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Engineering the extraordinary

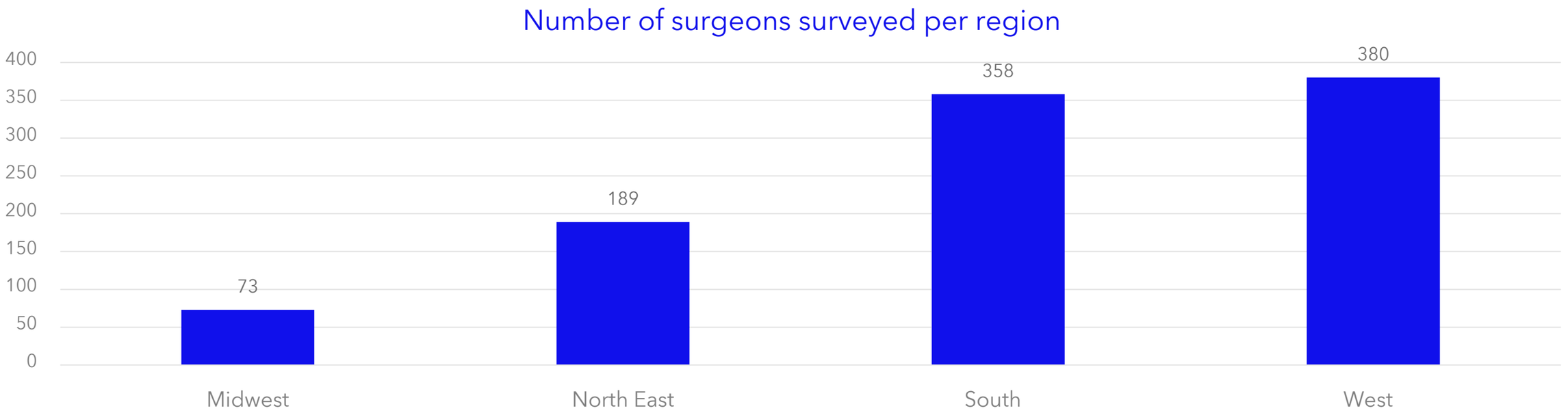
U.S. State of Surgery Report

Key findings and takeaways

JUNE 2024

Summary of our survey

- The survey was conducted from 17th to 31st May 2024 via Censuswide.*
- It collected responses to 14 questions from 1,000 surgeons with various specialties, within both the public and private healthcare sectors.
- Those surgeons were also located across the U.S. – specifically, across 50 different states + the District of Columbia.



*Data on file.

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Overview of this document

In late May 2024, Medtronic (via Censuswide) surveyed 1,000 U.S. surgeons to assess their perspectives on current technology in U.S. hospitals and operating rooms and to identify areas for improvement.

The objective was to quantify current attitudes towards the impact of inefficient technology on patient care and surgical training as well as the potential for digital solutions to transform operating rooms in the future.

The new findings come as Medtronic launches its Time To Connect campaign, which documented the use of Touch Surgery™ Live Stream in operating rooms (ORs) at major hospitals, specifically streaming from the U.S. and Portugal and streaming to India, to raise awareness of the significant positive impact digital technologies can have on the surgeon experience and patient care.

This presentation captures the survey's key findings from the 14 questions asked and should be used as a resource for anyone looking to learn more about the study.

Key findings

U.S. surgeons believe digital technologies like AI and VR can level the playing field in access to surgical training

- 85% say AI-driven diagnostic tools could enhance precision in areas with limited specialist availability.
- 81% think virtual reality (VR) simulations could provide advanced surgical training without geographic constraints.
- 82% believe digital training platforms and cloud-based patient records could help close the gap in regional surgical care

There are access inequalities to surgical expertise and training across the nation

- A majority of surgeons (82%) believe digital innovations, such as digital training platforms and cloud-based patient records, could help close the gap in U.S. regional surgical care.
- 32% say enabling real-time collaboration and coaching with specialists worldwide could enhance surgical care.
- Over a third (36%) say live stream technology would enhance surgical training through greater exposure to diverse surgical approaches and expertise

Live streaming can improve surgical training

- Looking at the global stage, roughly 4 in 5 (82%) believe that streaming procedures in real time will improve surgical outcomes globally, through greater access to expert training and knowledge sharing.
- 84% say telehealth services, enabled through tech like live stream, could improve access to specialist consultations in underserved areas.
- More than 4 in 5 surgeons (83%) say digital training platforms could offer remote education to surgeons in rural hospitals.

While technology makes our lives easier outside of work, the tech in the operating rooms lag behind

- The majority (73%) said technology in the OR lags behind everyday technologies experienced in their personal life, like streaming or cloud content storage
- Meanwhile, 82% say they must rely on technologies like WhatsApp, Zoom or FaceTime to remotely share and view surgeries in the absence of dedicated surgical streaming platforms

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Key questions

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The potential for technology improvement to enhance patient care

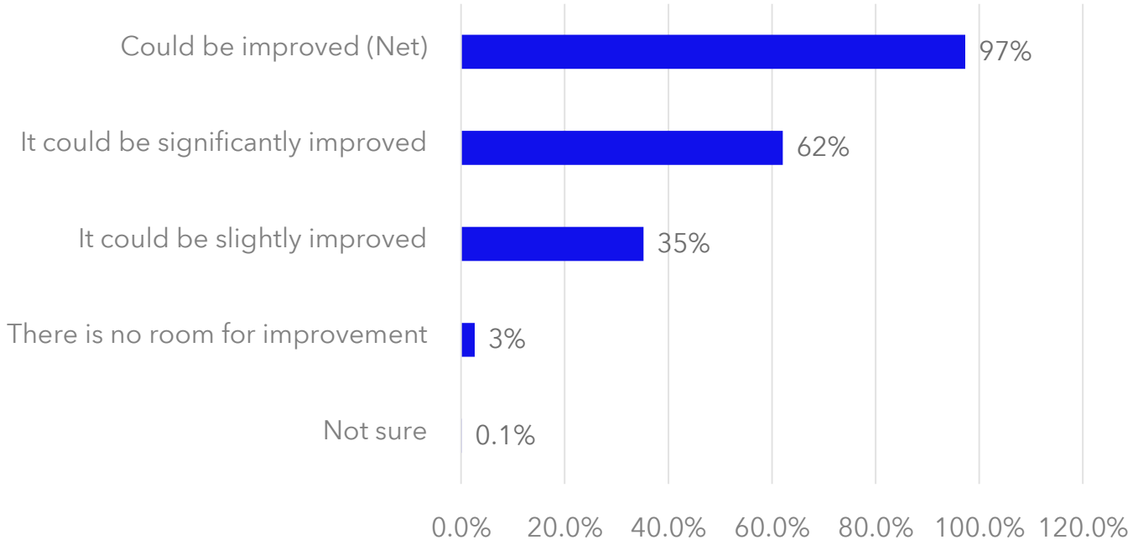
"Thinking about the current technology you use (at the hospital), how much, if at all, do you think it could be improved to make it easier to deliver care?"

KEY FINDINGS:

- **Region:** Across the U.S. there is almost unanimous agreement (97%) that current technology used in hospitals can be improved. The West Coast have the strongest view of all regions, tipping to 98%.
- **Length of Service**: Surgeons with over 20 years of experience are less inclined to see room for improvement (50%) than those with under a year of experience (100%).
- **Age:** 61% of 25- to 34-year-olds believe there is significant room for improvement using technology. Just 1 in 10 (11%) of the oldest generation surveyed (55+) believe there is no room for improvement.

TOTAL SAMPLE

Response	%	Count
Could be improved (Net)	**97%**	**973**
It could be significantly improved	62%	621
It could be slightly improved	35%	352
There is no room for improvement	3%	26
Not sure	0.1%	1



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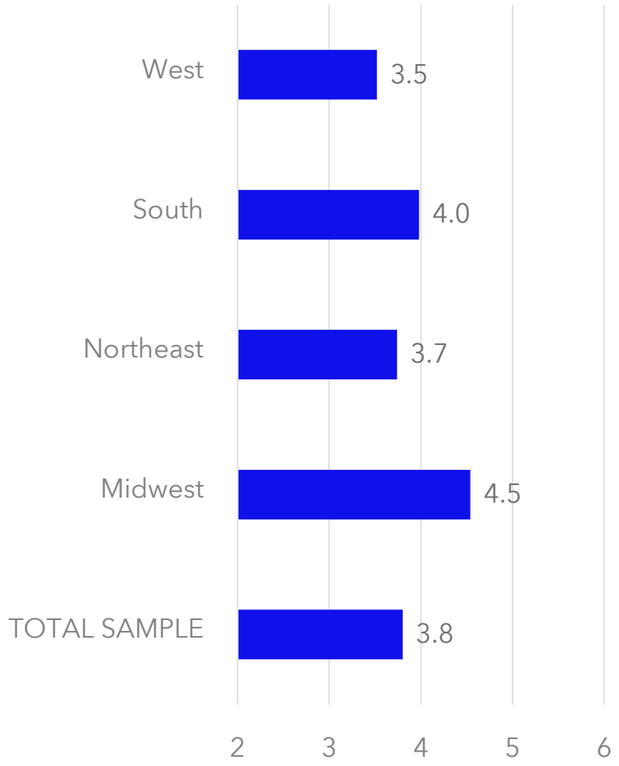
Time lost to technological inefficiencies

How much time, if any, do you believe is lost or wasted due to outdated/inefficient technology in an average week?

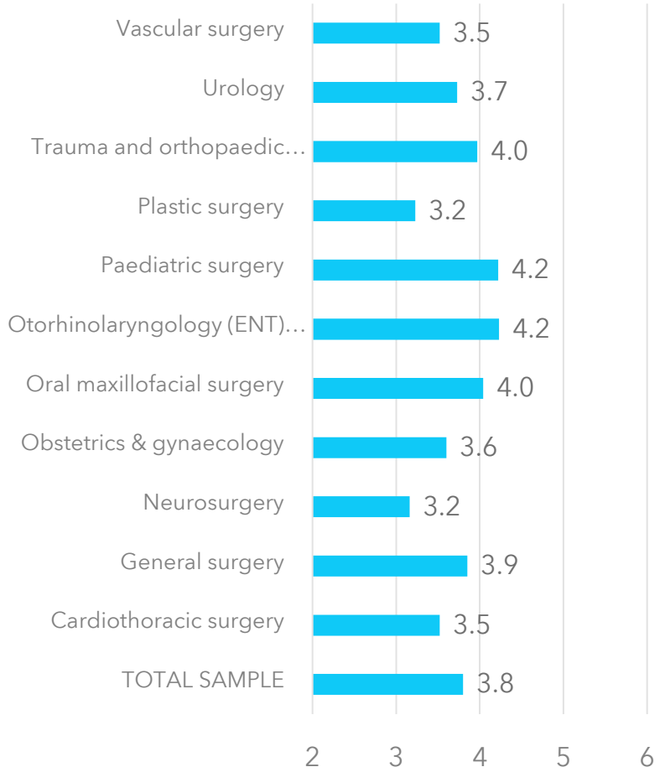
Regional

Time lost per week, hours



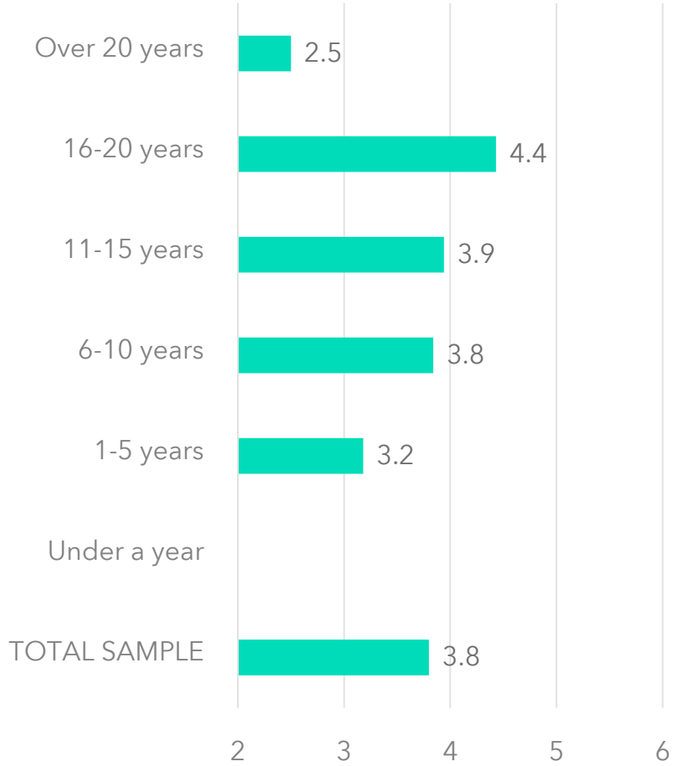
Area of practice

Time lost per week, hours



Length of service

Time lost per week, hours



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The impact of inefficient technologies on delivery of care

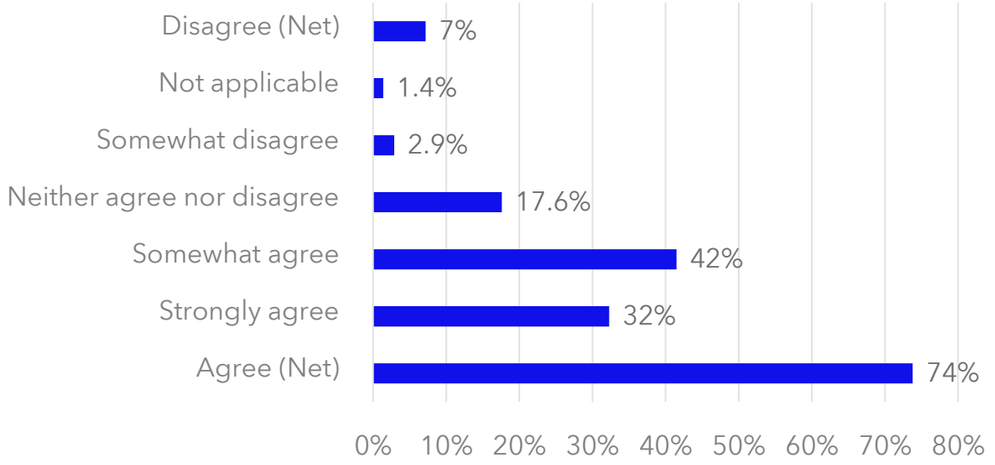
To what extent do you believe that 'Technology in the OR is inefficient and could impact the delivery of patient care'.

KEY FINDINGS:

- **Region**: Over three quarters (77%) of surgeons from the Northeast agree technology in the OR is inefficient, more so than any other region.
- **Length of Service**: Surprisingly, those newest to surgical practice (under a year) were the most split on the impact of inefficient tech on patient care, with half believing technology in the OR is inefficient and the other half undecided.
- **Practice Area**: General surgery is the most affected by inefficient technology, with 77% agreeing. Three quarters of Paediatric professionals (75%) also share this view, while Urology emerges as the least affected, with over a half (51%) in agreement.

TOTAL SAMPLE

Response	%	Count
Agree (Net)	**74%**	**738**
Strongly agree	32%	323
Somewhat agree	42%	415
Neither agree nor disagree	18%	176
Disagree (Net)	7%	72
Somewhat disagree	3%	29
Not applicable	1%	14



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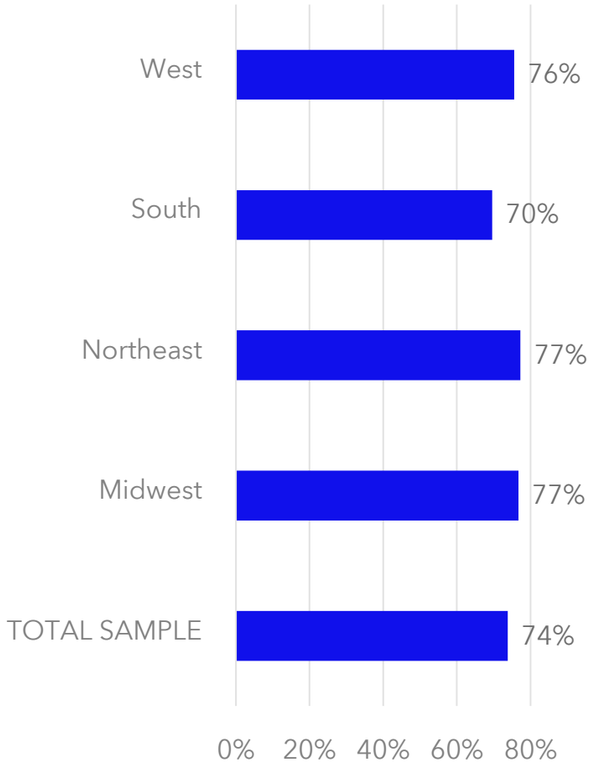
The impact of inefficient technologies on delivery of care

To what extent do you believe that 'Technology in the OR is inefficient and could impact the delivery of patient care'.

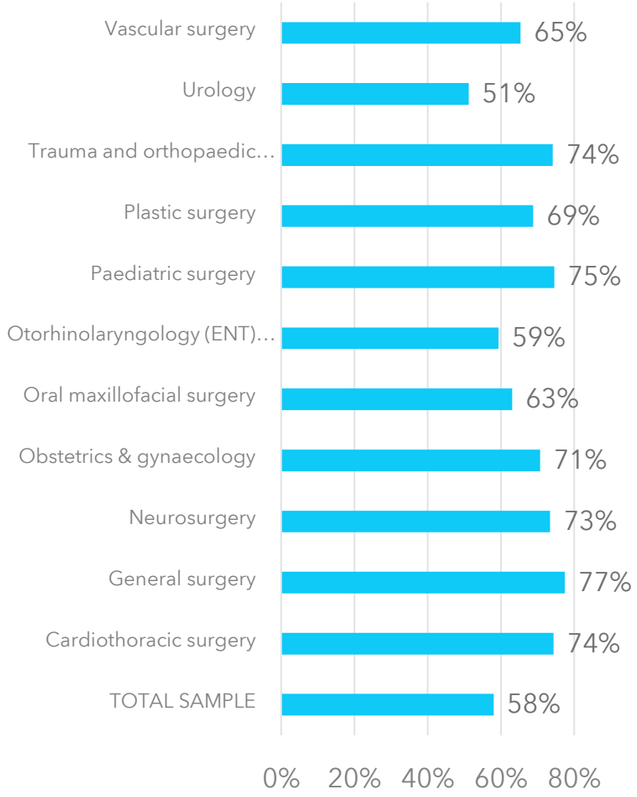
Regional

Agree (Net), %



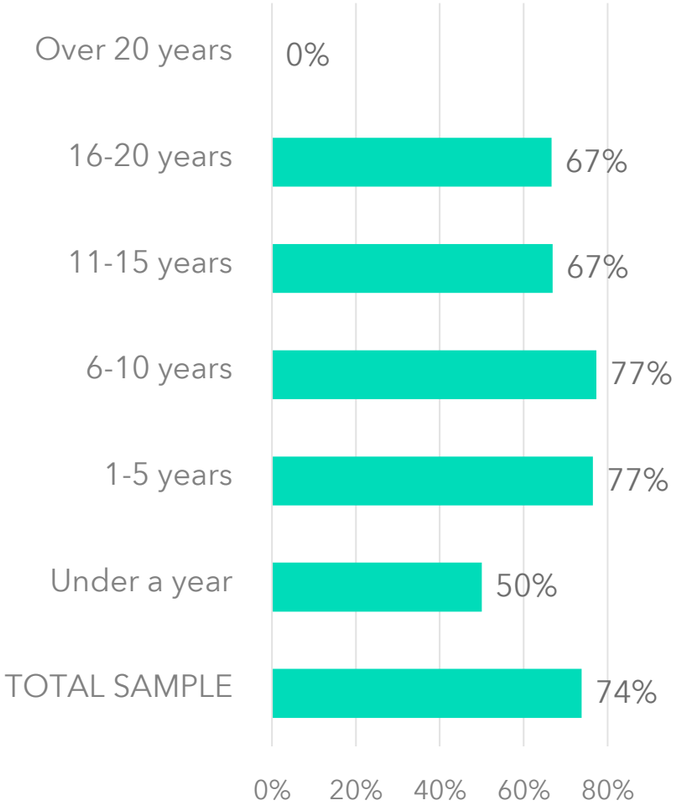
Area of practice

Agree (Net), %



Length of service

Agree (Net), %



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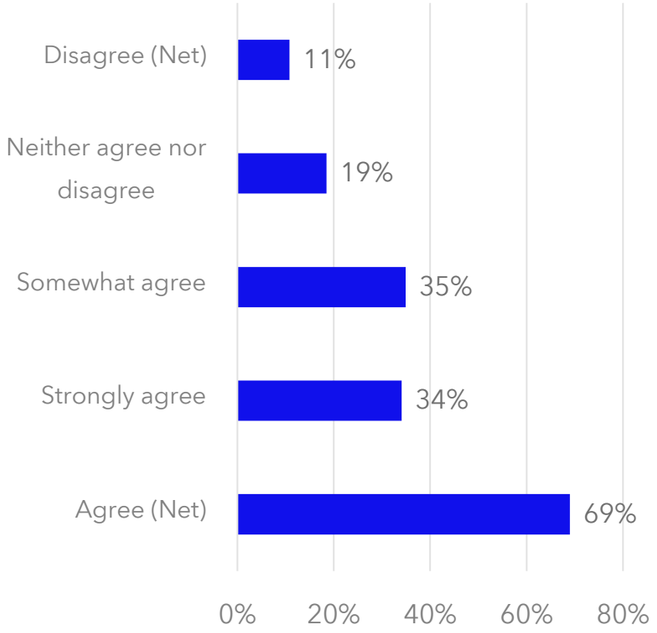
General attitudes to the impact of technology in the surgical field

To what extent do you agree or disagree with the following statements:

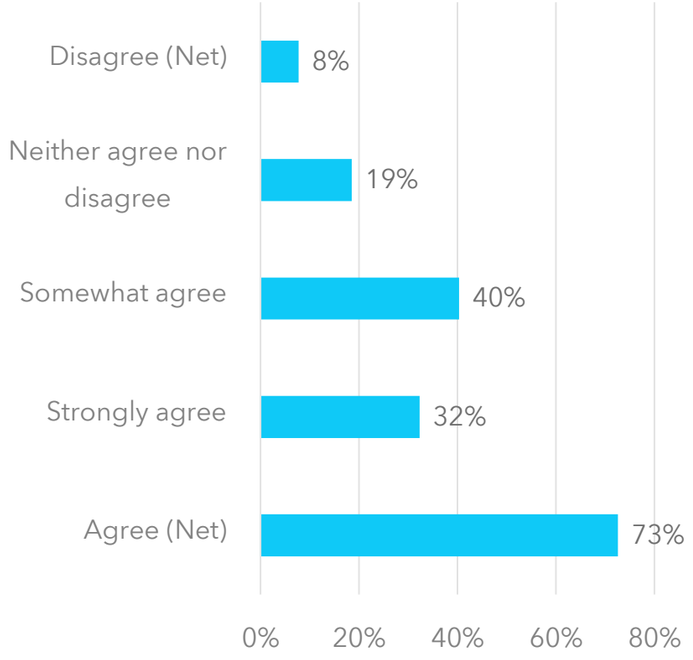
I often spend time outside of the hospital completing administrative tasks because the technology I use is inefficient

Agree (Net), %



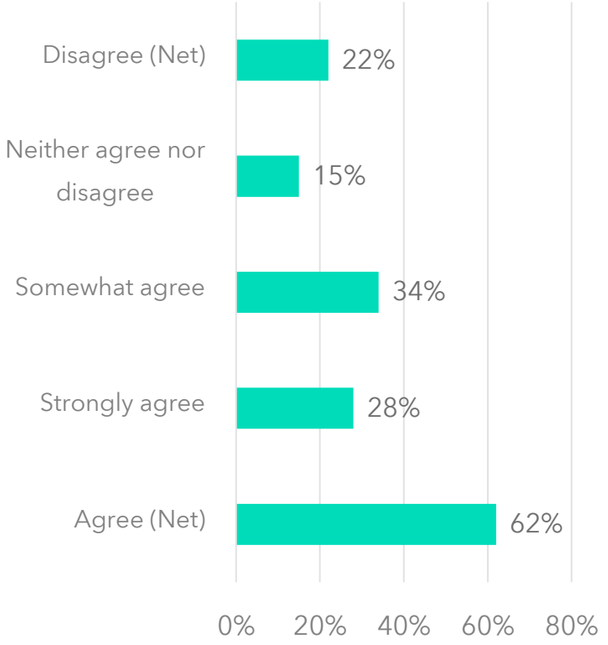
Technology in the OR lags behind the technological advances I experience in my personal life

Agree (Net), %



I have considered leaving the surgical field due to feeling burnt out

Agree (Net), %



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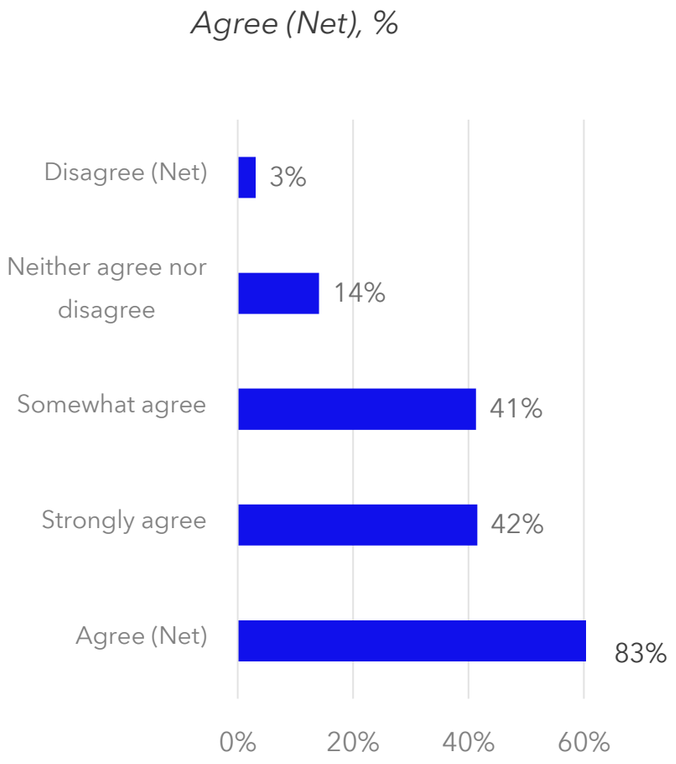
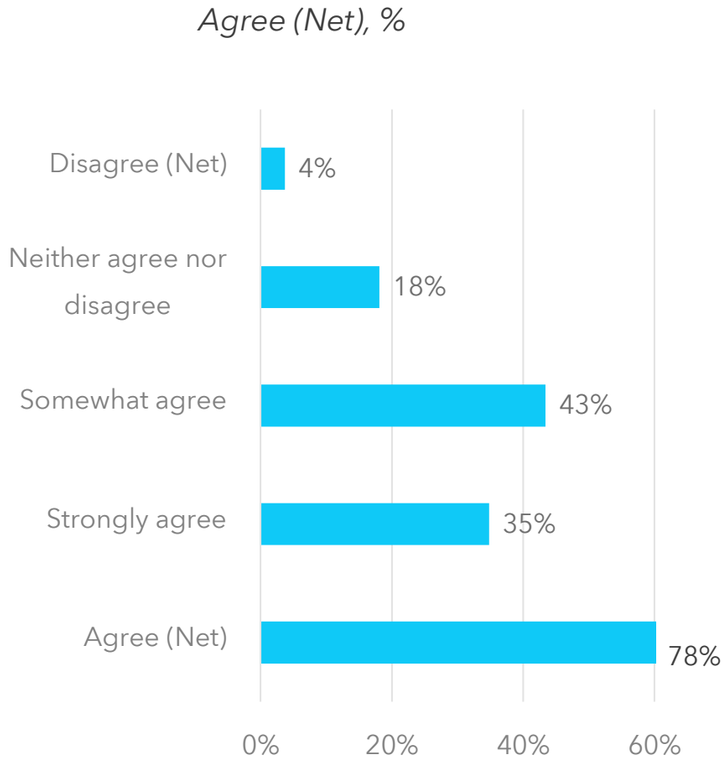
The potential for technology improvement to address regional disparities

To what extent do you agree or disagree with the following statements regarding technology and regional disparities in surgical care?

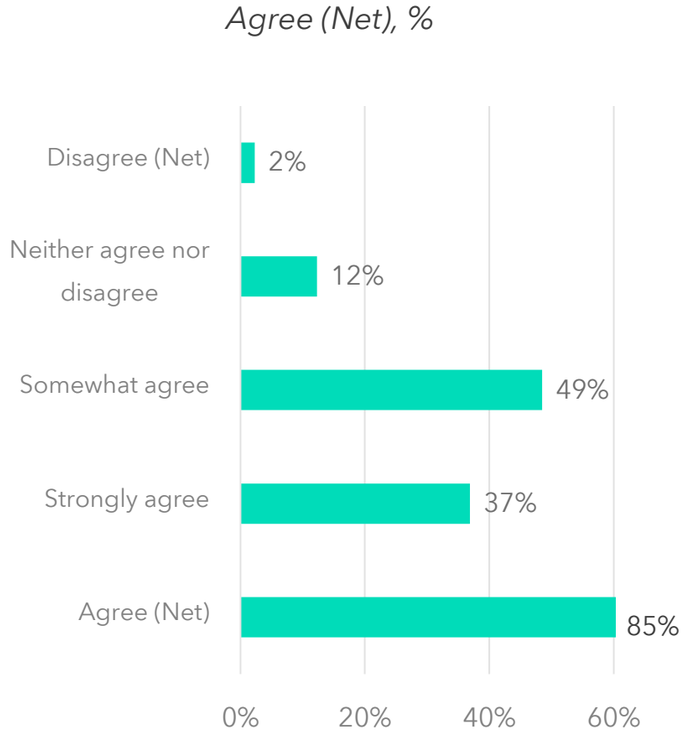
Digital training platforms could offer remote education to surgeons in rural hospitals.



AI can close the gap in regional surgical care disparities.



AI-driven diagnostic tools could enhance precision in areas with limited specialist availability.



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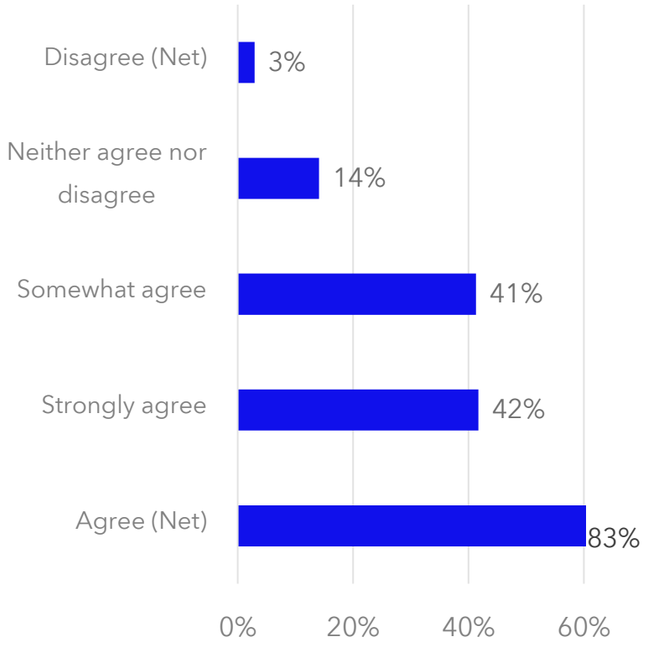
The potential for technology improvement to address regional disparities

To what extent do you agree or disagree with the following statements regarding technology and regional disparities in surgical care?

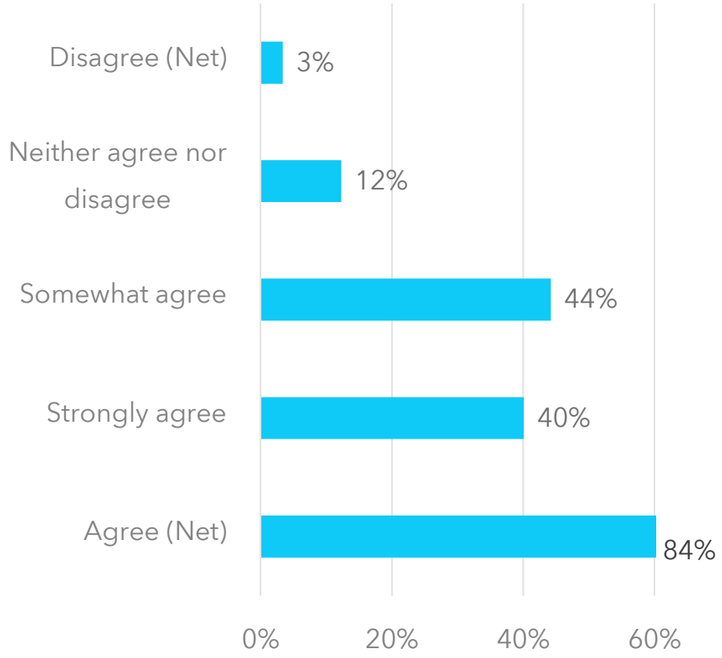
Cloud-based patient records could facilitate coordinated care across different regions.

Agree (Net), %



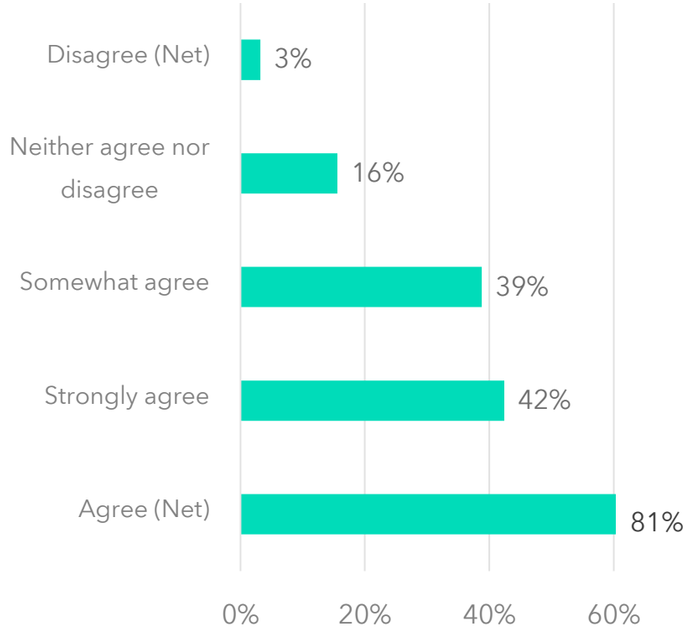
Telehealth services could improve access to specialist consultations in underserved areas.

Agree (Net), %



Virtual reality simulations could provide advanced surgical training without geographic constraints.

Agree (Net), %



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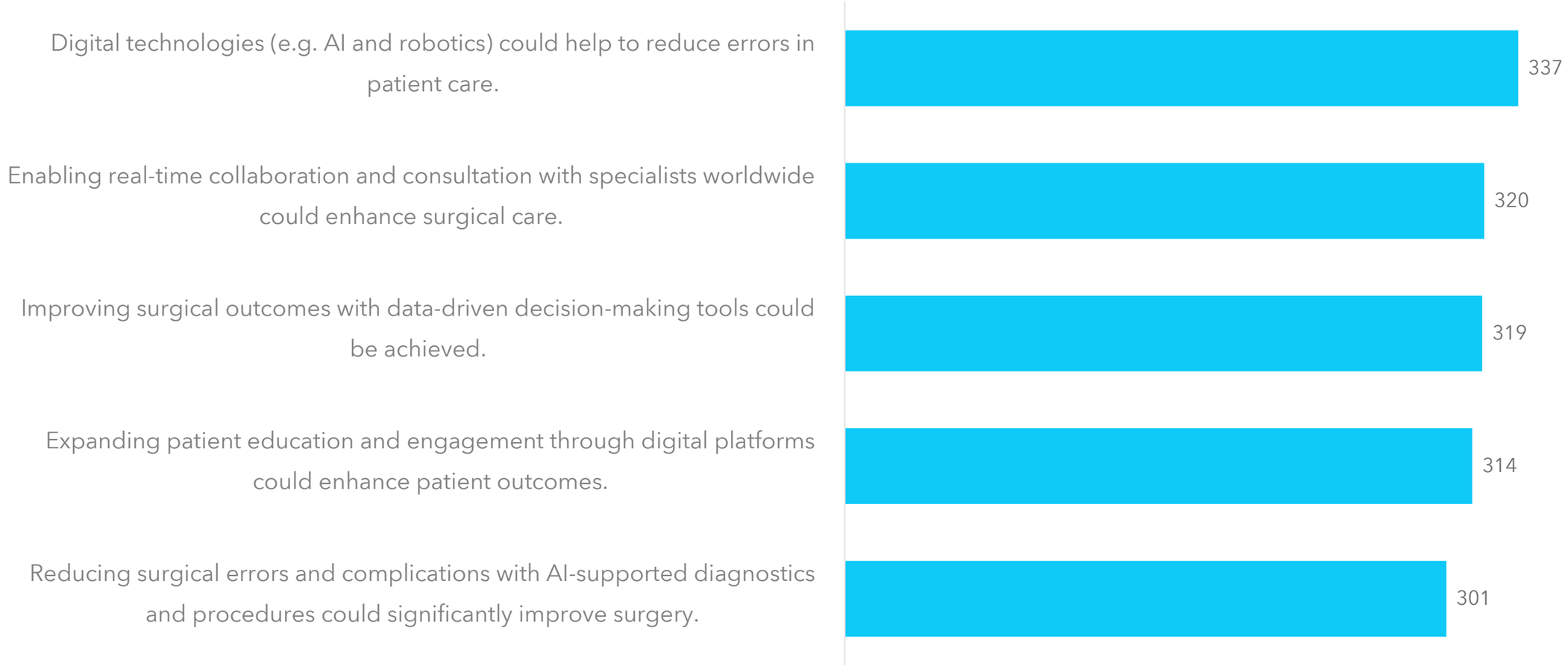
How digital technologies can improve the state of surgery

How, if in any way, could digital technologies improve the state of surgery in the U.S.? (Tick all that apply)

Top 5 most popular chosen solutions



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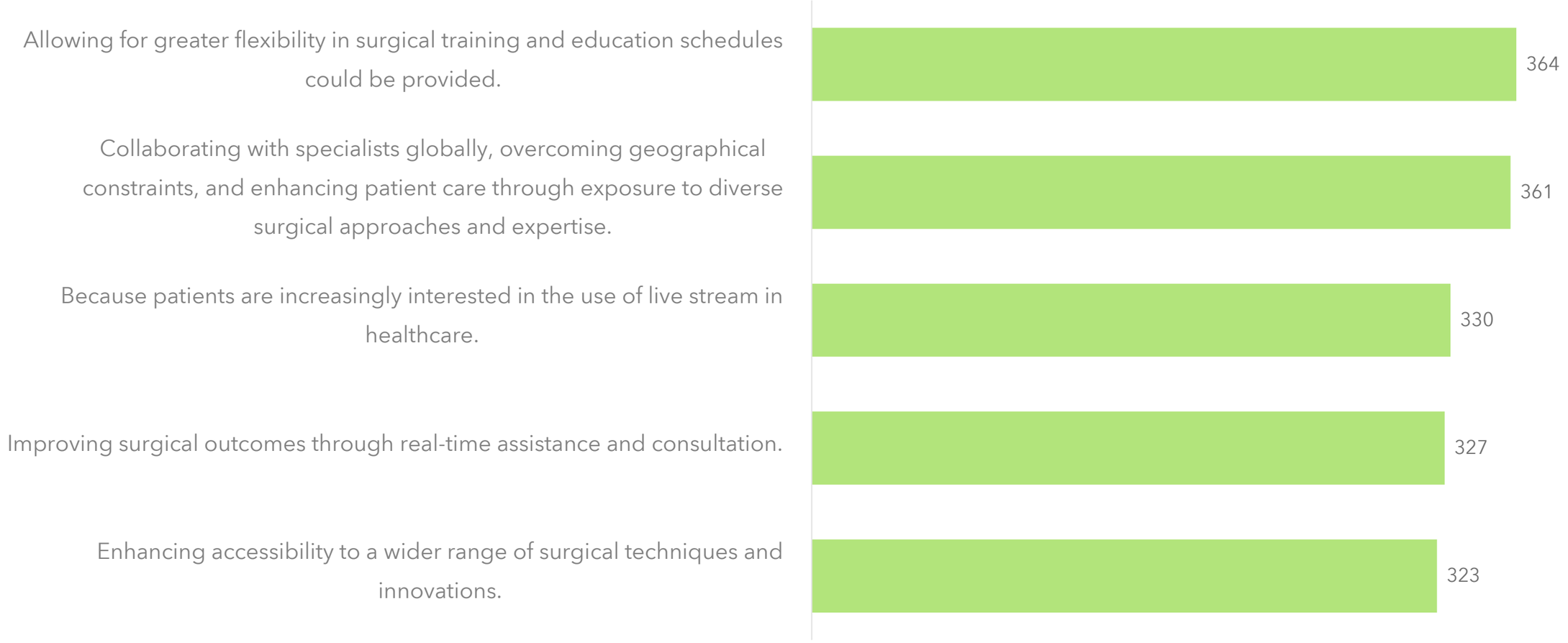
The use cases for remote/ live stream surgical technology

Which of the following statements, if any, do you think apply to how you would use remote/live-stream surgical technology in your practice?

Top 5 most popular use cases for live stream



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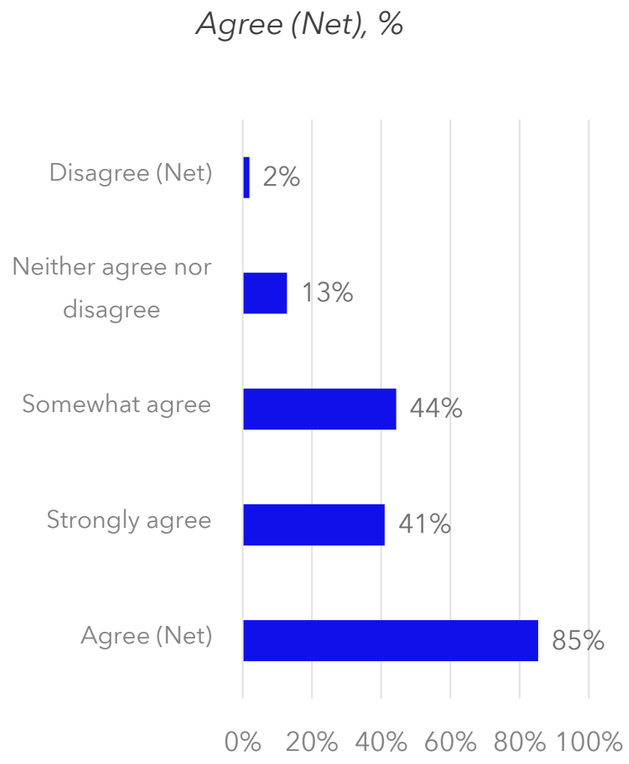
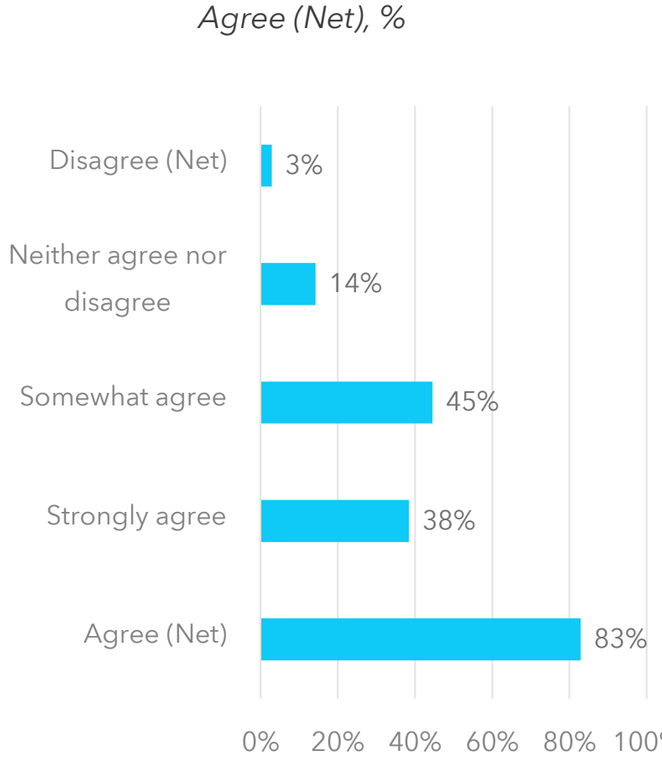
The potential benefits of digital technologies in surgery globally

To what extent do you agree or disagree with the following statements regarding the potential benefits of digital technologies in surgery globally?

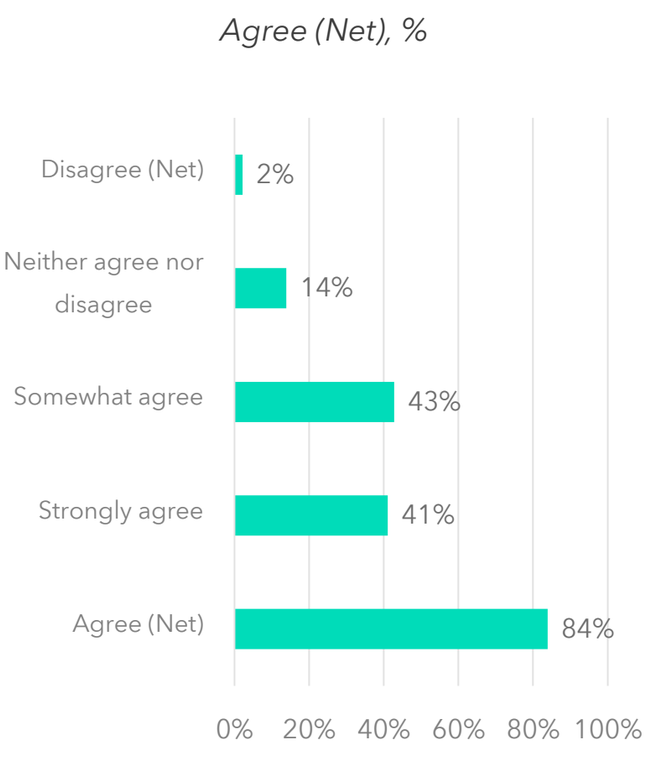
Virtual reality simulations could enhance surgical training by making it accessible worldwide.



Sharing surgical best practices and innovations through global digital networks could improve surgery.



Digital platforms could increase collaborative research and development opportunities.



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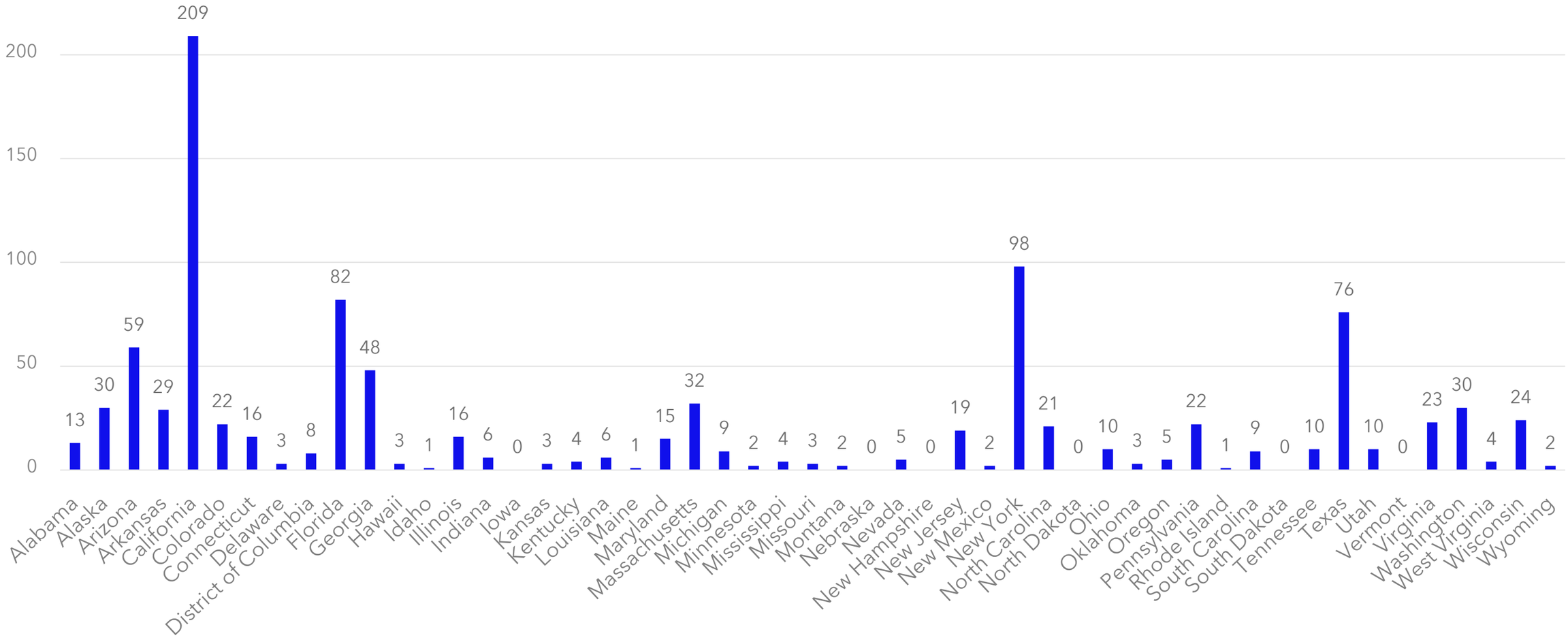
Breakdown of surgeon locations – by state



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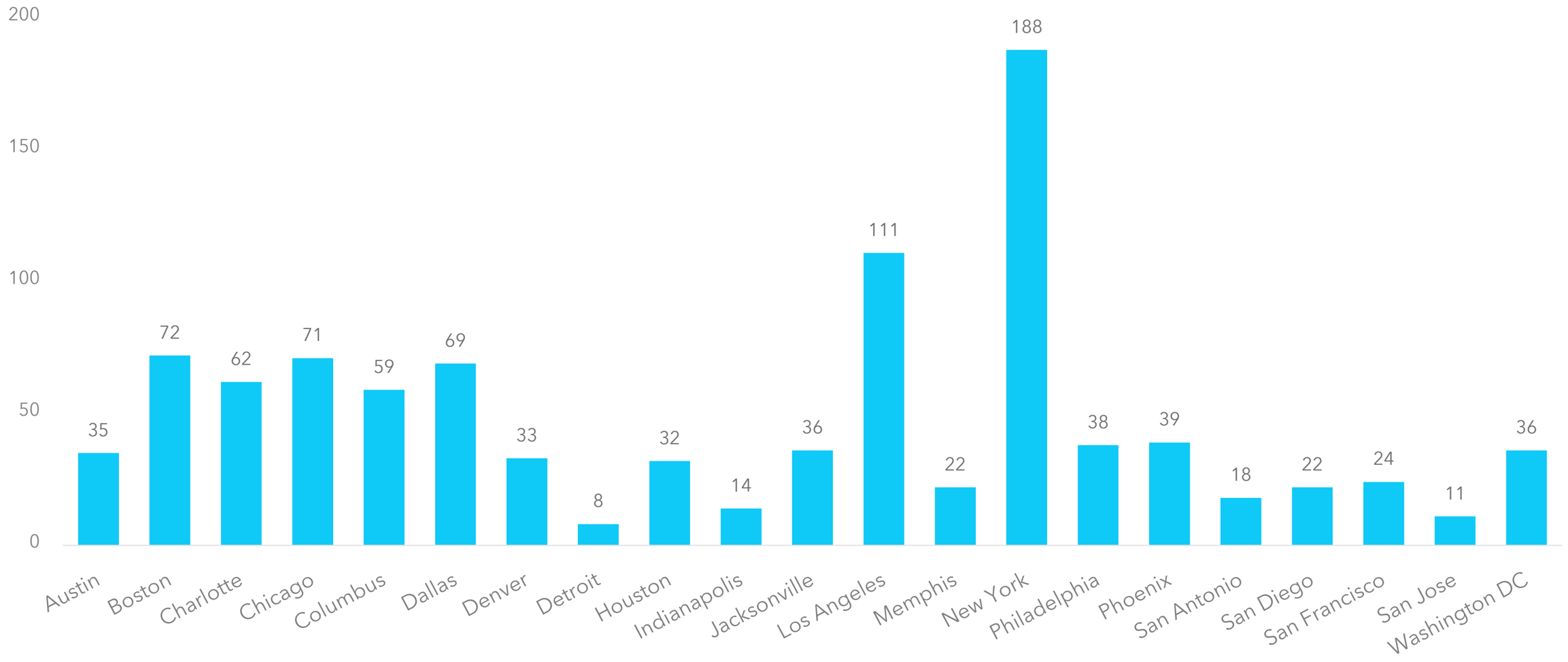
Breakdown of surgeon locations – by city



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Respondent demographics

SURGEON COUNT: REGION

Region	Count
Midwest	73
Northeast	189
South	358
West	380

SURGEON COUNT: PRIVATE/PUBLIC

Public or private practice	Count
Public	400
Private	600

SURGEON COUNT: LENGTH OF SERVICE

Length of service	Count
Under a year	4
1-5 years	115
6-10 years	574
11-15 years	266
16-20 years	39
Over 20 years	2

SURGEON COUNT: AREA OF PRACTICE

Area of practice	Count
Cardiothoracic surgery	125
General surgery	484
Neurosurgery	275
Obstetrics & gynaecology	140
Oral maxillofacial surgery	65
Otorhinolaryngology (ENT) surgery	32
Paediatric surgery	59
Plastic surgery	93
Trauma and orthopaedic surgery	58
Urology	41
Vascular surgery	26

About Medtronic

Bold thinking. Bolder actions. We are Medtronic. Medtronic plc, headquartered in Dublin, Ireland, is the leading global healthcare technology company that boldly attacks the most challenging health problems facing humanity by searching out and finding solutions. Our Mission — to alleviate pain, restore health, and extend life — unites a global team of 90,000+ passionate people across 150 countries. Our technologies and therapies treat 70 health conditions and include cardiac devices, surgical robotics, insulin pumps, surgical tools, patient monitoring systems, and more. Powered by our diverse knowledge, insatiable curiosity, and desire to help all those who need it, we deliver innovative technologies that transform the lives of two people every second, every hour, every day. Expect more from us as we empower insight-driven care, experiences that put people first, and better outcomes for our world. In everything we do, we are engineering the extraordinary. For more information on Medtronic (NYSE:MDT), visit www.Medtronic.com and follow @Medtronic on Twitter and LinkedIn.

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For survey data, data summary and media assets, please visit [URL].

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