SIEMENS Healthineers

White paper

The workforce of the future

Flexible solutions for workforce challenges in diagnostic imaging, therapy, and clinical laboratory

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Value Partnerships

Edition #08

Executive Summary

Health systems face a dual demographic challenge – a rapidly shrinking number of personnel to provide quality care just as the care delivery environment is becoming increasingly complex.

The implications are sweeping. Failing to effectively navigate and prepare for these trends will leave organizations flatfooted, resulting in operational inconsistency, financial strain, or worse, suboptimal quality of care.

These trends pose unique challenges in the diagnostic settings such as imaging departments and diagnostic laboratories. The specialized nature of the equipment used, the specific labor shortages seen in the diagnostic technologist arena, the costs of inefficient equipment utilization, and the difficulties of integrating teams during mergers and acquisitions are among the most substantial challenges to be overcome by healthcare systems.

To ensure success, institutional leaders must develop a workforce strategy that emphasizes resilience. A resilient workforce entails more than meeting FTE requirements or filling vacancies. It means developing a dynamic and adaptable workforce, able to respond to evolving care delivery demands with ease and sophistication. To do that, organizations need a comprehensive toolkit available to effectively manage imaging and diagnostic laboratory operations, while also continuously developing clinical teams to meet the care delivery mandate of the future.

This white paper will focus on these unique challenges and explore some of the solutions that are available.

Contents

What's behind today's healthcare workforce challenges?

The factors responsible for today's workforce pressures in healthcare are manifold, and worth reviewing in order to put the problem in context. Most of the challenges described here are on a rising trajectory, and may require even more flexible workforce sourcing solutions in the future than they do today.

The growing pool of patients needing costly interventions

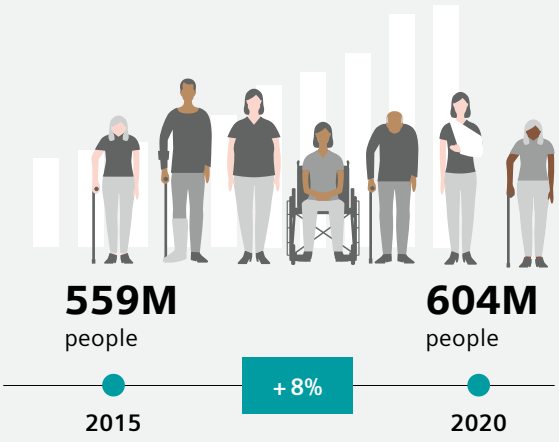
One strain on health systems is an aging population, worldwide. People are living longer now than ever before because of the availability of life-prolonging medical advances such as cancer treatments, diabetes medications, and improved management of autoimmune disorders.

Compounding this challenge, the post-war "baby boom" generation is swelling the ranks of the aging population in many countries.

In the United States alone, adults over 65 will comprise 20% of the population by 2030, compared to just 11% in 1985[1]. Similarly, people aged 65 and over are expected to make up 29% of the total population of the EU by 2070[2]. With as many as 98% of today's over-65 population in the U.S. having multiple co-morbidities, the projected increase in healthcare utilization will require more flexible and more skilled healthcare delivery options to meet the needs of the future.[3]

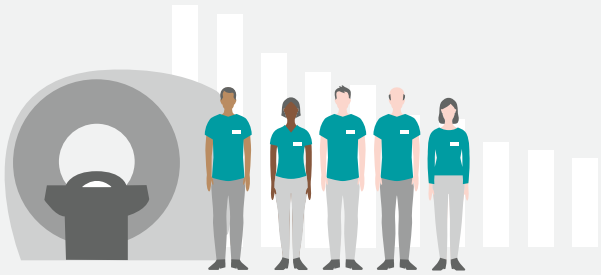
This increase in healthcare need, in turn, creates a growing demand for healthcare workforce.

More patients to care for



Increase of aging population (over 65 years old)*

Less personnel to provide that care



Workforce shortage of **7.2M** skilled healthcare professionals**

$ 155,000
Difference in annual revenue generated between an average CT Technologist and a highly productive CT Technologist.

* *Deloitte's Market Research Study updated forecast to 2021*
** *WHO: "A universal truth – No health without a workforce", page 38*

The limited availability of healthcare workforce

Just as more and more baby boomers are requiring medical care, many healthcare professionals from the same generation are retiring from the workforce. The anticipated staffing shortage is only amplified by an insufficient supply of new graduates for various healthcare specialties. Meanwhile, attrition of the existing workforce is accelerating, in large part due to stressful working environments, overburdened workloads, and few prospects for ongoing career development.

For example, the American Society for Clinical Pathology (ASCP) reports that half of all clinical laboratories are currently having difficulties recruiting new workforce. It is even more challenging for evening shifts and night shifts, where 82% of labs, respectively, are struggling to hire enough personnel to meet demand.[4]

The financial constraints of healthcare provision

Further compounding the healthcare workforce crisis are the budgetary pressures that many hospitals, clinics, imaging departments, and clinical laboratories face today, and which will only grow more pressing as current trends in healthcare financing continue. These financial headwinds result from numerous factors including

- shift from inpatient to outpatient care
- flat or declining reimbursements from Medicare and commercial insurers
- growing trend towards value-based care
- and rising drug and supply costs[5]

As reimbursement diminishes and costs continually rise, traditional solutions for workforce management and staffing are becoming obsolete. Operational leaders must leverage innovative tools and workforce solutions to overcome operational constraints, maximize latent capacity, and eliminate inefficiencies.

Consolidation and standardization

Health systems continue to identify opportunities to achieve greater economies of scale, either through mergers and acquisitions or partnerships. This strategy often involves integrating legacy and state-of-the-art systems, which requires workforce to adapt to unfamiliar procedures and systems. As a result, workforce productivity can be effected.

Savvy organizations develop a strategy for re-training, enculturation, and skills development to streamline integration and maximize efficiencies. However, more often than not, teams are thrown into a new organizational framework and left to "sink or swim." Thus, attempts to achieve organizational scale can lead to clinical mistakes and even reinforce inefficient or soiled operating practices.

Response to unforeseen events

As the 2020 COVID-19 pandemic has all too painfully demonstrated, the best-laid plans of any healthcare organization can be put to the test when an unforeseen event arises and places a colossal strain on the system. For example, disruptions in care due to the COVID-19 pandemic led to an estimated $246 million in lost revenues for a large academic medical center in the southeast.[6] Healthcare provider organizations around the world are struggling to adapt their systems to telehealth and remote care.

Diagnostic disciplines face particular workforce challenges

More specialized technical knowledge requirements

While workforce shortages are problematic for all medical disciplines, they pose unique challenges in radiology and clinical laboratory settings – partially due to the variety and complexity of the procedures performed in these diagnostics settings, that requires a high level of skill. This is especially true given that ongoing technical innovations result in a steady flow of new systems for technologists to master.

Just because a Radiologic or Clinical Laboratory Technologist candidate has extensive experience in their field does not mean they know how to operate the exact equipment used in a specific setting. The learning curve can be steep – so these teams must choose between enduring a longer recruiting cycle for the right candidate or bringing on workers who will require extensive training in order to hit their stride on the job.

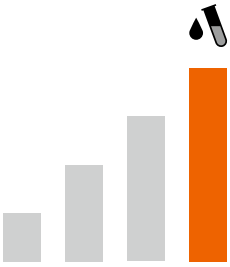
Workforce shortages

In clinical laboratories, test volumes are steadily increasing as technology advances and the population ages. More than 13 billion tests are routinely performed in more than 250,000 certified clinical labs in the U.S. every year,[7] with new blood tests becoming available daily.[8] And baby boomers are receiving more than four times as many of these lab tests as individuals under age 65.[9]

As the population ages, significantly more care is needed which includes an increase in sample volume. According to the Bureau of Labor Statistics, demand for lab professionals increased 13% between 2018 and 2019, almost double the average job growth in the United States. However, the number of accredited training programs in clinical laboratory science has decreased by nearly 25% since 1990. When this factor is combined with the continuing retirement of aging lab professionals, it only exacerbates the issue.[10] The UK faces a similar shortfall in qualified technologists, with an estimated 700,000 additional personnel needed by 2030.[11]

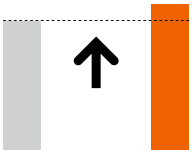
Baby boomers

More than **4x** the number of tests



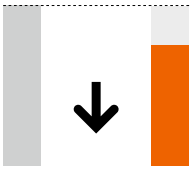
Laboratory Professional demand

Increased **13%**



Accredited training programs

Almost **25%** decrease



Overtime costs

When fewer Clinical Laboratory Technologist are available to process an increasing volume of samples, one solution is to ask existing workforce to work more hours. However, this is, at best, a short-term fix; long hours take a toll on employee morale and productivity and drive up labor expenses because of overtime compensation.

Inefficient resource utilization

In both clinical laboratories and imaging departments, a shortage of qualified and trained workforce can lead to system utilization below full capacity. Such suboptimal resource utilization means these extremely costly investments will take longer to pay for themselves.

Need for workforce training following mergers and acquisitions

As noted earlier, many mergers and acquisitions are taking place in healthcare in pursuit of economies of scale, and thus enhanced profitability. However, when previously separate diagnostic teams are combined under one banner, some members will usually have to switch from known processes, procedures, or technology to unknown ones. This not only means that their steep learning demand curves will temporarily impede productivity, but also that precious time and resources will have to be allocated for their training.

Increased stress factors for workforce

Coping with unfamiliar equipment, insufficient training, excessive work hours due to workforce shortages, and unrelenting work volume can all contribute to employee stress – which in turn can cause low employee satisfaction, severe burnout, and exacerbate the problem with even more turnover.

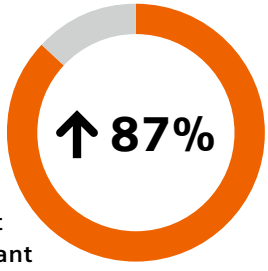
Spreading workforce too thin also, inevitably, increases multitasking, which psychology research has demonstrated as a substantial source of errors. The more complex the tasks involved, the greater the time and error consequences.

This type of stress leads to staff burnout and attrition, which then increases the pressure on remaining staff. This vicious circle compounds productivity losses and staff retention challenges.

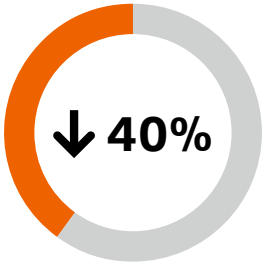
In some cases, technology solutions can boost efficiency and productivity by automating certain tasks and processes, or at least making them less labor-intensive. However, new technology may come with a steep learning demand curve, taking precious time that busy laboratory and imaging departments may not have to spare.

These workforce challenges in the diagnostic end of healthcare provision require innovative solutions. Some medtech companies offer a number of workforce and training resources that may be of assistance.

More demanding workforce



of millennials rate "professional or career growth and development opportunities" as important to them in a job.*



Workforce multitasking

of productivity can be lost when employees do a lot of task switching in a day.**

* *http://news.gallup.com/businessjournal/193274/millennials-jobs-development-opportunities.aspx*

** *Kaushik N. Pre-analytical errors: their impact and how to minimize them. Medical Laboratory Observer, 2014 May 18 [cited 2019 Nov].*

Innovative solutions to the challenges of staffing diagnostic centers

Staff development and performance consulting

Your diagnostic workforce may need help in optimizing their use of new systems or they may see opportunities to improve efficiency, but lack the time to make needed changes because of their overwhelming workloads. Staff development and performance consulting is an innovative way to optimize clinical operations, increase workforce productivity, reduce unwarranted variation, and optimize the diagnostic experience.

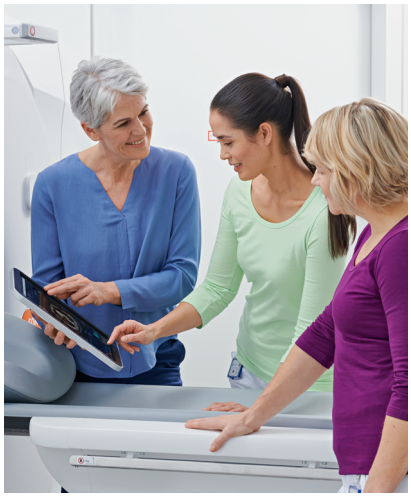
Medtech companies can partner with diagnostic departments to supply experts who are intimately familiar with the operation of imaging or laboratory systems and are also certified performance coaches with extensive experience in standardization and improvement. Flexible contract arrangements mean they can support a diagnostic team for as long as needed, from a few months to a few years – whatever it takes to help elevate the team's performance and generate more value throughout their operations.

This approach is paying dividends for busy diagnostic departments. One large regional health system brought in an OEM-provided coach to help integrate new CT and MR imaging equipment into the health system's clinical practice – while also standardizing processes across five delivery networks to improve care quality, efficiency, and cost effectiveness. The health system also realized near-full equipment utilization and increased talent retention.

Expert coaches bring a perspective that goes beyond performance management and training functions. They can deliver high value services like network-wide standardization, and improve the financial health of clinical laboratories and diagnostic imaging departments. The health system also realized near-full systems utilization and increased talent retention.

FlexForce Coach is a comprehensive staff development and performance consulting solution provided by experts from Siemens Healthineers. It is personalized to meet your needs and designed to deliver lasting value to your organization that is tracked and reported to maximize success.

Improve your operations and attractiveness as an employer



A comprehensive staff development and performance consulting solution provided by experts from Siemens Healthineers with thousands of hours of system-specific education and experience

Application and system training delivered by an education expert

Individual performance consulting to increase productivity of technologists

Optimization and standardization across your organization

Value

- Reduce unwarranted variation
- Increase workforce productivity
- Optimize the diagnostic experience
- Optimize clinical operations

Expert technologist workforce solutions

When healthcare organizations implement new systems, the need for highly skilled and trained technologists becomes vital. Qualified personnel must often be sourced, trained, and onboarded putting a strain on the organizational resources. Flexible expert technologist staffing solutions can help organizations under exactly these circumstances.

Medtech firms can supply trained and vetted technologists for a few months to several years with specific expertise in clients' systems. These technologists are ready to integrate seamlessly into your organization with minimal training and supervision from in-house staff.

A customer in the western United States provided a positive example of the impact that OEM-provided expert technologists can produce. The organization purchased a new interventional 3D imaging system, but quickly realized that they did not have the technical or clinical expertise within their workforce necessary to actualize the revenue potential of this sophisticated piece of equipment.

The Imaging department worked with a medtech partner to source a technologist who was thoroughly trained in 3D interventional imaging, including the very system in question. With this support, the new system went live on time. Further, the department was able to immediately expand clinical capabilities to patients, while avoiding the traditional latency period associated with new equipment.

Whether your organization is looking for performance coaching or highly skilled technologists, consider partnerships with medtech companies to optimize operations within imaging departments and clinical laboratories.

FlexForce Tech is a workforce solution that provides highly skilled technologists with OEM training and support. These technologists have in-depth knowledge of systems and applications as well as soft skills to integrate seamlessly into your organization and operate systems from Siemens Healthineers efficiently.

Improve your clinical and financial outcomes

A workforce solution that provides highly skilled and licensed/certified technologists who are equipped with OEM training and support

First-class technologists who are hand-selected by Siemens Healthineers to address your workforce challenges

In-depth knowledge of systems and applications thanks to OEM trainings to perform quality work from week one

Seamless integration of FlexForce Techs into your organization, thanks to soft skills training

Value

- Increase workforce productivity
- Reduce unwarranted variation
- Optimize the diagnostic experience

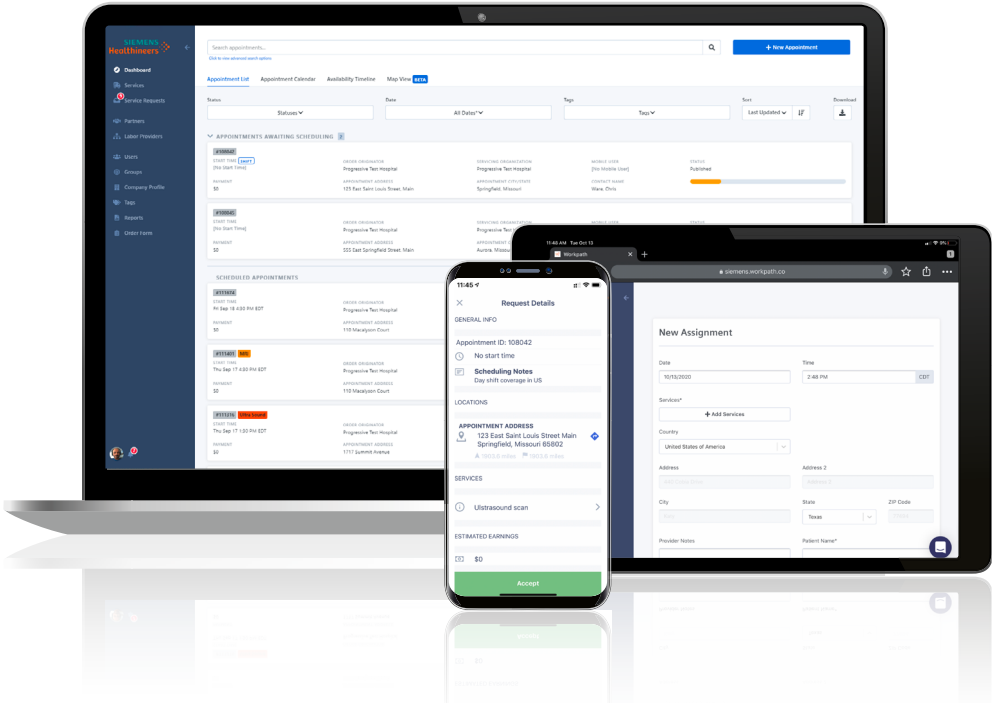
One-stop sources for diagnostic centers' workforce needs

Today's complex diagnostic centers have multiple workforce challenges and gaps. These needs include insufficient clinical and technical knowledge and workforce recruiting and retention. Medtech partners are developing platforms that can offer comprehensive solutions to a wide variety of these needs.

A key concern is quickly sourcing on-demand talent to compensate for workforce absenteeism. The challenges here are magnified across large-scale health systems that have multiple locations and a mix of legacy and new systems. Institutional leaders and administrators can benefit from a centralized hub that allows quick identification and dispatch of appropriate talent to the appropriate location. One platform allow automated dispatching of existing full-time workforce in combination with any short or long-term on-demand talent.

This kind of centralized hub can help healthcare providers improve clinical outcomes, financial performance and retention. This platform can also reduce burnout and extend clinical capabilities in new settings.

CrewPlace is a cloud-based solution for on-demand talent placement and workforce optimization that allows hospitals and other healthcare facilities to address staffing shortages while managing their own workforce through a single digital platform.



Challenge	Need for shift or procedural coverage.	Need for resource optimization.	Need for expertise and change management.
Solution	**The network**	**FlexForce Tech**	**FlexForce Coach**

Virtually managed diagnostic workforce education, simplified

Without support measures, an organization can get stuck in a vicious cycle of attrition, burnout, and loss of talent, at a huge financial and productivity loss. Digital and virtual advancement opportunities can help to break this cycle and attract future talent to the organization. Enabling all staff members to be proficient, confident, and consistent in the quality of care they provide would benefit your entire organization and positively impact the patient experience.

Virtual education solutions increase your reputation as a cutting-edge employer, enabling you to stay abreast of new technologies and transform care delivery. A personalized, on-demand, virtual education experience is more important now than ever before, as COVID-19 has shown us. Flexible access to up-to-date learning resources has become vital.

Rather than spending organizational resources to create educational materials, which may quickly become obsolete as new data emerges, virtual education platforms offer a cost-effective solution. Medtech companies can supply validated, up-to-date information with frequent iterations to reflect new learnings which can then be assigned across an organization alongside with existing materials.

Virtually managed education platforms are important tools for healthcare administrators to streamline staff education while providing performance insights and optimizing clinical operations. Medtech companies offer a wide variety of virtual modules and include workforce management and administration solutions for assignment and completion tracking and reporting. Keeping your workforce trained and engaged, while helping them manage their own career growth is a huge value for organizations.

Using virtual education and performance management tools in conjunction with expert on-site coaching creates powerful synergies for radiology departments and diagnostic labs. Using on-site performance coaches to curate, monitor, and upload additional content on virtual education platforms enables organizations to improve workforce competency and morale. Further, coaches can relieve some training-related administrative burden and unlock latent capacity within the organization.

Siemens Healthineers Academy is a personalized online education experience designed for healthcare professionals that is customized to their role and learning behavior – designed to increase their competency, efficiency and productivity.

Siemens Healthineers Academy Admin is a Siemens Healthineers Academy premium subscription, supporting your clinical institution's performance growth with integrated workforce education management and administration features.

What healthcare providers are asking for ...		**...what MedTech partners can offer:**	
Attract, retain and develop workforce	**Personalized learning experience** Instant access to digitalized education and information at the individual's fingertips	**Share and connect with experts** Information and updates on cutting edge trends from online network	**Empower the learner** Creation of individual profile, education plans, and transcripts to record trainings
Standardize quality of care	**Drive staff competency** Instant access to formal education, supported by social learning	**Enhance workforce performance** Education experience for the institution with learning plans for assignment and management	**Customized workforce management** Customizable education plans combining education for employees designed by Siemens Healthineers and/or your institution
Reduce risk and act compliantly	**Monitor progress** Dashboard and reporting tools for instant viewing of education status	**Streamline Audit Preparations** Integrated management and administration tools	**Manage entire teams of departments** Creation of tailored education plans with group assignments and tracking functionalities with a single solution

Conclusion

The time has come for the diagnostic workforce of the future

The workforce challenges that many healthcare institutions face today are likely to continue and even become more acute in years to come. While personnel shortages are problematic for many different areas of healthcare, they impact diagnostic imaging and clinical laboratory departments in specific ways that can be difficult to mitigate against – due to the extremely specific and variable nature of the systems used in each setting. A shortage of qualified staff, challenges in development and retention of staff, and the wide array of complex systems in place within imaging departments and clinical labs are interlocking challenges that require flexible solutions.

Strong partnerships with medtech companies can help healthcare enterprises overcome these challenges, including short-term issues like temporary staffing, and longer-term issues like workforce training and development. User-friendly digital technologies can give administrators access to an extensive talent pool and comprehensive educational and career development resources. Using digital training tools in conjunction with on-site performance coaching can accelerate professional development and increase organizational performance in imaging and laboratory diagnostics, while relieving administrative burdens on institutional leadership.

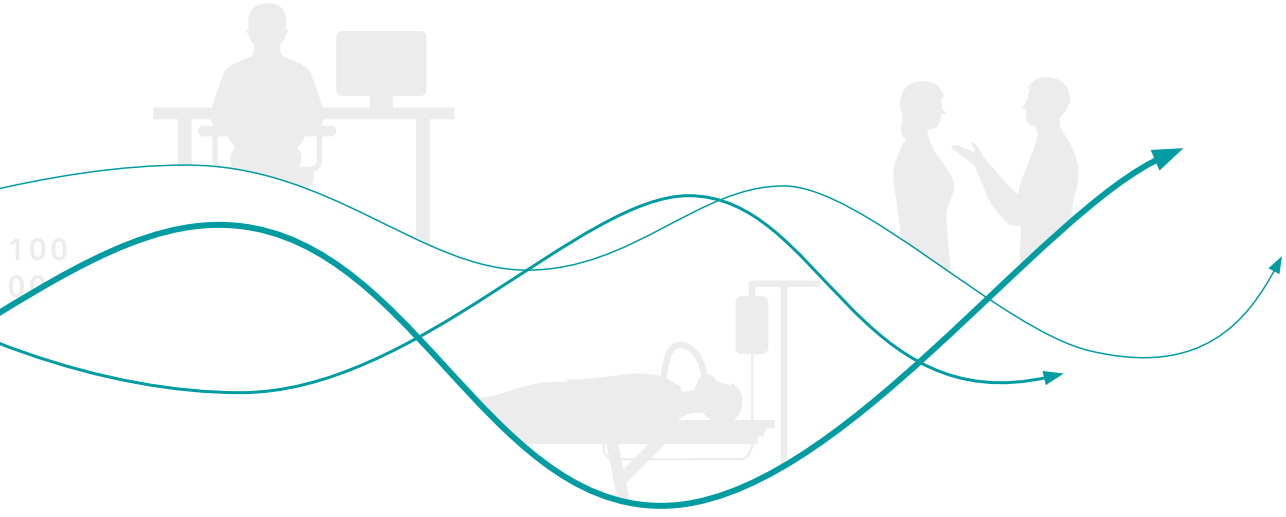
Siemens Healthineers offers a number of solutions designed to help institutions respond to these challenges more smoothly and nimbly. These solutions include **FlexForce Coach, FlexForce Tech, Siemens Healthineers Academy Admin, Siemens Healthineers Academy, and CrewPlace**. They have already proven their value in a number of healthcare settings, both in the US and around the world – earning high marks from customers, and achieving measurable improvements in efficiency and workforce satisfaction.

Is your organization facing any of the challenges described here?

Contact Siemens Healthineers Enterprise Services to see how we can help you develop the workforce of the future:

siemens-healthineers.com/value-partnerships

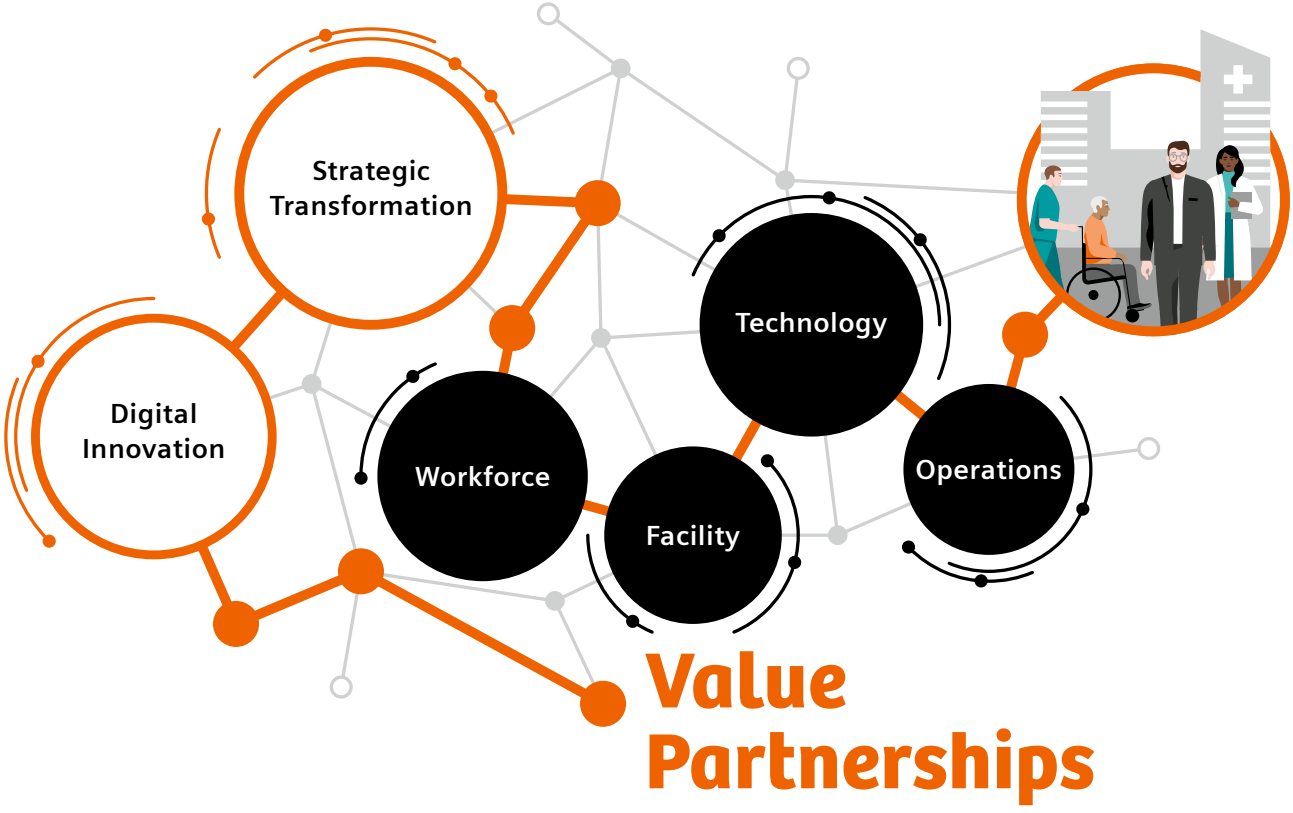
eshq.team@siemens-healthineers.com



About Value Partnerships

Siemens Healthineers Value Partnerships are long-term, performance-oriented, collaborative engagements. We bring a combination of clinical insight, medical technology innovation, strategic vision, implementation expertise, and operational excellence to the table for you. As trusted partners, we help you formulate and achieve your strategic goals, increasing enterprise-wide value.

Value Partnerships drive value across your entire enterprise with focus on four domains: Technology, Operations, Workforce and Facility. Furthermore, together we enable breakthroughs through holistic and transformative initiatives such as Strategic Transformation and Digital Innovation.



References

1. Institute on Aging. https://www.ioaging.org/aging-in-america. Accessed May 2020.

2. ICF. What an aging population in Europe means for its economic and social future. https://www.icf.com/insights/social-programs/aging-population-in-europe. Accessed September 2020.

3. Chiron Health: Addressing the healthcare needs of an aging population. https://chironhealth.com/blog/addressing-the-healthcare-needs-of-an-aging-population/. 2015. Accessed May 2020.

4. Walker T. Laboratory workforce shortage. Aspira Clinical Software Systems. 2020. https://aspyra.com/aspyra_blog/laboratory-workforce-shortage/. Accessed May 2020.

5. Becker's Hospital Review: The top financial pressures facing healthcare organizations: 5 leaders discuss. 2019. https://www.beckershospitalreview.com/finance/the-top-financial-pressures-facing-healthcare-organizations-4-leaders-discuss.html. Accessed May 2020.

6. The Emory Wheel. April 15, 2020. Accessed at https://emorywheel.com/emory-cfo-estimates-45-million-net-loss-for-university-from-covid-19/.

7. Haymond S. What everyone should know about lab tests. Scientific American. 2016. https://blogs.scientificamerican.com/guest-blog/what-everyone-should-know-about-lab-tests/. Accessed May 2020.

8. AACC. Laboratory medicine: advancing quality in patient care. 2015. https://www.aacc.org/health-and-science-policy/aacc-policy-reports/2015/laboratory-medicine-advancing-quality-in-patient-care. Accessed May 2020.

9. Osborne J. Why baby boomers are putting medical labs (from workers to tests) under the microscope. Med City News 2016. https://medcitynews.com/2016/03/medical-labs-testing-shortage/. Accessed May 2020.

10. Freeman J. A shortage of skilled medical lab workers is looming. Scientific American. 2019.https://blogs.scientificamerican.com/observations/a-shortage-of-skilled-medical-lab-workers-is-looming/. Accessed May 2020.

11. Healthcare in Europe. Addressing the critical lack of skilled lab workers. https://healthcare-in-europe.com/en/news/addressing-the-critical-lack-of-skilled-lab-workers.html. Accessed September 2020.

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The scientific overlay on the title is not that of the individual pictured and is not from a device of Siemens Healthineers. It is modified for better visualization.

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