The Emergence of Virtual EHS Audits

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ABOUT NAEM

The National Association for Environmental, Health & Safety and Sustainability Management (NAEM) empowers corporate leaders to advance environmental stewardship, create safe and healthy workplaces, and promote global sustainability. As the leading business community for EHS&S decision-makers, we provide engaging forums, a curated network, peer benchmarking, research insights and tools for solving today's corporate EHS&S management challenges.

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The global pandemic presented unprecedented challenges to EHS auditing programs. With widespread social distancing requirements and travel restrictions, EHS leaders had to rapidly adapt their programs in order to meet their organizational objectives and effectively manage risk.

Despite the importance of these changes – and the difficulty presented by adapting an auditing program in the middle of a global pandemic, there are relatively few resources available documenting the state of auditing, as well as how to effectively execute an audit in 'The New Normal.'

The Emergence of Virtual EHS Audits fills this gap, showing how EHS auditing programs have adapted to the times by combining insights from an in-depth quantitative survey, interviews and panel discussions focused on virtual auditing.

The research also demonstrates that the majority of EHS auditing programs have been moderately scaled down since COVID-19 began, while rapidly embracing virtual EHS auditing practices.

Interestingly, the findings from this report complicate the idea that virtual EHS audits are replacing in-person audits. Instead, the majority of companies are moving towards a hybrid model – combining the efficiencies of virtual and in-person auditing practices.

In addition to this valuable benchmarking, the report offers a first look at the how leading companies are allocating resources to in-person vs. virtual audits, along with the most prevalent challenges to be aware of in planning and executing virtual audits.

Despite the enormous toll this pandemic has taken, there is some cause for optimism: as we emerge from COVID-19 in the coming months, EHS auditing programs are likely to be more agile and efficient than they were before the pandemic struck. It is my hope that as the EHS profession continues to optimize the balance of in-person and digital technologies used to manage risk, the benefits will be widely felt.

I'm confident that this research will help as you continue to advance your EHS auditing programs.

CAROL SINGER NEUVELT
Executive Director NAEM

This report combines a quantitative benchmarking survey with qualitative insights based on several facilitated panel discussions among EHS leaders.

OBJECTIVE
The objectives of this research are to:

1. **Provide insights into the prevalence of virtual EHS auditing**
2. **Understand when virtual audits are most effective**
3. **Explore virtual auditing's impact on staffing and resources**
4. **Describe common obstacles and challenges of virtual auditing**
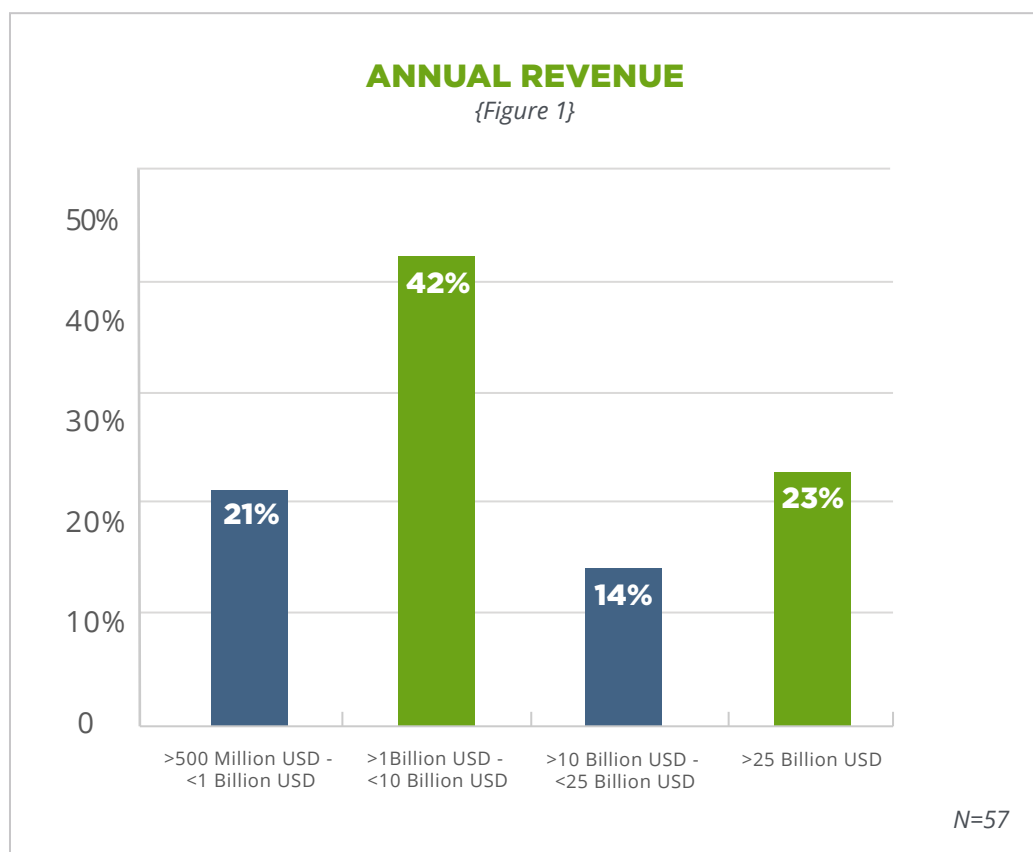
METHODOLOGY
The survey was fielded to EHS leaders in a wide variety of industries from November 2020 through January 2021. There were 57 qualified responses. Only in-house EHS leaders' responses were recorded.

Respondents to the surveys were mostly large (76% over $1 billion in revenue), manufacturers (50% manufacturing), and three-quarters of respondents were from Business to Business (B2B) companies.
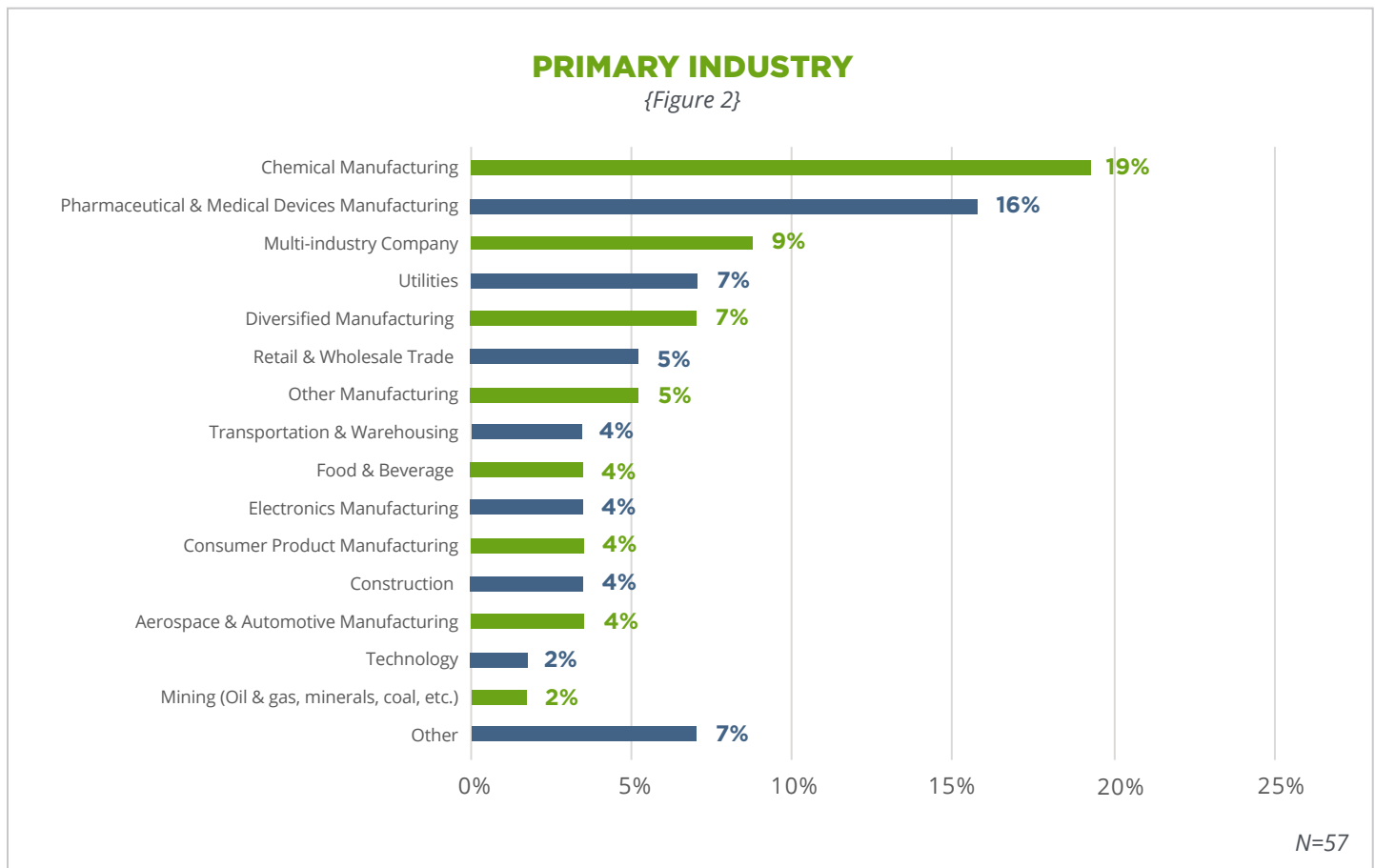
76% of Respondents had over $1 Billion USD in Revenue

ANNUAL REVENUE
{Figure 1}

Revenue Range	Percentage
>500 Million USD - <1 Billion USD	21%
>1Billion USD - <10 Billion USD	42%
>10 Billion USD - <25 Billion USD	14%
>25 Billion USD	23%

N=57

Most Respondents were from Manufacturing

PRIMARY INDUSTRY
{Figure 2}

Industry	Percentage
Chemical Manufacturing	19%
Pharmaceutical & Medical Devices Manufacturing	16%
Multi-industry Company	9%
Utilities	7%
Diversified Manufacturing	7%
Retail & Wholesale Trade	5%
Other Manufacturing	5%
Transportation & Warehousing	4%
Food & Beverage	4%
Electronics Manufacturing	4%
Consumer Product Manufacturing	4%
Construction	4%
Aerospace & Automotive Manufacturing	4%
Technology	2%
Mining (Oil & gas, minerals, coal, etc.)	2%
Other	7%

N=57

Respondents self-identified the level of EHS Risk. For this survey, respondents self-identified as primarily Low and Medium Risk.

DEGREE OF EHS RISK
{Figure 3}

- Low: 61%
- Medium: 37%
- High: 2%

N=57
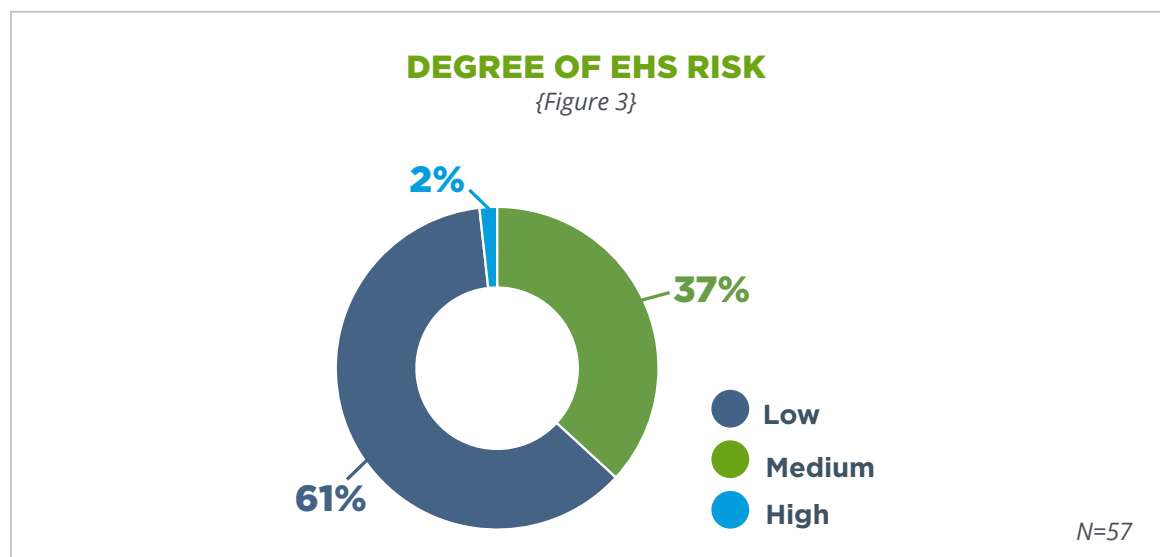
STATE OF AUDITING

The majority of companies are currently piloting or using virtual audits in a limited capacity.
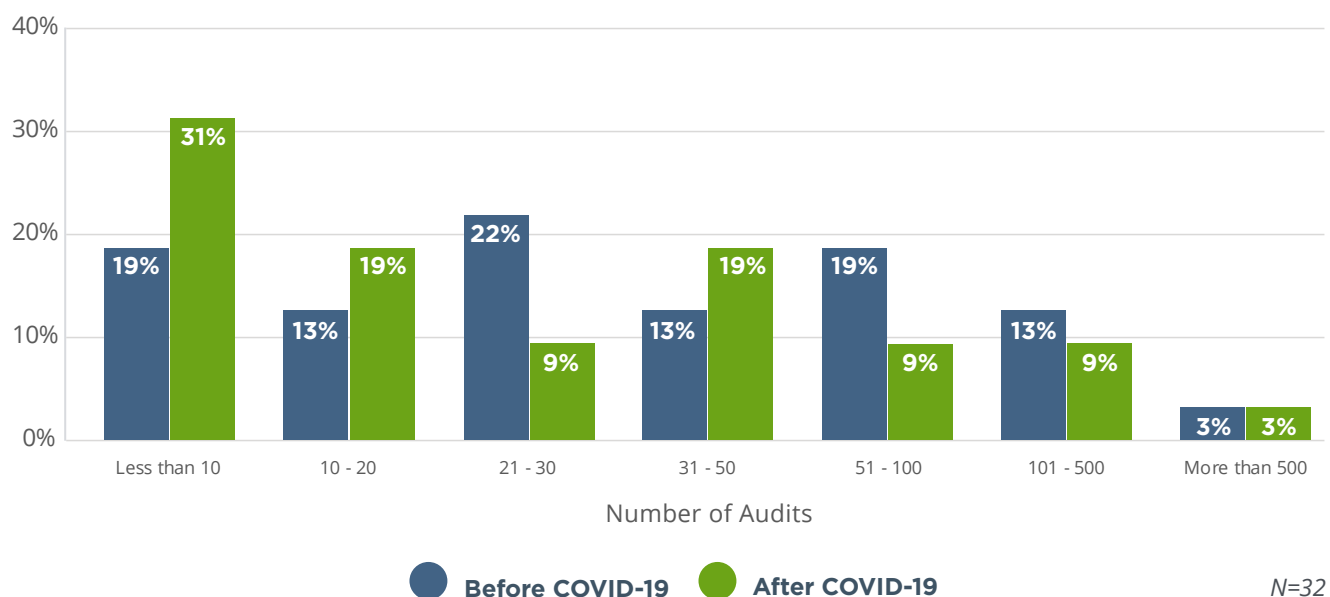
This survey documents a dramatic uptick in the adoption of virtual auditing. At the same time, the survey demonstrates that the impact of COVID-19 resulted in an overall reduction in the number of EHS audits. Two changes have occurred simultaneously; EHS audits have been scaled down on the whole as virtual auditing rapidly emerged. To paint a holistic picture of the state of the practice, this section shows both the overall state of auditing as well as the growth of virtual auditing.

Fewer Audits have been Conducted since COVID-19 Began

Since COVID-19 began, fewer audits have been conducted. On average, companies performed 112 audits prior to COVID-19 and 82 audits after. However, this trend varies widely. In general, companies that were conducting a larger number of audits before COVID-19 tended to decrease the number of audits after COVID-19 hit, while respondents that were conducting relatively fewer audits before the pandemic increased the number of audits performed after the pandemic.

OVERALL EHS AUDITS CONDUCTED BEFORE AND AFTER COVID-19
{Figure 4}

Number of Audits	Before COVID-19	After COVID-19
Less than 10	19%	31%
10 - 20	13%	19%
21 - 30	22%	9%
31 - 50	13%	19%
51 - 100	19%	9%
101 - 500	13%	9%
More than 500	3%	3%

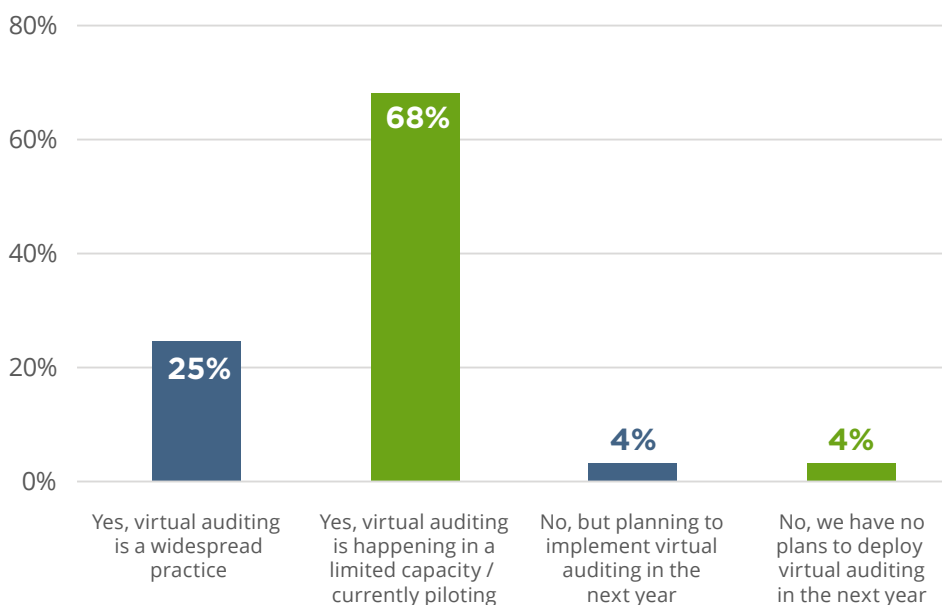● Before COVID-19   ● After COVID-19   *N=32*

All Respondents are Using or Planning to Use Virtual Auditing in the Next Year

Most companies (68%) are currently piloting virtual audits or conducting virtual audits in a limited capacity. For a significant percentage of companies (25%), virtual auditing is already a widespread practice. For a small minority of companies (4%), virtual auditing will be implemented in the next year. It's important to note that all companies are planning to or are already conducting virtual audits.

ADOPTION OF VIRTUAL AUDITING
{Figure 5}

Category	Percentage
Yes, virtual auditing is a widespread practice	25%
Yes, virtual auditing is happening in a limited capacity / currently piloting	68%
No, but planning to implement virtual auditing in the next year	4%
No, we have no plans to deploy virtual auditing in the next year	4%

N=57

Virtual Auditing has Dramatically Increased since the Pandemic Began

Prior to COVID-19, virtual audits were uncommon among respondents; on average, only 10% of all audits performed were conducted virtually. Since COVID-19, 65% of audits have been virtual. In addition, only one-quarter of respondents conducted virtual audits before the pandemic.

## PERCENT OF ALL EHS AUDITS THAT ARE VIRTUAL

{Figure 6}

	Before COVID-19	After COVID-19
	10%	65%
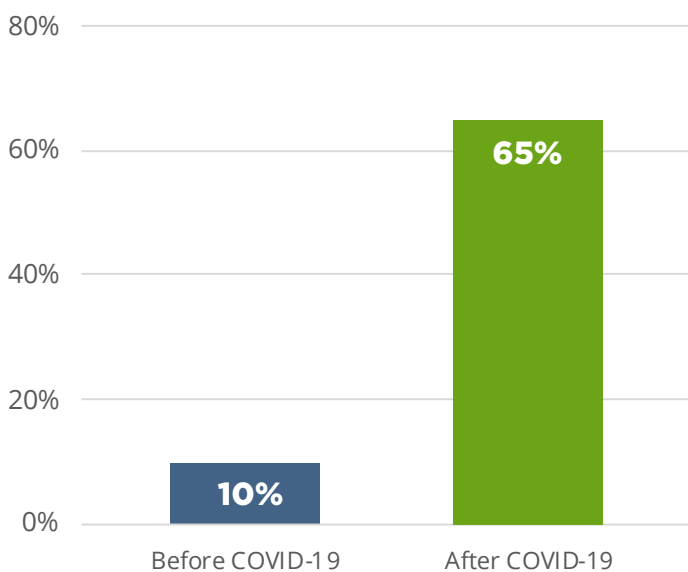
N=47

DEFINING VIRTUAL AUDITING

Virtual audits are clearly more common than before the pandemic, there is wide divergence in how companies are balancing the use of in-person auditing practices with digital technologies. Given that there is no one-size-fits-all approach to virtual auditing — with companies balancing in-person and virtual auditing in a variety of ways — this section demonstrates companies are striking the balance between in-persona and virtual auditing.

The Majority of Virtual Audits Retain In-Person Components

Sixty percent of respondents conducting virtual audits either in a limited capacity or in widespread use have retained components of the traditional in-person audit. This signals that virtual audits are not necessarily replacing in-person audits. Instead, virtual auditing practices are complementing traditional in-person auditing practices. This points towards the prevalence of a hybrid approach to auditing, combining virtual and in-person auditing tools.

VIRTUAL VS. IN-PERSON AUDITING IMPLEMENTATION
{Figure 7}
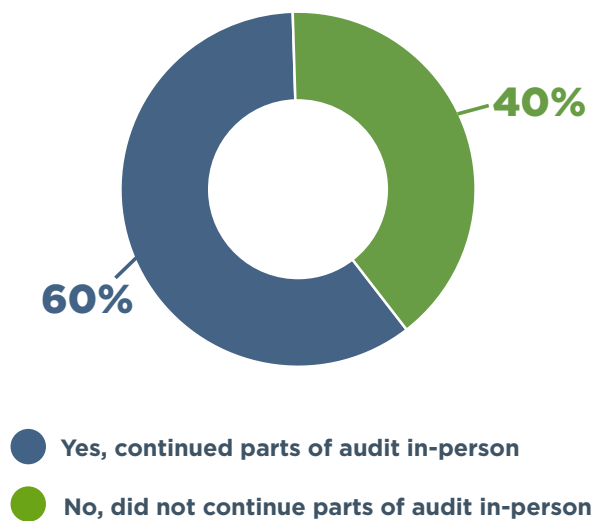
40%

60%

- Yes, continued parts of audit in-person
- No, did not continue parts of audit in-person

N=50

The In-Person Components of Most Audits are Primarily Executed by In-House Staff

54% of survey respondents where virtual auditing is a widespread practice have retained components of in-person audits. This percentage increases to 69% for respondents conducting virtual auditing in a limited capacity or piloting. All respondents that are not yet executing virtual audits said they plan to keep in-person components of their audits in place in the future.

IN-PERSON AUDITING BY STATE OF VIRTUAL AUDITING PROGRAM

{Figure 8}
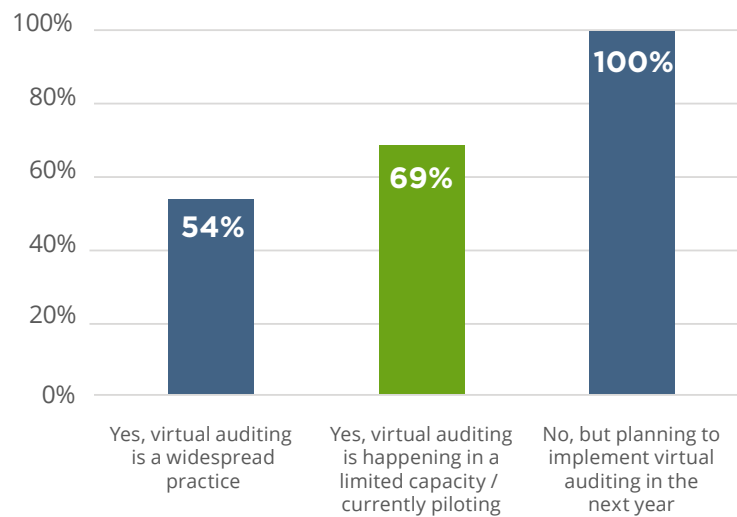

N=30

DEFINING VIRTUAL AUDITING

Physical Inspections is the Most Prevalent In-Person Component of Audits

The most common in-person component of audits is the physical inspection (97%). A minority of respondents are also conducting Employee Interviews, Document Reviews, and Discussion of Findings and Recommendations in-person.

### MOST PREVALENT COMPONENTS OF IN-PERSON AUDITS

{Figure 9}

- Physical Inspections: 97%
- Employee Interviews: 40%
- Document Reviews: 20%
- Discussion of Fndings and Recommendations: 20%
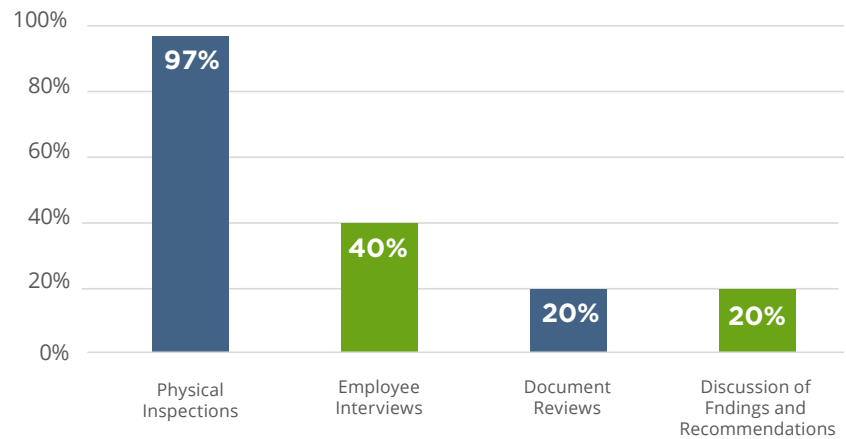
N=30

The In-Person Components of Most Audits are Primarily Executed by Internal Resources

PERSONNEL EXECUTING IN-PERSON AUDITS

{Figure 10}

- 77% Internal resources (FTEs, in-house staff)
- 23% External, third-party resources

N=30
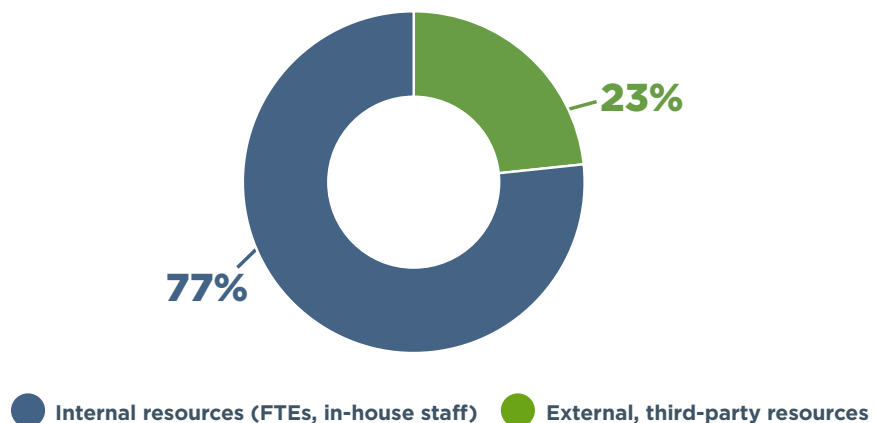
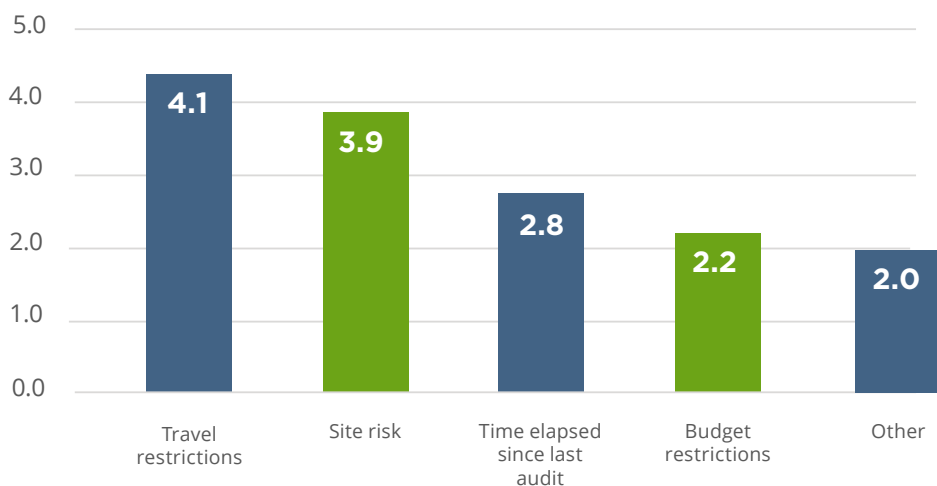**Remote working conditions are fueling innovations in EHS auditing.**

This section explores how virtual audits are being executed in light of changes brought on by the global pandemic, addressing the questions of why virtual audits have been rapidly embraced relative to pre-pandemic levels and how EHS programs are allocating resources to virtual audits vs. in-person audits.

Travel Restrictions and Site Risk are the Most Important Considerations for Implementing Virtual Audits

Travel restrictions and site risk were the most commonly cited drivers for adopting virtual audits. Among respondents who selected "Other," multiple respondents cited the health risks associated with COVID-19 and a lack of availability of auditors.

DRIVERS FOR ADOPTING VIRTUAL AUDITS
{Figure 11}

| Category	Value
Travel restrictions	4.1
Site risk	3.9
Time elapsed since last audit	2.8
Budget restrictions	2.2
Other	2.0

N=48

DRIVERS AND IMPLEMENTATION

Companies are Spending More Time Planning for Virtual Audits

74% of respondents stated that they are spending more time planning for virtual audits than in-person audits. No respondents are spending less time planning for virtual audits relative to in-person audits.

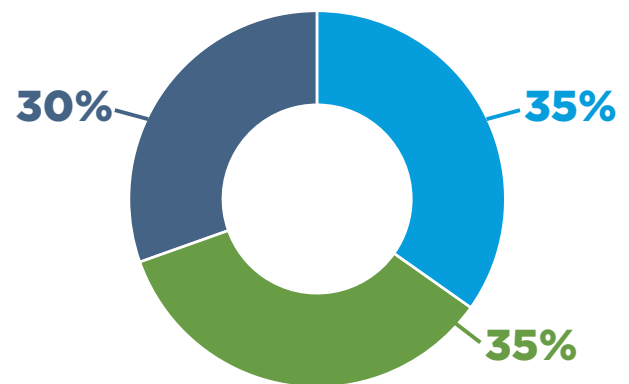**TIME PLANNING VIRTUAL AUDITS**
{Figure 12}
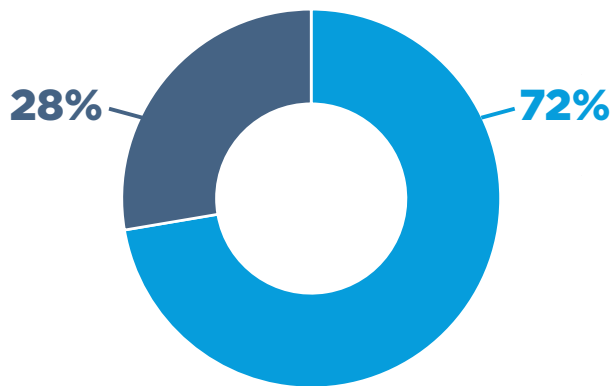
28% 72%

- ● More time for virtual audits
- ● Less time for virtual audits
- ● The same time for virtual audits

N=46

TIME EXECUTING VIRTUAL AUDITS
{Figure 13}

30% 35%

35%

- ● More time for virtual audits
- ● Less time for virtual audits
- ● The same time for virtual audits

N=46

Virtual Audits are Using the Same Amount of FTEs as In-Person Audits

At present, most respondents (67%) are dedicating the same number of FTEs to virtual audits as in-person audits, followed by those who are dedicating less FTEs to virtual auditing. On average, respondents are dedicating three FTEs to virtual audits.

FTEs DEDICATED TO VIRTUAL AUDITS
{Figure 14}

30%

67%

7%

- ● More FTEs for virtual audits
- ● Less FTEs for virtual audits
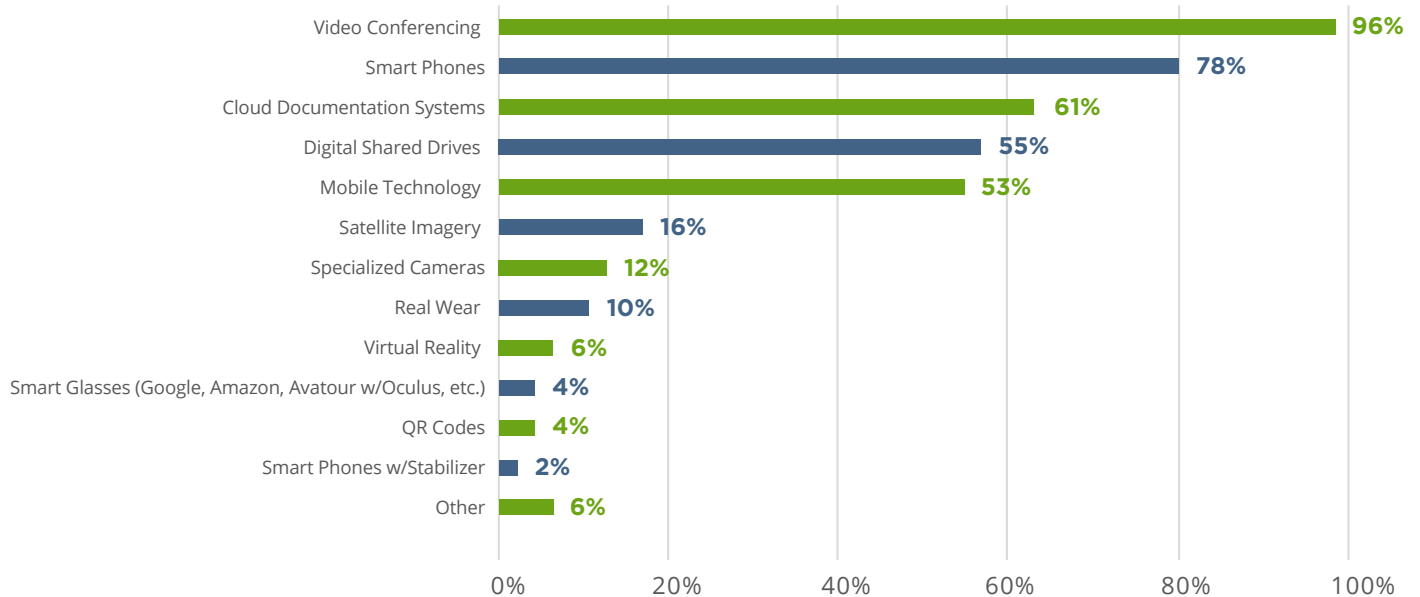- ● Same number of FTEs for virtual audits
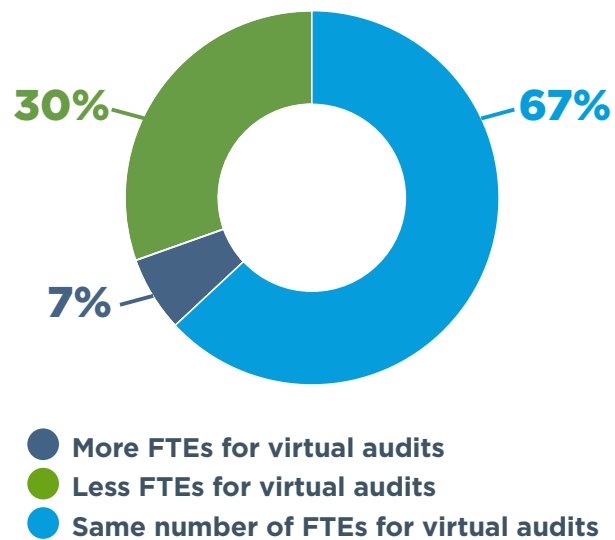
N=46

DRIVERS AND IMPLEMENTATION

Widely Available Technologies are Being Deployed to Execute Virtual Audits

Most respondents are using Video Conferencing, Smart Phones, Cloud Documentation Systems, Digital Shared Drives and Mobile Technology. A smaller minority of companies are using a broad array of technologies that help replicate the sensory inputs of an in-person audit, such as Smart Glasses, Virtual Reality and Smart Phones with Stabilizers.

TECHNOLOGIES DEPLOYED IN VIRTUAL AUDITS
{Figure 15}

| Technology	Percentage
Video Conferencing	96%
Smart Phones	78%
Cloud Documentation Systems	61%
Digital Shared Drives	55%
Mobile Technology	53%
Satellite Imagery	16%
Specialized Cameras	12%
Real Wear	10%
Virtual Reality	6%
Smart Glasses (Google, Amazon, Avatour w/Oculus, etc.)	4%
QR Codes	4%
Smart Phones w/Stabilizer	2%
Other	6%

N=49

Most Respondents are Using Protocols for Virtual Audits

The vast majority of respondents are using protocols to conduct virtual audits. Additionally, companies are creating internal protocols to address the procedures and processes specific to virtual auditing. One panelist described how "In the future, we are going to be able to set up checklists or different audits that the sites can audit themselves with the understanding that we use their findings as a guide when we come down to the audit. This allows for more discussion and competency."

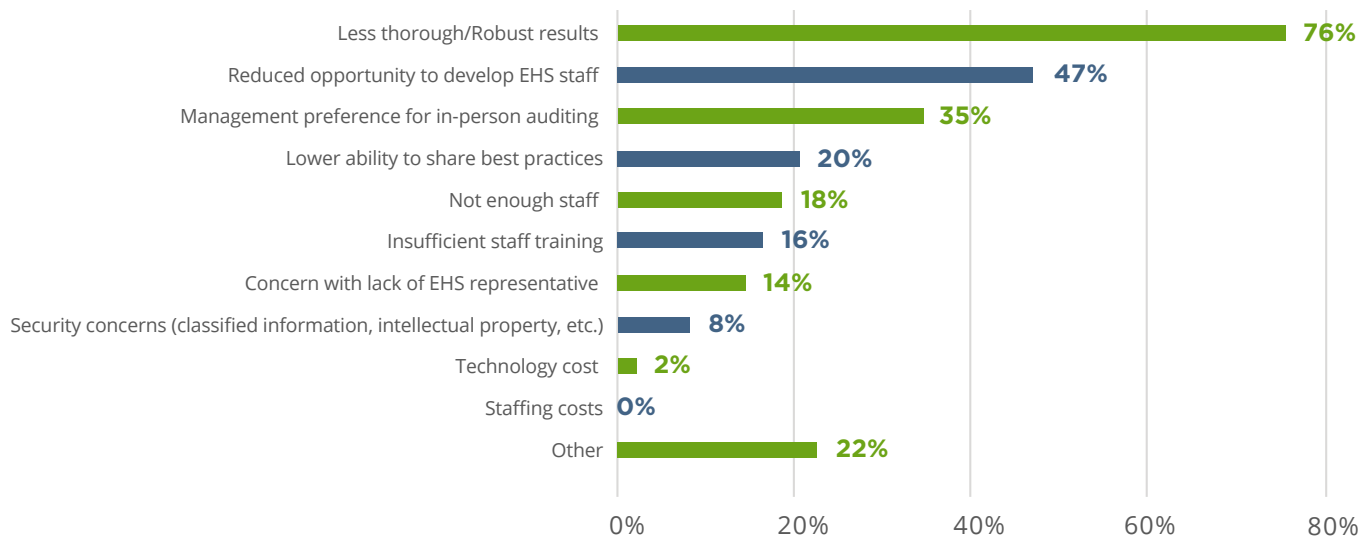### PREVALENCE OF PROTOCOLS IN VIRTUAL AUDITING
{Figure 16}

4%

6%

90%

● Yes ● No ● To be determined

N=49
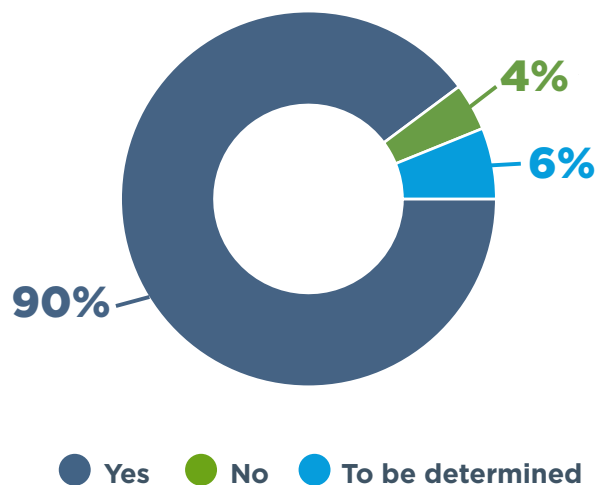
EHS Leaders are Concerned that Virtual Auditing Yields Less Thorough Results

Concern over the quality of results was by far the greatest impediment to starting a virtual auditing program. More than three-quarters of respondents felt that "Less Thorough/Robust Results" was the biggest obstacle to starting a virtual auditing program.

MAIN OBSTACLES TO STARTING A VIRTUAL AUDITING PROGRAM

{Figure 17}

Obstacle	Percentage
Less thorough/Robust results	76%
Reduced opportunity to develop EHS staff	47%
Management preference for in-person auditing	35%
Lower ability to share best practices	20%
Not enough staff	18%
Insufficient staff training	16%
Concern with lack of EHS representative	14%
Security concerns (classified information, intellectual property, etc.)	8%
Technology cost	2%
Staffing costs	0%
Other	22%

N=49

Exploring the Challenge of Getting Quality Virtual Audit Results

Numerous EHS leaders expressed concern over the quality of results from virtual audits in discussion panels, pointing to the difficulty of truly getting a feel for a site's risks without being physically present.

An EHS leader explained one reason for the difficulty assessing sites virtually, stating "Observations of facility conditions are limited to what those at the facility allow the auditor to see." Additionally, there are clear limitations to technology and connectivity more broadly in various sites: "some areas of the facility may be overlooked due to limitation of devices used or due to restriction of electronic equipment in some areas."

Also mentioned as a challenge when the auditor is not physically present is that it is far more difficult to assess a facility independent of the perspective and perception of the on-site auditor. An EHS leader summed up the challenge, saying that during a virtual audit, "auditors decisions and assessments may be based on some assumptions rather than all available facts."

The quality of results was naturally a more serious concern in higher risk facilities, where panel discussions indicated that 100% virtual auditing is less common.

An additional concern among EHS leaders was the difficulty in training EHS staff during virtual audits. During in-person audits, there are opportunities for informal mentoring and coaching that are hard to replicate in a remote environment. One EHS leader put it in clear terms, "there just aren't as good of opportunities for coaching in a virtual setting."
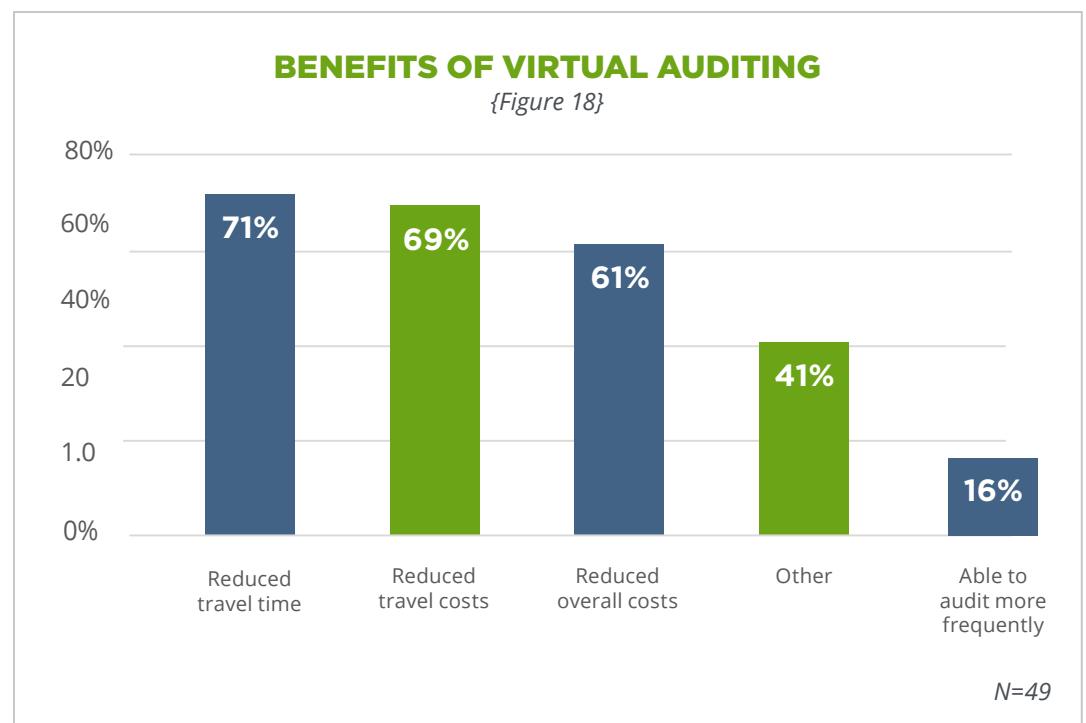
OBSTACLES AND BENEFITS

Reduced Travel Time and Reduced Travel Costs are the Top Benefits of Virtual Auditing

According to survey respondents, the primary benefits of virtual auditing are reduced travel time and costs. Less than one-quarter of respondents felt that the ability to audit more frequently was a benefit of virtual auditing.

BENEFITS OF VIRTUAL AUDITING
{Figure 18}

Category	Percentage
Reduced travel time	71%
Reduced travel costs	69%
Reduced overall costs	61%
Other	41%
Able to audit more frequently	16%

N=49

Virtual Audits are Delivering New Forms of Efficiency

From survey responses, it is clear that virtual auditing has immediate, tangible benefits like reduced travel time and costs. But the feeling conveyed by many EHS leaders is that these increases in efficiency open up the possibility to rethink the auditing process more broadly.

Efficiency is another key benefit to virtual auditing. As one EHS leader put it, "There are some efficiencies we have found that we think are fabulous and that we need to continue to go forward with."

Another respondent suggested, "we are no longer wasting four days on-site, with a team of six to find documents."

Final Thoughts

Virtual EHS auditing allows EHS leaders to change how auditing is conducted in the long-term. One panelist put it like this, "COVID has created a lot of opportunities to rethink how we approach audits and use efficient ideas."

COVID-19's impact on EHS as a profession will inevitably be far-reaching. Along with the meeting the challenges of responding and operating in a pandemic environment, there are opportunities that have been ushered in by COVID-19, albeit more quickly than many wanted or anticipated. This certainly is the applicable to the practice of EHS auditing.

With innovations in technologies and collaborative virtual workplaces, EHS leaders have seen higher efficiency in auditing practices and see a bright future using these methods. It will be exciting to see this virtual approach matures, and how the process will help EHS leaders and their teams conduct audits in a post COVID-19 world.

ACKNOWLEDGEMENTS

ADDITIONAL NAEM REPORTS

How COVID-19 is Impacting the EHS Function: The First Industry Benchmark

Wondering how other companies have reacted to COVID-19 and how it has impacted their EHS operations? NAEM recently conducted the first industry benchmark on how companies managed the initial response to the global pandemic. Download the free report for a full analysis of how EHS functions have been affected by COVID-19.

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Download the report today at: naem.org/what-we-offer/research
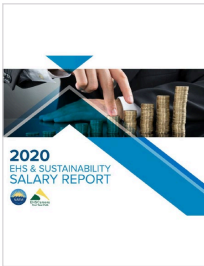
2020 EHS & Sustainability Salary Report

How much do EHS & Sustainability employees earn and what are the variables that affect that compensation? In partnership with EHSCareers, NAEM presents results from the 2020 EHS&S Salary Survey, featuring detailed analyses of how compensation is affected by education, certifications, career stage and industry.

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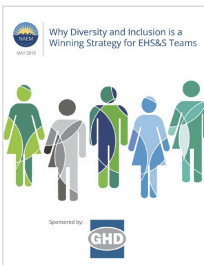
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Diversity and inclusion strategies are the best way to build high-performance teams, improve employee retention and prepare the EHS&S function for a wave of leadership succession. This report offers specific examples and advice from companies that have built world-class diversity and inclusion programs to strengthen your EHS&S management practices.

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