health
- The Valley Health System
- Tufts Medicine
- University Medical Center of El Paso
- University of Arkansas for Medical Sciences
- University of California Health
- University of Nebraska Medical Center
- University of Pittsburgh Medical Center
- University of Utah Health
- UW Medicine
- Valley Children's Healthcare
- WellSpan Health
- Western Wisconsin Health



Will you be successful in getting to NetZero by 2050?

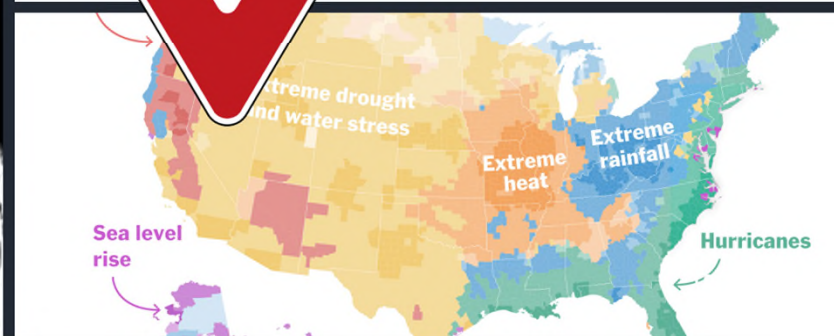


How do you keep tax status when emissions conflict with Hippocratic Oath?

Investors See 3 Big Risks for Health Systems



How bad will it get where you live?





Business Value in ESG

• Lower Costs

- Lower travel and expense costs due to reduced business travel
- Lower power costs due to increased energy efficiency in buildings and industrial processes
- Optimized supply chain routing and logistics
- Improved product composition and packaging
- Reduced inventory waste
- Improved risk management

Workforce Benefits

Companies with sustainability programs have 40% higher employee retention (Deloitte), and 55% better employee morale (HBR).

Three-quarters of millennials (the largest generation in the U.S. workforce as of 2016 (Pew Research) said they would take a pay cut to work at an environmentally responsible company (Fast Company).

Competitive Advantage

65% of consumers in North America & Europe expect companies to care about the environment. (Nielsen)
51% say environmental sustainability is more important to them today than it was 12 months ago. (IBM).

Business Partnerships

Companies like Microsoft, Meta, Salesforce, Apple and others are increasingly requiring their vendors not only to report climate data, but to agree to a plan to reduce their emissions by a target year.

Better market returns

In 2020 ESG leaders beat the market by 23.4% (Fidelity)

In 2021, ESG leaders saw 8% higher returns than the broader U.S. market (Morningstar)

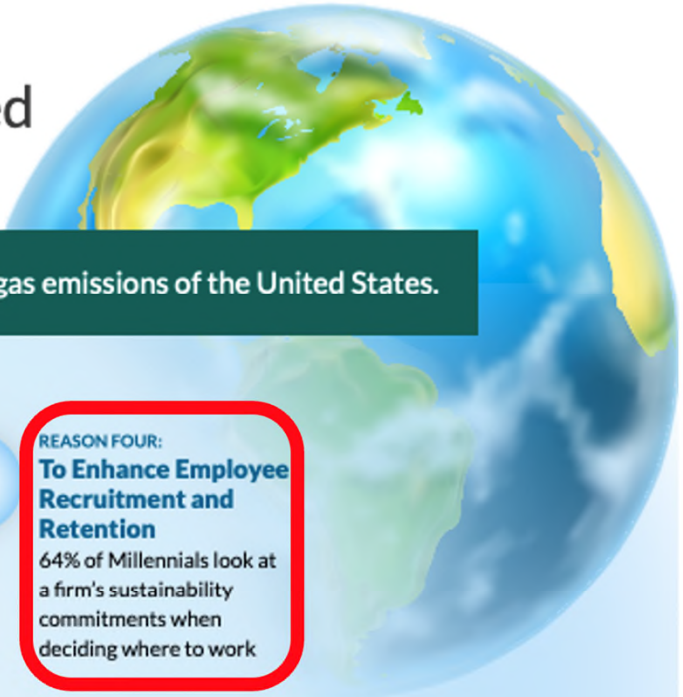
Higher Valuations

A McKinsey survey of C-suite executives and investors revealed a willingness to pay a 10% premium to acquire a company with a positive record on ESG

Lower Capital Costs

Companies with high ESG scores receive discounts on cost of capital, 10% on average vs. those with low ESG scores, as the risks that affect your business are reduced (MSCI, McKinsey, and Said Business School at Oxford).

9 Reasons Why Health Systems Need to Work on Climate Change Now



Health systems contribute about **10%** of the greenhouse gas emissions of the United States.



REASON ONE:

To Improve the Health of the Community

Emissions particulates lead to over **350,000 deaths** annually



REASON TWO:

Because Sustainability Can Lower Costs

Embracing efficiency and shifting to renewable energy sources lead to savings



REASON THREE:

To Maintain and Improve Access to Capital

S&P and Moodys plan to move to include environmental performance metrics in their analyses



REASON FOUR:

To Enhance Employee Recruitment and Retention

64% of Millennials look at a firm's sustainability commitments when deciding where to work



REASON FIVE:

To Protect Your Brand and Grow Your Market Share

4 out of 5 consumers look for brands committed to environmental sustainability



REASON SIX:

Because Eliminating Health System Emissions Will Be Challenging

A US hospital is the largest emitter of carbon per square foot of any building in the world



REASON SEVEN:

To Improve Social Equity and Tackle Social Determinants of Disease

Particulate emissions disproportionately impact communities of color, as will climate change



REASON EIGHT:

Because Health Systems Are Community Leaders

Health systems are often the largest employer in the community, and always an admired leader



REASON NINE:

To Leave a Healthy Climate for Our Children and Grandchildren

Our children, and their children, deserve to inherit the same beautiful planet we did

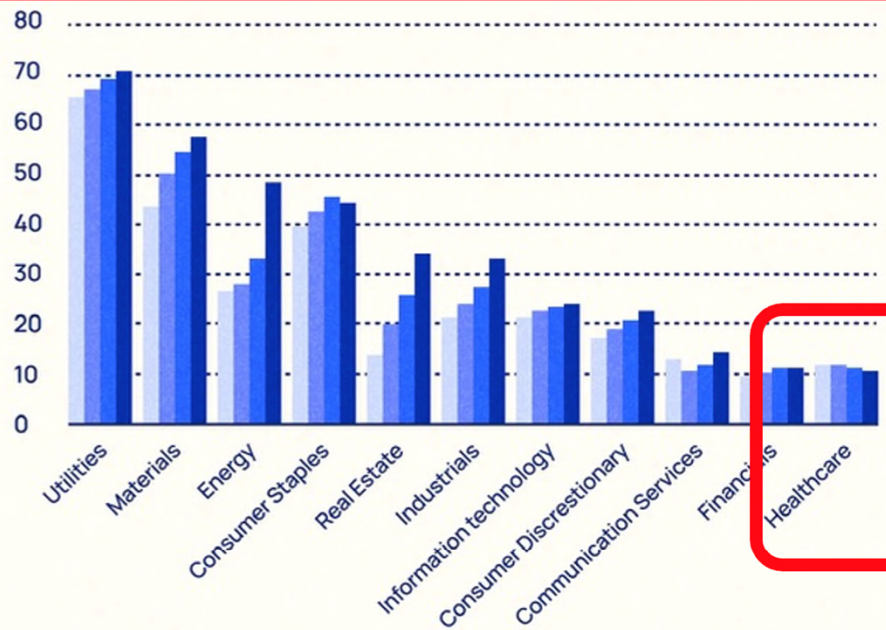


What gets measured gets managed

Greenhouse gas disclosure has been increasing in most sectors

● 2017 ● 2018 ● 2019 ● 2020

% Percentage of US companies disclosing Scope 1 and/or Scope 2 emissions by sector



Inside the Health System: Scope 1 and 2

“Health systems are discovering that 80-90 percent of the Scope 1 and 2 emissions come from the energy intensity of their buildings.”

Jon Utech

Senior Director

Office for a Healthy Environment

Cleveland Clinic

“For health systems – they need to get a handle on the energy intensity of their buildings, and on the emissions associated with their electricity.”

Ramé Hemstreet

Vice President, Operations

Chief Sustainable Resources Officer

Kaiser Permanente

9 Areas of Focus for a Net Zero Plan



Buildings



HVAC



Supply Chain



Electrical Source



Clinical Care



Partners



What Plugs In



Transport



Waste

Scope 1:
"A thousand projects"

9 Areas of Focus for a Net Zero Plan



Buildings



Electrical Source



What Plugs In



HVAC



Clinical Care



Transport



Supply Chain

Scope 3



Partners



Waste

Scope 3:
"A thousand contracts"

9 Areas of Focus for a Net Zero Plan



Buildings



Electrical Source



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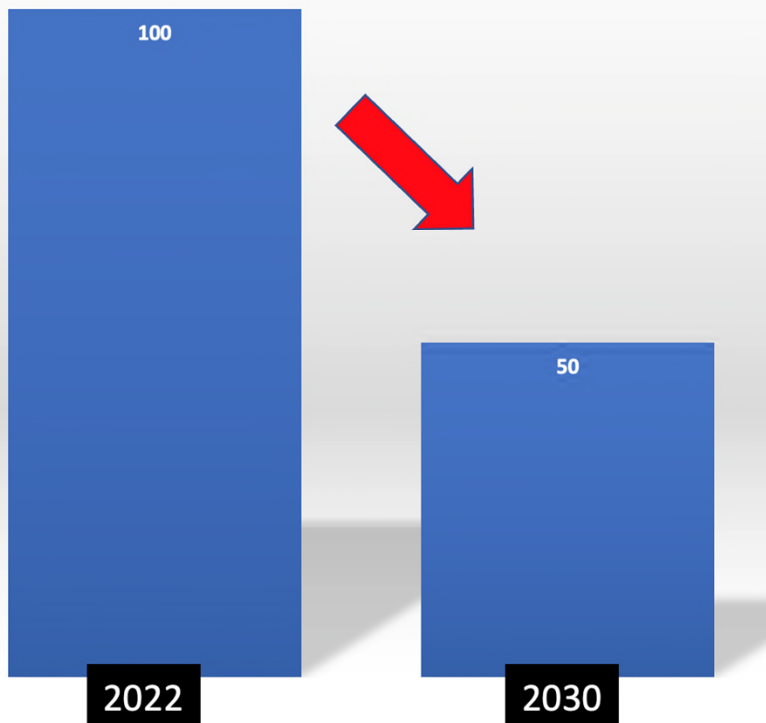
Partners



Waste

Scope 2:
Flipping a Switch

McKinnon Health System Wants to Achieve a 50% Reduction in Emissions



Accounting for McKinnon's Emissions by Scope

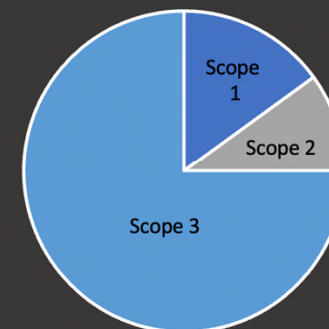
- Scope 1: 15% of Emissions
- Scope 2: 10% of Emissions
- Scope 3: 75% of Emissions

Scope 1:
"A thousand projects"

Scope 2:
Flipping a Switch

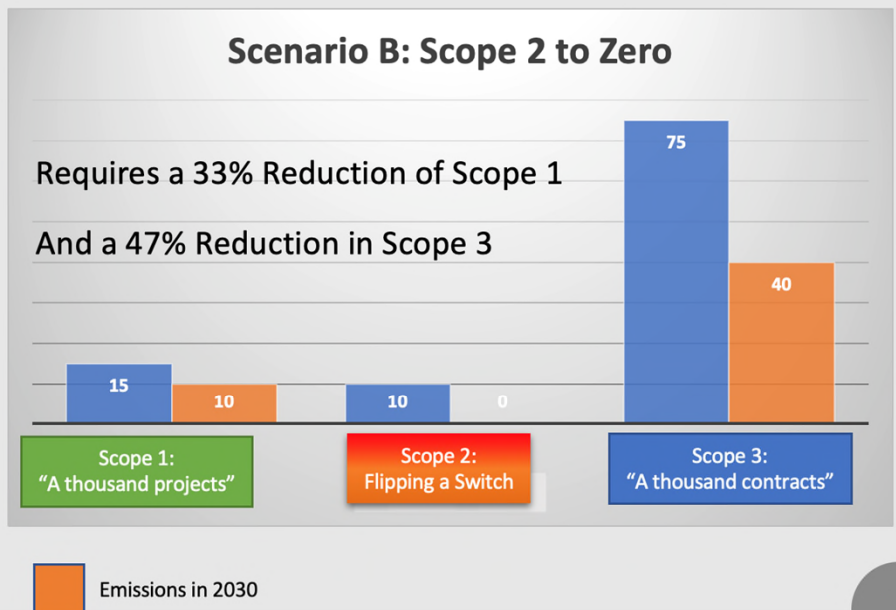
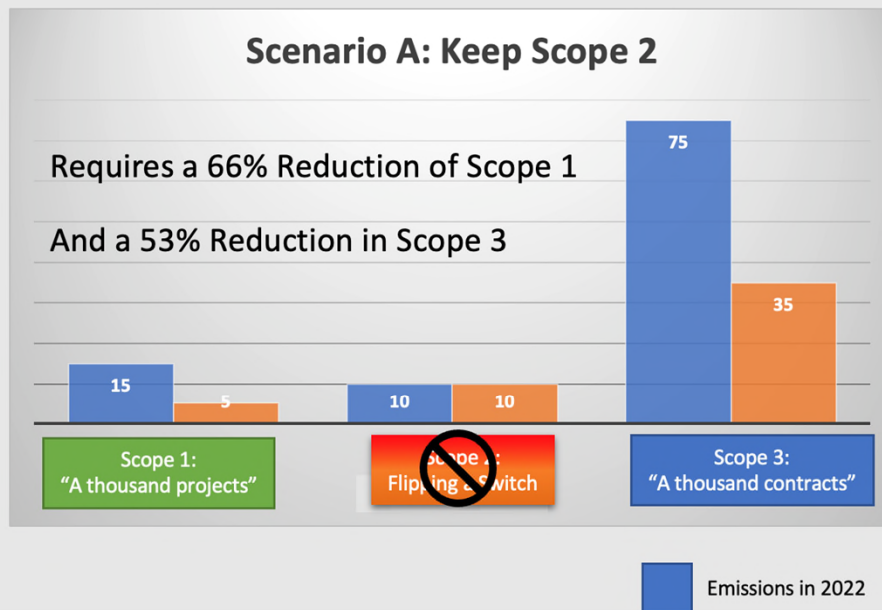
Scope 3:
"A thousand contracts"

McKinnon Emissions



1 2 3

How should McKinnon reduce emissions?





Power Purchase Agreements

Agreeing to buy electricity generated by a renewable plant at a fixed monthly rate for a term of X years

- Physical PPA
 - The corporate buyer takes ownership of the electrons produced by the renewable energy project.
 - This transaction places responsibility on the buyer for monetizing/selling the electrons, which is typically achieved by selling them into the wholesale electricity market.
- Virtual PPA
 - The corporate buyer does not own and is not responsible for the physical electrons generated by the project.
 - The VPPA is purely a financial transaction, exchanging a fixed-price cash flow for a variable-priced cash flow and renewable energy certificates (RECs).
 - Because the VPPA is purely financial, the buyer still needs to meet its electricity load through traditional channels—therefore, the VPPA means the buyer’s relationship with its utility at the retail level remains unchanged.

9 Areas of Focus for a Net Zero Plan



Buildings



Electrical Source



What Plugs In



HVAC



Clinical Care



Transport



Supply Chain



Partners



Waste

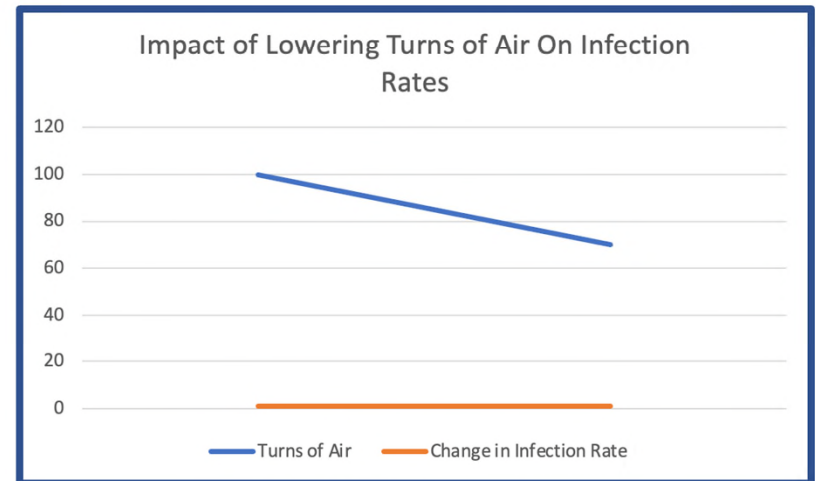


9 Areas of Focus for a Net Zero Plan



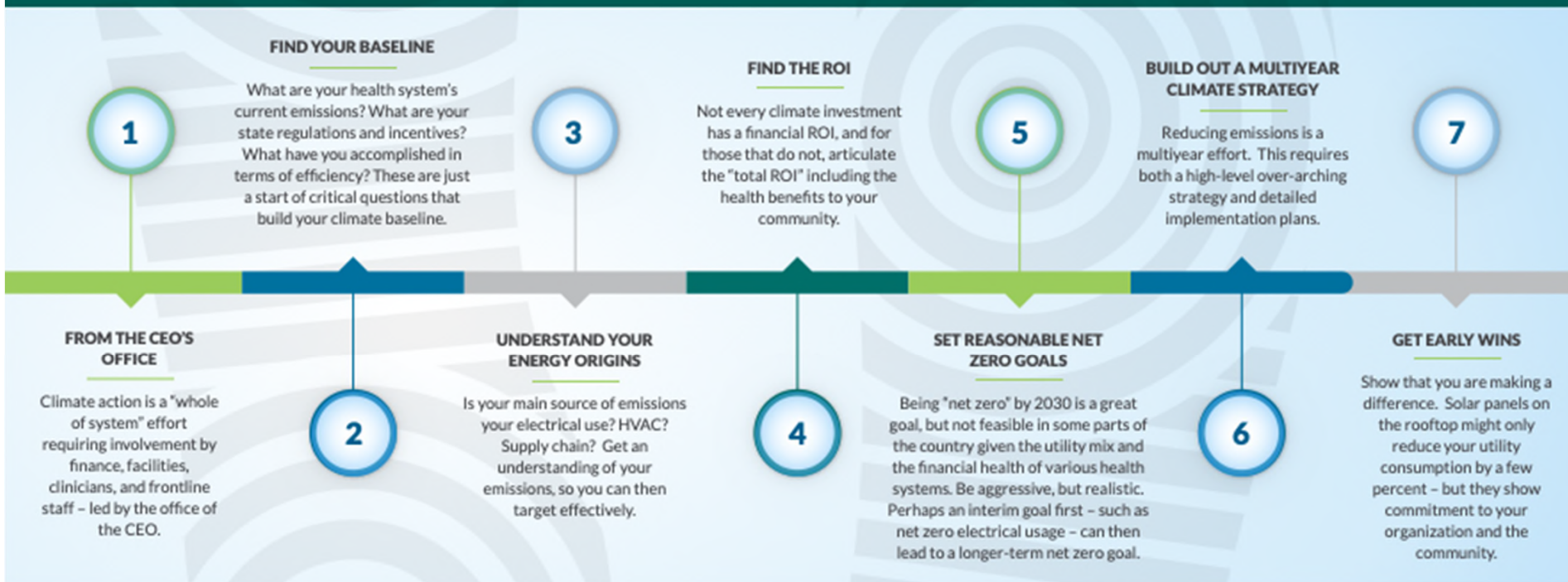
HVAC

THE University of Vermont MEDICAL CENTER

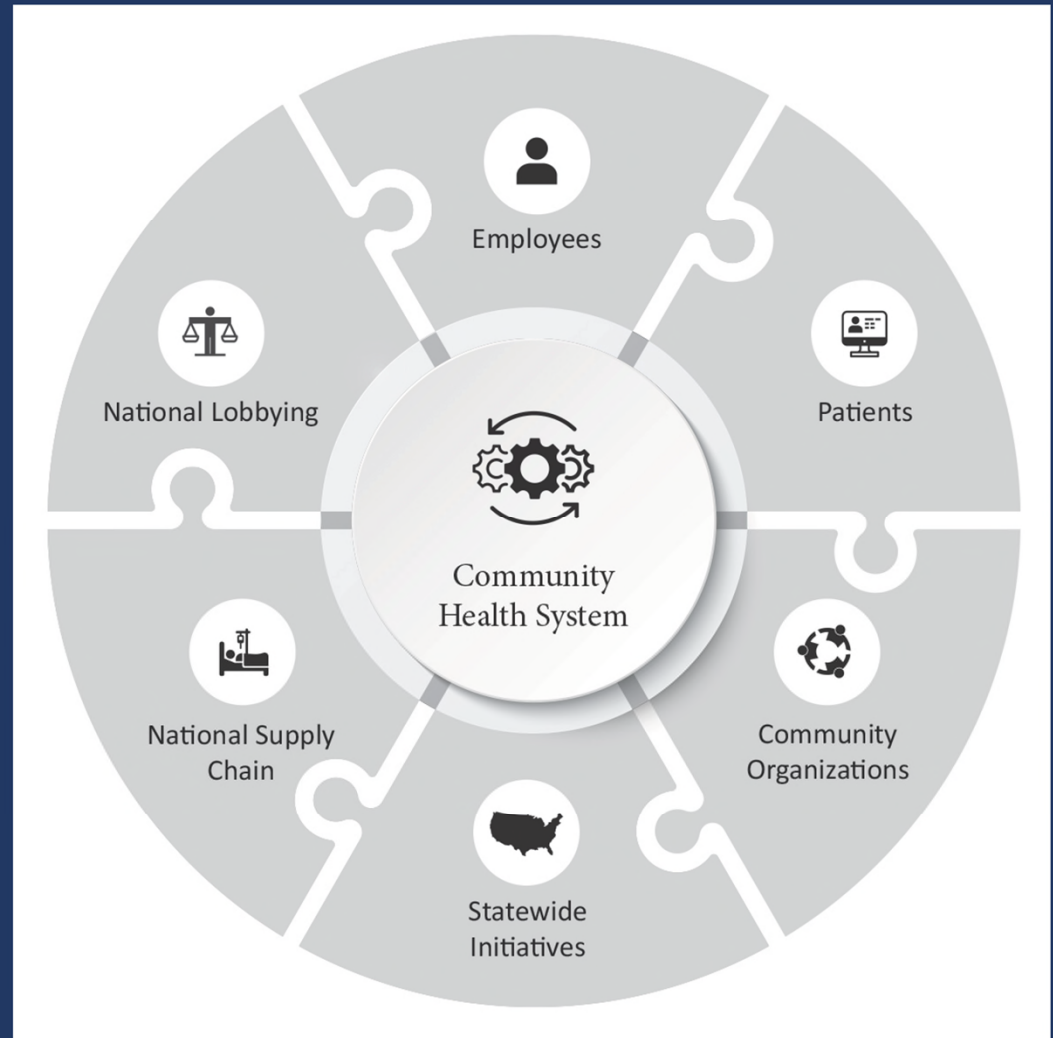


How to Begin Your Carbon Footprint Reduction (Even During COVID)

When it comes to preparing for a warming planet, many health system leaders know they need to act. They understand the health issues created by climate change, the pressures coming from the bond markets, regulators and the medical community, but they also ask “How do we get started during a pandemic? Our staff is overwhelmed.” The answer: prioritize work that can be managed by the executive team and the facilities team – and only engage broader staff next year.



The Health System as Community Leader on Climate Action





Homepage



Neal's Book

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