

Bandage or surgery? What does it take to build a resilient public health agency?



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Reimagining public health: the way to an equitable future

The future comes around fast. Whether COVID-19 becomes easier to manage or new strains of the virus extend the crisis for years to come, public health leaders should ask now how they will meet the unknown challenges of tomorrow.

To understand where and how agencies should direct their efforts, we surveyed 301 public health officials from across the United States. Our research finds organizations operating at a uniquely difficult yet exciting time, in a field that is being reshaped and revitalized by digital innovation.

More than two years after the pandemic began, 56% of respondents believe that modernization is essential if they are to achieve their vision of equitable health. At the same time, 52% say that advances in data and digital technology make them more optimistic about what they can achieve for their communities than at any point in their career.

But the rate of digital transformation is uneven, and officials are facing significant barriers to change. They must cope with budget constraints, inspire a new generation of talent and encourage reluctant colleagues to embrace innovation. It is a complicated journey, but the time to begin is now.



Legacies of the crisis

Throughout the pandemic, both before vaccines were developed and during their deployment and administration, the efforts of individuals and organizations in public health have saved many lives. But tackling the biggest health challenge in a generation did not leave public health organizations unscathed.

Political fallout creates a distraction

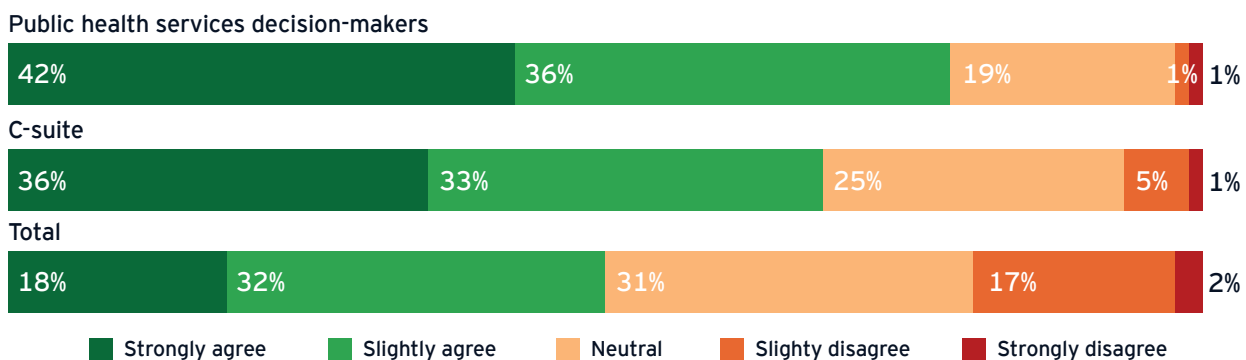
Public health’s response to the pandemic went further than the healthy-lifestyle campaigns and childhood vaccination drives of traditional interventions. It extended to legal restrictions and penalties to control public behavior. The political implications of such measures – measures that affected how Americans lived, behaved and assessed risk – led to a partisan public response.

Today, half of the respondents to our survey believe that public health needs to work hard to re-establish a neutral political role. Only 19% disagree. This feeling is most apparent among those who lead public health organizations: 68% of the most senior respondents agree, and, among those involved in public health services decision-making, it rises to 78%.

Our findings are consistent with other research into the impact of COVID-19, in which more than half of Americans express concern that medical science is being used to support a political agenda.¹ Such attitudes undermine public health’s ability to deliver on its mission. A recent *Lancet* article, for example, found that worldwide trust in government institutions correlated with vaccine uptake.²

Figure 1. Public health decision-makers believe that the sector now needs to work hard to be seen as politically neutral

To what extent do you agree that political disputes around COVID-19 mean that public health needs to work hard to re-establish a neutral political role?



¹ Edelman, *Edelman Trust Barometer 2022 Special Report: Trust and Health*, 2022. https://www.edelman.com/sites/g/files/aatuss191/files/2022-03/2022%20Trust%20Barometer%20Special%20Report%20Trust%20and%20Health_Mar10.pdf.

² CovidCOVID-19 National Preparedness Collaborators, “Pandemic preparedness and COVID-19: an exploratory analysis of infection and fatality rates, and contextual factors associated with preparedness in 177 countries, from Jan 1, 2020, to Sept 30, 2021,” *The Lancet*, February 2022. [www.thelancet.com/journals/lancet/article/PIIS0140-6736\(22\)00172-6/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(22)00172-6/fulltext).

Long-term issues are flaring up

As well as creating partisan disputes, the pandemic showed that senior teams need to address pre-existing, deep-seated operational challenges – some of which may have been deprioritized during the peak of the crisis.

More than half (56%) of respondents believe that the pandemic revealed weaknesses in the infrastructure of public health and helped them understand how to improve for the future. Again, leadership teams are the most outspoken here: 77% of those in the C-suite and 85% of decision-makers agree.

Which weaknesses do they have in mind? One is the inability of public health organizations to prove how their activities create positive outcomes for constituents: 50% agree that public health is weak at demonstrating the cost-effectiveness of interventions. Among decision-makers, this rises to 75%.

But demonstrating return on investment is just one of the changes that respondents say are necessary for the future:

56% say that they need to modernize their approach.

57% admit that they must urgently expand their skills profile.

55% acknowledge the need to overcome cultural barriers to secure the benefits of cooperation with the private sector.

Positive change in these areas would be mutually re-enforcing. Modernizing approaches to public health and expanding the skills base could make it easier to demonstrate the benefits of specific interventions. This would also make it easier to win broad support for their implementation among harder-to-reach demographics.

Figure 2. Public health teams face multiple challenges

To what extent do you agree or disagree with these statements?

A silver lining of COVID-19 was that it showed us the weakness in our operating model and helped us understand how to improve our organization for the future.



Public health remains weak at demonstrating the cost-effectiveness of interventions.



We are making progress toward equitable health but will need to modernize our approach before we can achieve our goals.



We urgently need to expand the public health skills profile beyond its traditional scope.



Public health organizations need to overcome cultural barriers to secure the program and policy-making benefits of cooperation with the private sector.



■ Strongly agree
 ■ Slightly agree
 ■ Neutral
 ■ Slightly disagree
 ■ Strongly disagree



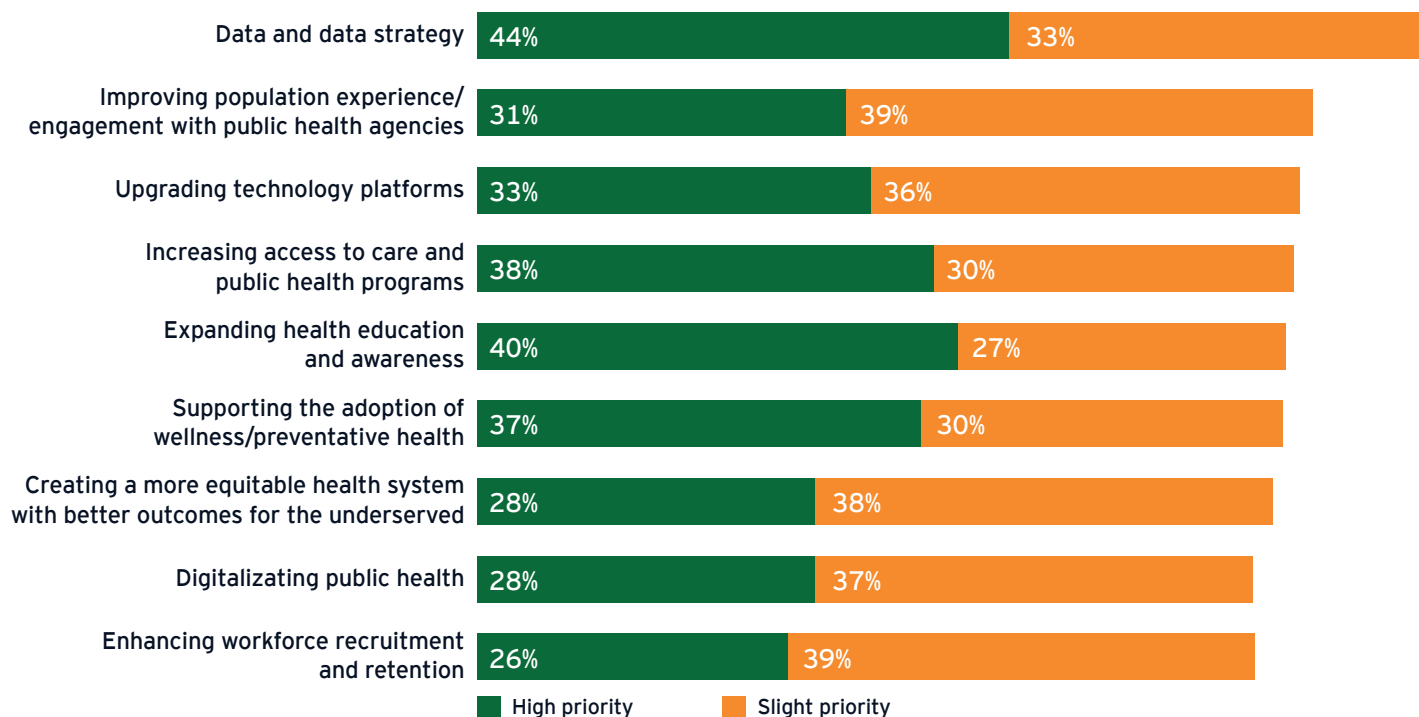
Digital technology reinvigorates public health

In the coming years, respondents will focus on increasing access to public health programs, health education and awareness, the adoption of healthier behaviors and the delivery of better outcomes for underserved populations. More striking, however, is their emphasis on initiatives that relate to data and digital transformation.

First on our respondents' list of priorities, cited by 77%, is data and data strategy, while upgrading technology platforms is in third place (69%). There is a pattern here: 52% of respondents tell us that advances in data and digital technology make them more optimistic now about what they can achieve in public health than at any other point in their career. This is more than three times the proportion who disagree.

Figure 3. Data strategy is the top priority for public health teams

To what extent are these a priority for the next three years?



Digital brings efficiency, precision and trust

Respondents to our survey are hopeful that technology will help them address their existing and emerging weaknesses.

Part of this is about efficiency and enhancing processes. About two-thirds say they are making digitalization a priority (65%) and are satisfied with the progress they have made in automating routine processes (66%).

Digital technology can also help public health organizations become more precise. Muin Khoury, Founding Director of the CDC’s Office of Genomics and Precision Public Health, explains that data and analytics can “contribute to precision public health by improving public health surveillance and assessment, and efforts to promote uptake of evidence-based interventions, by including more extensive information related to place, person and time.”³

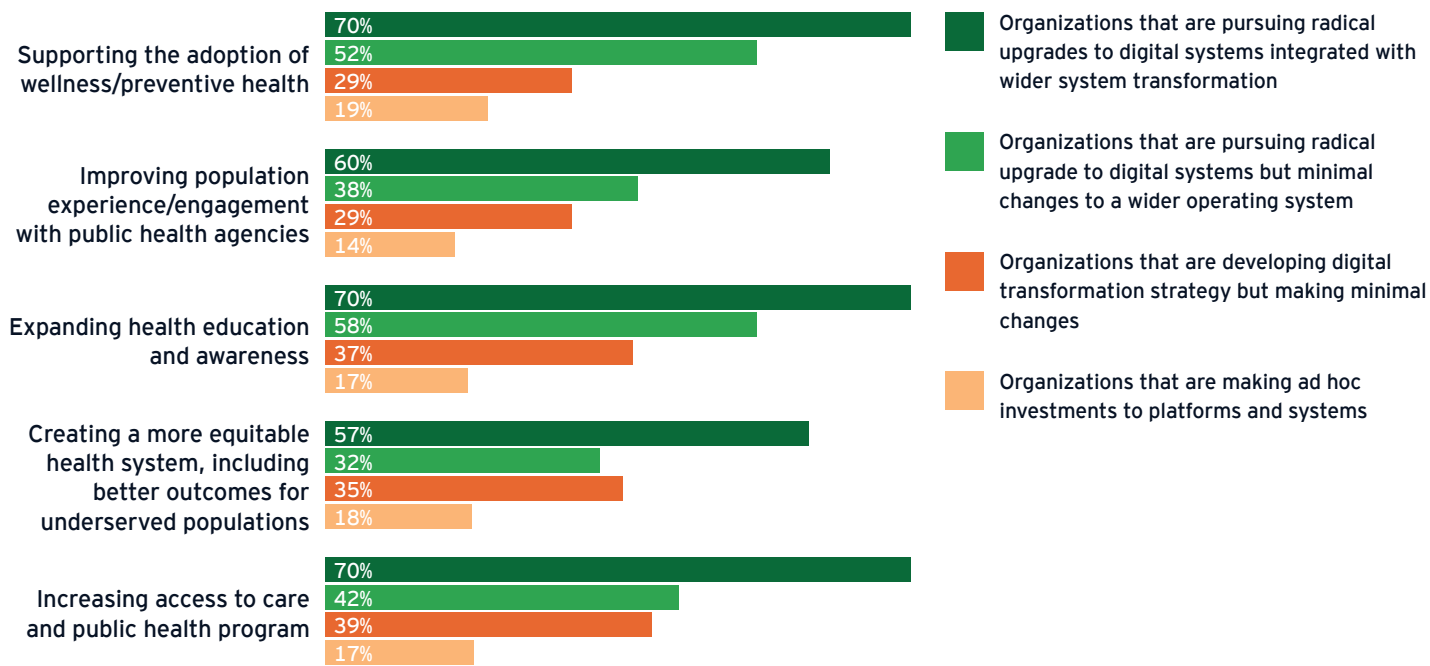
Respondents are striving to get hold of the information they need to carry out this kind of analysis: 70% are somewhat or very satisfied with improved data-sharing with external organizations in the past year, and 64% say they are getting better at obtaining population-wide surveillance data.

Analyzing this data will give them evidence to show which interventions work. This will enable officials to focus on the most cost-effective activities and understand where these are needed most urgently – leading to broader improvements in operations. At the same time, data will be crucial in reassuring communities about the need for specific interventions.

One indication of the advantages afforded by digital transformation, and the advanced analytics it enables, is our finding that the organizations pursuing the most radical transformation are also the ones that are driving the most improvement in other core areas of public health. Seven in 10 of this group, on average, are putting a high priority on preventative health, health education and increasing access, which compares with an average of 18% among those pursuing ad hoc transformation plans.

Figure 4. The organizations that are pursuing radical digital transformation are most likely to be prioritizing ambitious public health objectives

To what extent are the following a high priority over the following three years?



³ Muin J. Khoury et al., “Beyond Public Health Genomics: Can Big Data and Predictive Analytics Deliver Precision Public Health?”, *Public Health Genomics*, 2018. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6687519/pdf/nihms-1037814.pdf>.



The stumbling blocks of organizational change

So, public health leaders know that digital-enabled reform is crucial. But most are still tinkering at the edges of transformation rather than embracing radical change.

Just 39% would describe their transformation plans as strategic rather than tactical, and only 34% say they are extensive rather than limited.

When it comes to implementing new technology, just one in three (34%) is pursuing root-and-branch upgrades of their IT systems, and a mere 10% are integrating this activity into a transformation of their wider systems.

Why is the change so limited?

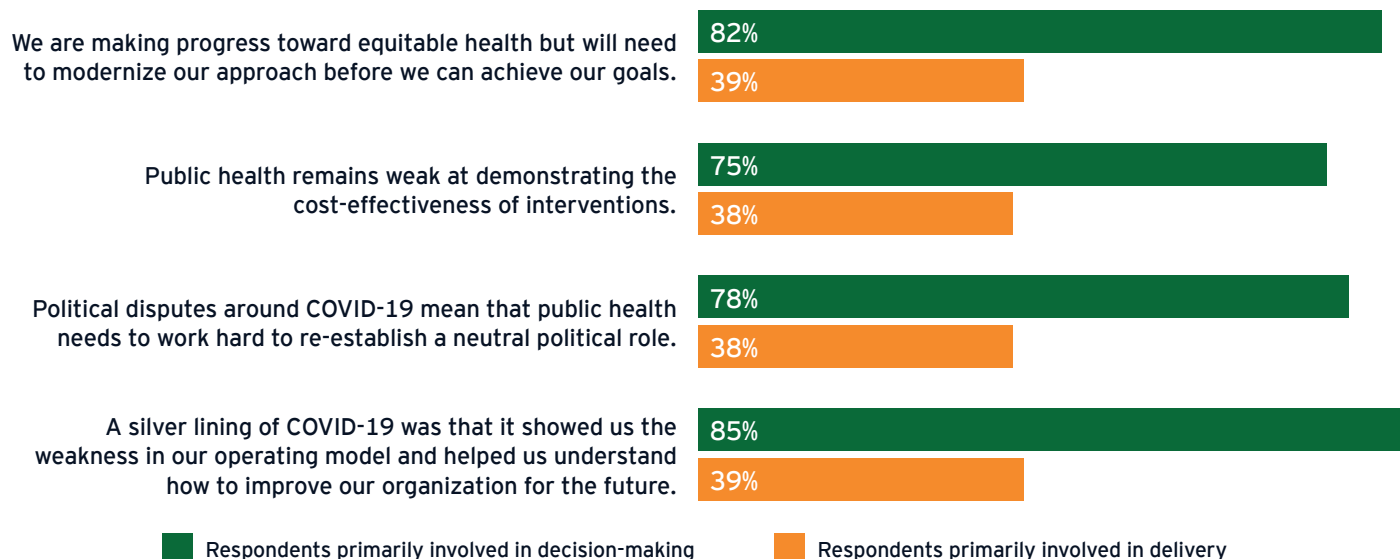
1. There is a gulf in perception between senior and operational teams.

As we have seen, decision-makers in public health acknowledge that COVID-19 has revealed weaknesses within their organizations and undermined their reputation for political neutrality. They agree that public health needs to get better at proving the value of its interventions.

But these attitudes are less prevalent among operational teams in public health delivery: just 39% of these employees say that their organization needs to modernize, compared with 82% of the most senior leaders among our sample (see Figure 5).

Figure 5. Decision-makers are the most likely to say there is a need for improvement

Proportions that agree with the following statements



If we shift from respondents' perception of the problem to their understanding of the technologies that enable change, we find another gap. Overall, executives at the operational level are far less optimistic than decision-makers about the potential for digital technology, automation and innovation sourced from the private sector (see Figure 6).

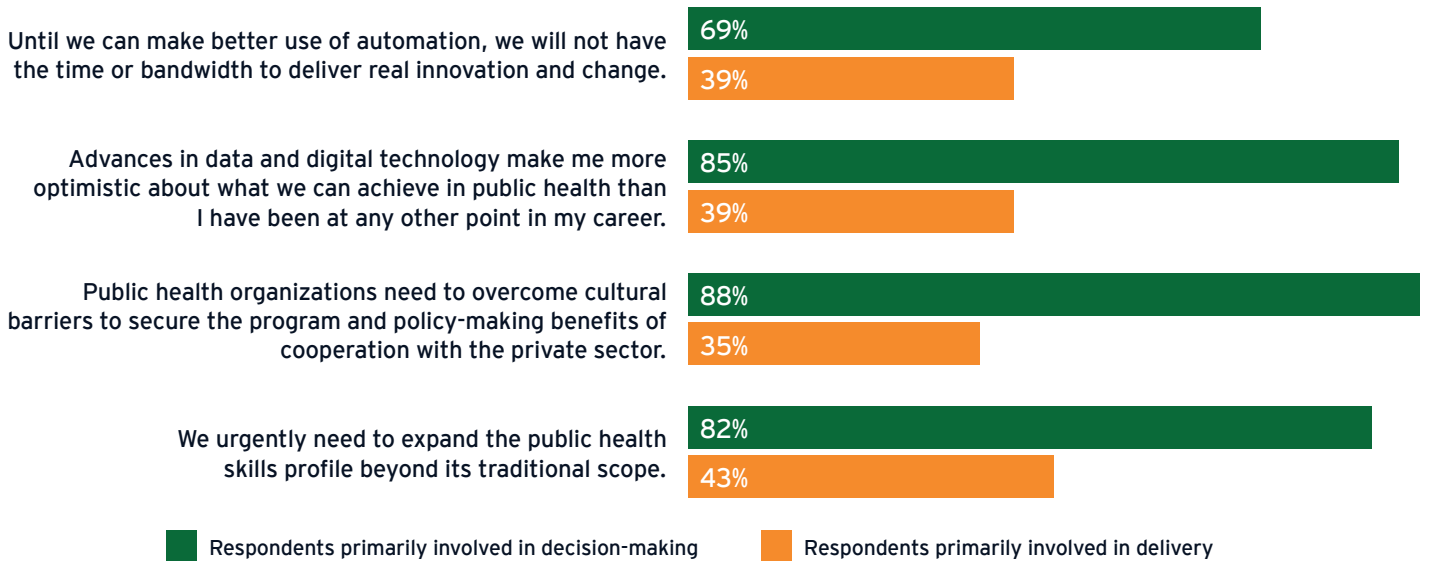
One reason for these differences could be that operational executives are more preoccupied with tackling new and fast-

evolving demands in the wake of the pandemic. Understandably, they may not be looking at the deeper structural challenges of public health or considering the longer-term benefits of technology innovation.

But until widespread agreement is reached about the need for transformation and what will achieve it, implementation is likely to happen slowly.

Figure 6. Operational teams are less optimistic about the promise of digital technology

Proportions that agree with the following statements



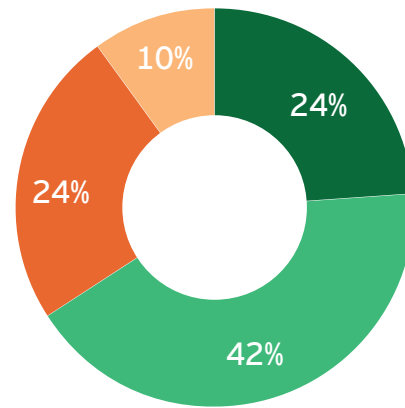
2. Constrained budgets make it hard to stand still – let alone race ahead.

Transformation needs resources, and public health funding is often in short supply. Just 35% of respondents say that their organization has the budget to expand on its existing activities. A similar proportion (33%) do not even have enough to maintain these. The rest are treading water.

The funding shortfall not only restricts what organizations can achieve day to day, but it also leaves little room for contingency. Just half of respondents believe they could get the money they needed to manage another crisis of the magnitude of COVID-19. For nearly one in five (19%), the money simply would not be there.

Figure 7. Public health budgets are holding back progress

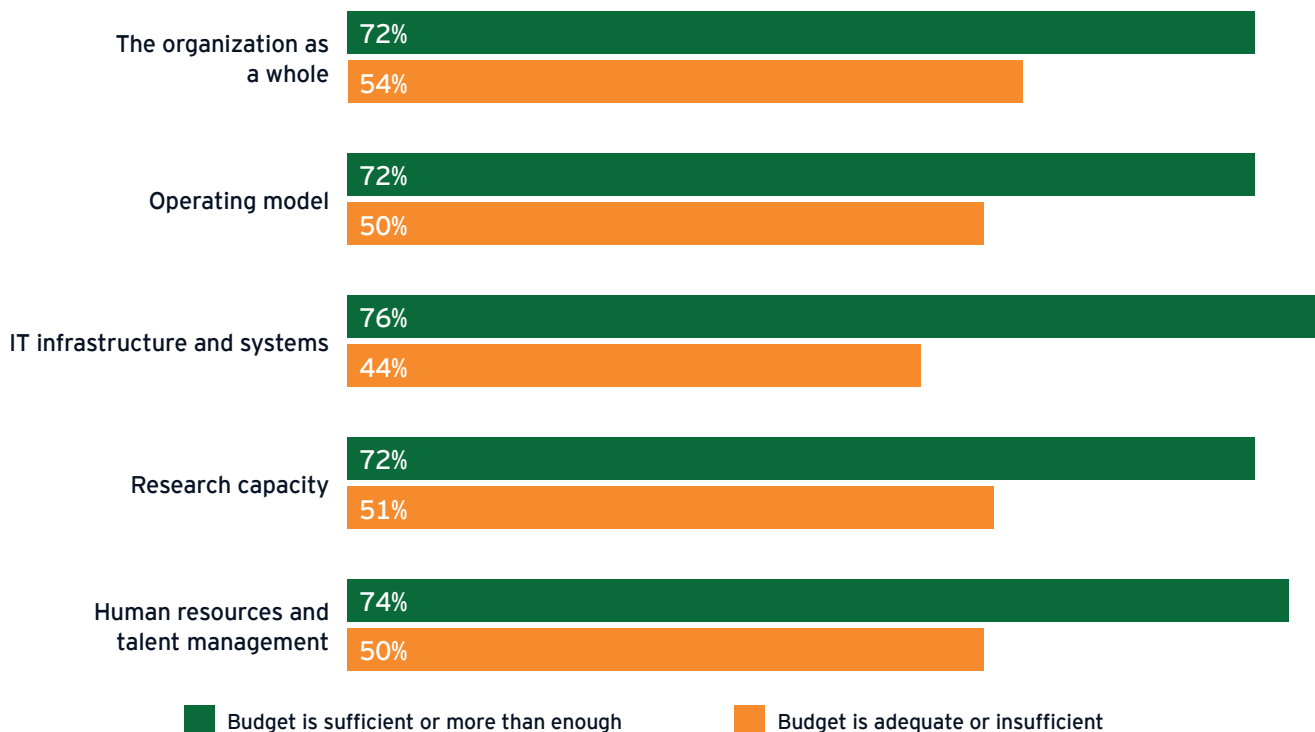
Which of these statements best describes your organization's approach to digital transformation?



- We are making ad hoc investments and enhancements to systems and platforms.
- We have developed or are developing a digital transformation strategy but are currently making only minimal changes.
- We are pursuing a radical, root-and-branch upgrade of our digital systems but with minimal changes to our wider operating systems.
- We are pursuing a radical, root-and-branch upgrade of our digital systems, which is integrated with a transformation of operating systems.

Figure 8. Organizations that lack budget also lack confidence in their ability to respond to crises

Faced with another COVID-19-scale crisis, how confident would you be in your organization's ability to respond?



3. Top talent is hard to find (and even harder to keep).

Our research paints a mixed picture of the evolving talent environment. One in three respondents say that they are very satisfied with the progress they have made over the past year in recruiting new skills and talent, while 35% are somewhat satisfied.

But public health organizations do have problems retaining the talent they need: 56% say that, in the past two years, they have seen increased attrition among employees with the most valuable skills. Only 14% disagree.

The most elusive skills are community engagement and public health communication and promotion (see Figure 9). These are the capabilities that will be essential for rebuilding and strengthening relationships with the public – especially people in traditionally underserved populations that were difficult to reach even before the pandemic.

Additionally, respondents say that they are struggling to find the right data and analytics talent: 53% are finding it harder to secure the talent they need to implement their technology and data plans. This is a problem that is likely to get worse. As traditional IT companies expand and other sectors digitalize, public health will have to compete to attract skills.

Figure 9. So-called soft skills are in short supply

Which of these skills is your organization finding most difficult to recruit?





Three steps to innovation: How to get ahead

Public health organizations face challenges in the post-pandemic era that digital technology can help resolve if the barriers to implementation are removed. This will take three steps:

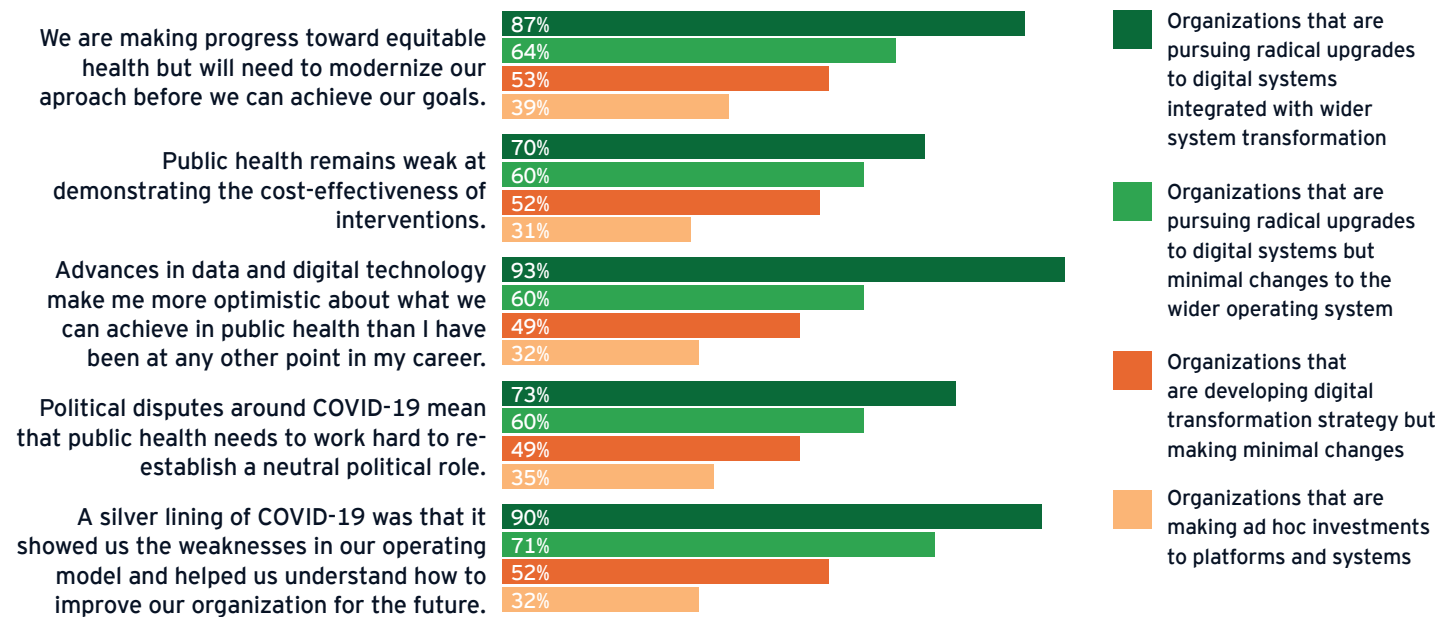
1. Clarify and inspire from the top down.

Until operational-level teams are on board with the need for large-scale transformation, public health organizations will make only tentative progress.

The respondents who believe most strongly in the need for digital technology are also more likely to have successfully delivered transformation. More than 9 in 10 (93%) of the organizations pursuing radical upgrades are optimistic about digital technology, compared with 32% of the organizations making small, ad hoc changes.

Figure 10. The disconnect in optimism about what digital technology can achieve

Proportions that agree with the following statements





One way to bring doubters on board is to stress that making digital transformation a large-scale ambition and meeting pressing day-to-day public health objectives are not mutually exclusive. After all, those who are hostile to precision public health as a movement tend to see it as a distraction from what they think should be the core goals of the organization.⁴

Our findings suggest that the opposite is true. So, digital transformation needs to be presented as a way to meet public health’s most challenging and essential goals – and it is strong leadership that will get that message across.

2. Don’t wait for funding.

Any activity benefits from financial commitment and extensive resources, but our research suggests that limited funds do not have to be a dealbreaker that restricts progress.

We came to this conclusion after segmenting our survey population into four groups that were defined by each respondent’s commitment to transformation combined with the budget at their disposal.

Looking at how these organizations ranked their preparation to manage a future crisis, those that are transforming and have substantial funds are the most confident respondents. That is not surprising.

What is surprising is that respondents that have limited budgets but are doing what they can to embrace digital technology – perhaps by adopting lower-cost solutions or taking pains to make the most of available data – are also more prepared for another challenge at the scale of COVID-19.

Figure 11. Four groups with different budgets and digitalization plans

Group description	State of budget	Degree of current digital transformation	Proportion of total sample
1. Transforming, extra funds	Enough/more than enough to expand on current activities	Pursuing a radical, root-and-branch transformation	20% 61 respondents
2. Not transforming, extra funds	Enough/more than enough to expand on current activities	Making only minimal or ad hoc changes to digital technology	14% 43 respondents
3. Transforming, limited funds	Slightly/significantly less than needed to maintain current activities	Pursuing a radical, root-and-branch transformation	14% 42 respondents
4. Not transforming, limited funds	Slightly/significantly less than needed to maintain current activities	Making only minimal or ad hoc changes to digital technology	51% 155 respondents

⁴ See: David Taylor-Robinson and Frank Kee, “Precision public health – the Emperor’s new clothes,” *International Journal of Epidemiology*, 2019. <https://academic.oup.com/ije/article/48/1/1/5096004>; Merlin Chowkwanyun, “‘Precision’ Public Health – Between Novelty and Hype,” *The New England Journal of Medicine*, 2018. <https://www.nejm.org/doi/full/10.1056/NEJMp1806634>.

This suggests that public health leaders without large budgets should strive to embed a mindset that pushes for digital transformation. Once the benefits of this initial work materialize, it will be easier to make the case for greater funding.

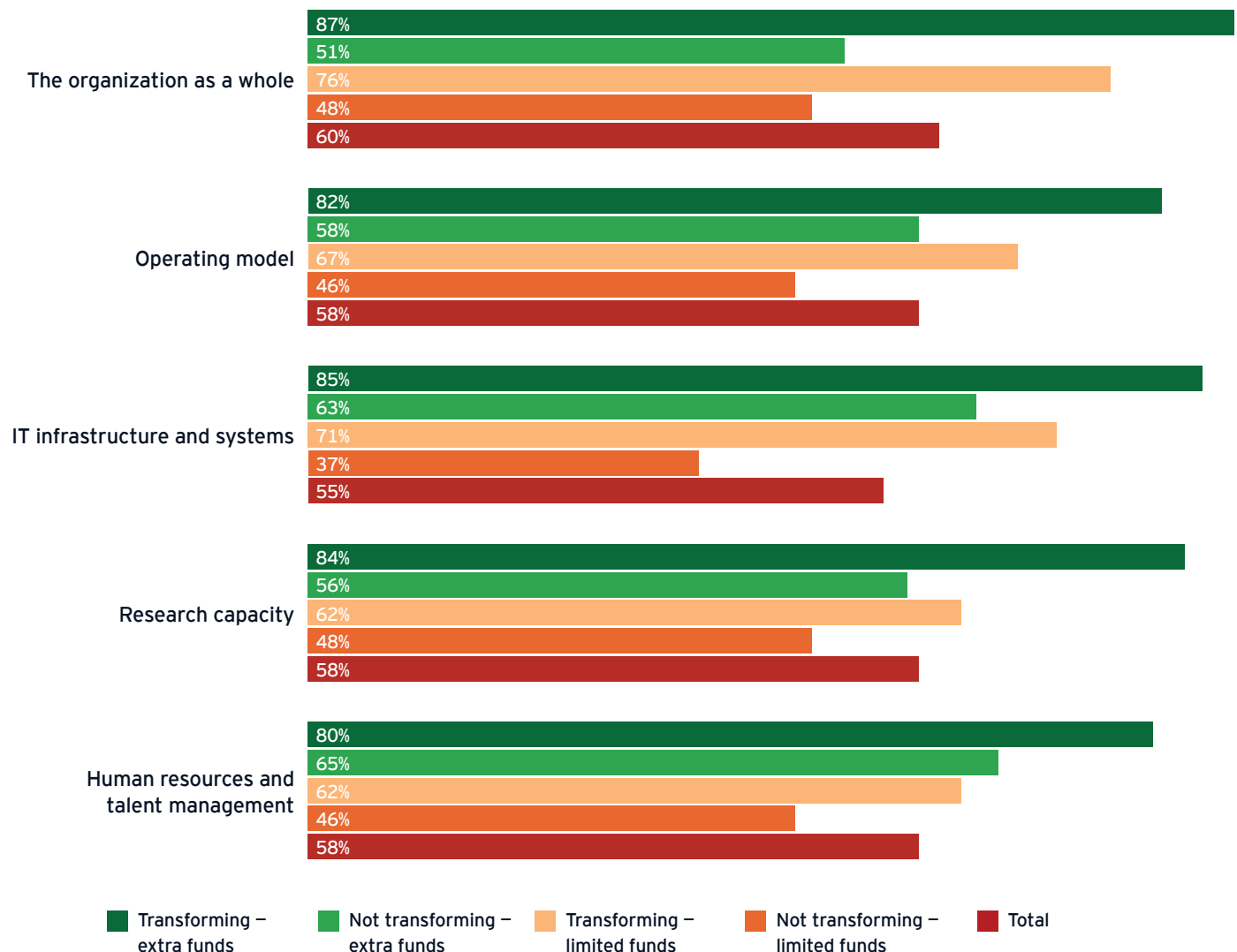
3. Appeal to talent by highlighting a commitment to public service.

COVID-19 has raised the profile of public health. Nearly half (49%) of respondents tell us that their work during the pandemic is helping them to attract high-quality employees. Just 18% disagree.

Highlighting the broader social role of public health will help organizations attract talented employees who might not have considered public health as an occupation, and these people are going to be important. Almost 6 in 10 (57%) respondents say that there is an urgent need to expand the skills profile beyond its traditional scope. By pointing to public health's role in creating sustainable health equity, officials will draw in a new generation of conscientious, socially minded employees.

Figure 12. Transformation is a critical enabler – even for organizations with lower budgets

Faced with another COVID-19-scale crisis, how confident would you be in your organization's ability to respond?



The appeal of public health will grow in line with efforts to reimagine and transform the field using digital technology. At organizations that are driving digital and operating system transformation, for example, 87% say that they are satisfied with the recruitment of new skills and talent into their workforce in the past year. For the others, the figure is only 65%.

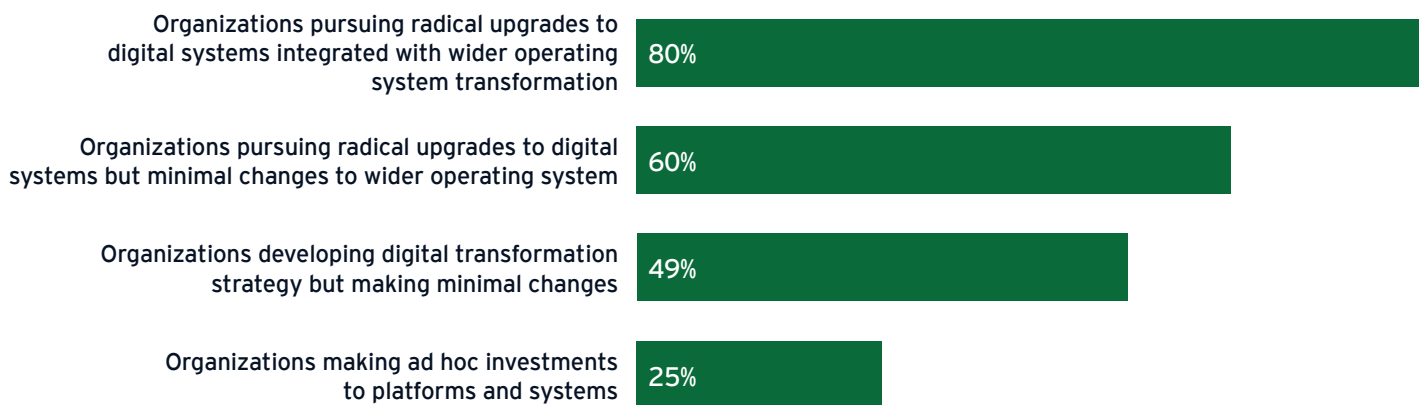
The offer of challenging, transformative work increases the appeal of the public health mission to new talent. As Figure 13 shows, the organizations that are pursuing radical digital transformation are also much more likely to say that the heightened profile of public health is a benefit to recruitment.

The promise of a reimagined, digitally driven public health organization should be an inspiration to anyone with an interest in the field. As organizations tackle the challenges of COVID-19, they should use this time to win over their workforces, embed a mindset that is open to innovation and use existing budgets to digitalize wherever they can.

This will put them in a stronger position to secure and sustain additional long-term funding and nurture the talent they need to create a more equitable public health system.

Figure 13. Those pursuing radical change are seeing new advantages around talent recruitment

Proportions that agree that “the high-profile role of public health in addressing the COVID-19 pandemic has made it easier to attract high-quality talent”



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