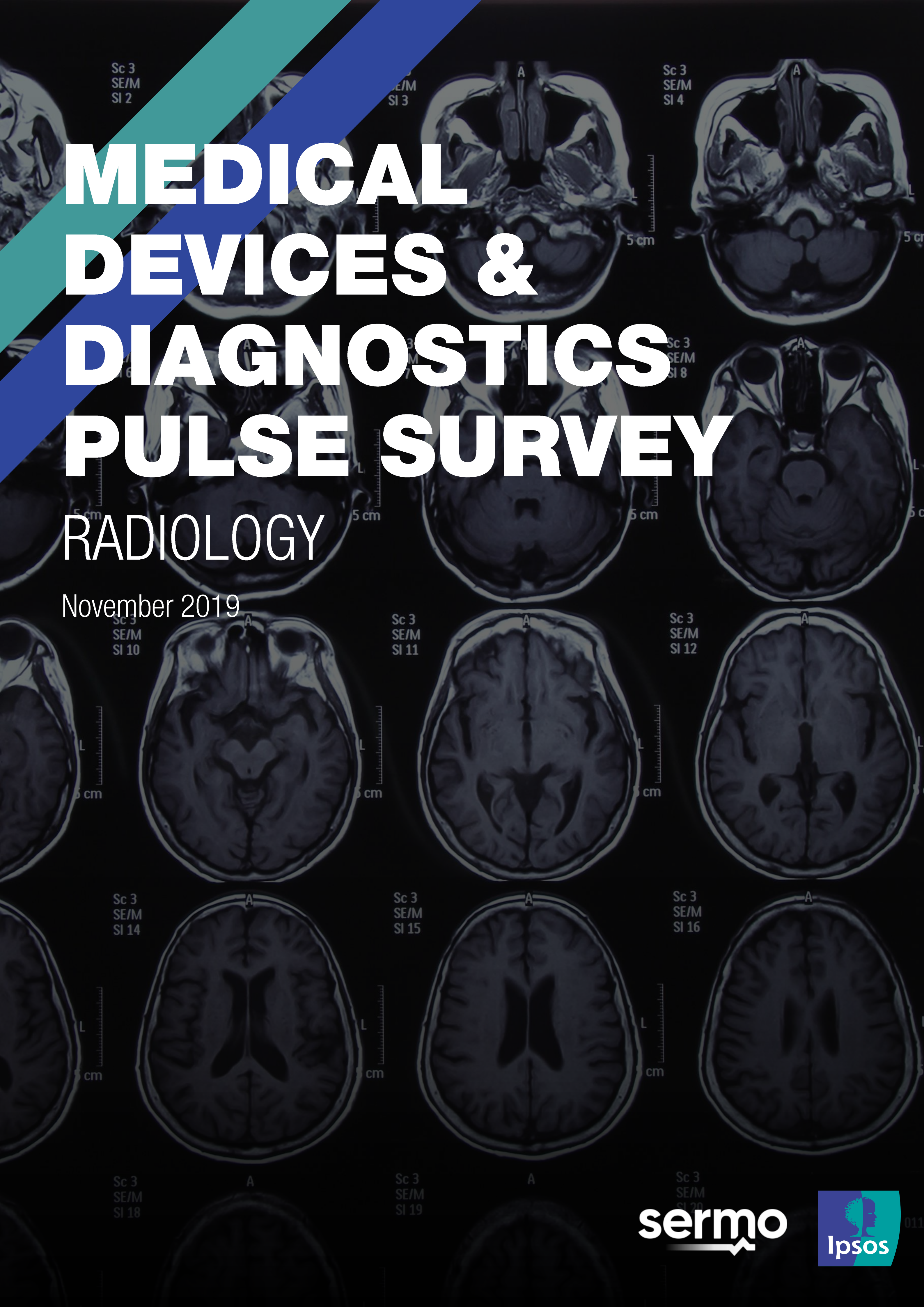


MEDICAL DEVICES & DIAGNOSTICS PULSE SURVEY

RADIOLOGY

November 2019

sermo
Ipsos

MD&D Pulse Survey

RADIOLOGY NOVEMBER 2019

sermo Ipsos

USA EUROPE CHINA

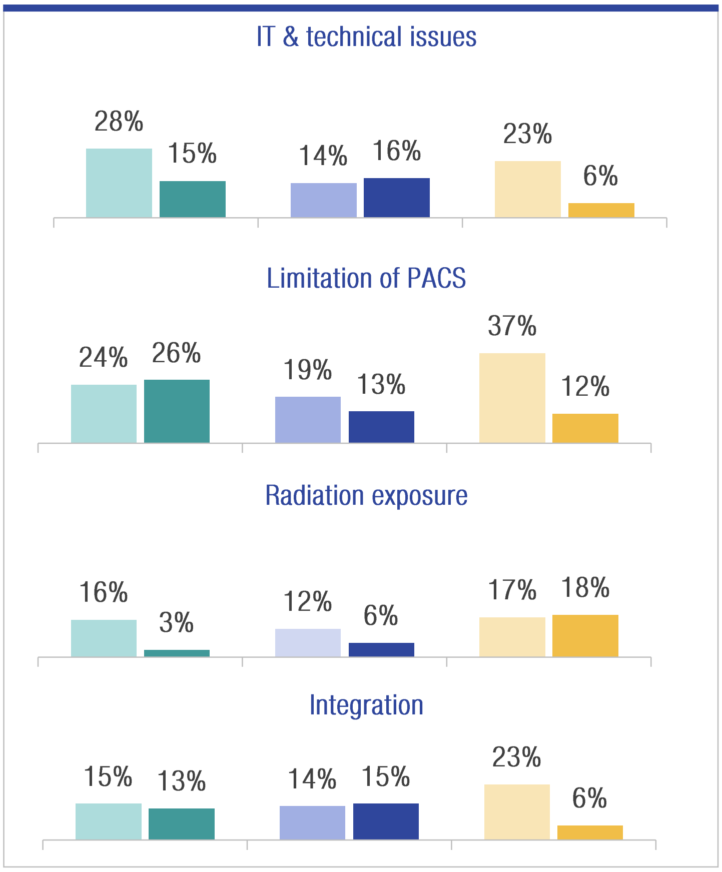
What are the current challenges faced by Radiologists?

Key findings: Patient volumes and long working hours remain the biggest challenges in all regions. Admin workload is also still an issue in US & EU. Importantly, we see a drop in IT & technical issues, limitations of PACS and integration concerns, especially in China, which is readily embracing new technology. Technical support from manufacturers and access to training are not seen as challenges.

% 2017 research % 2019 Research

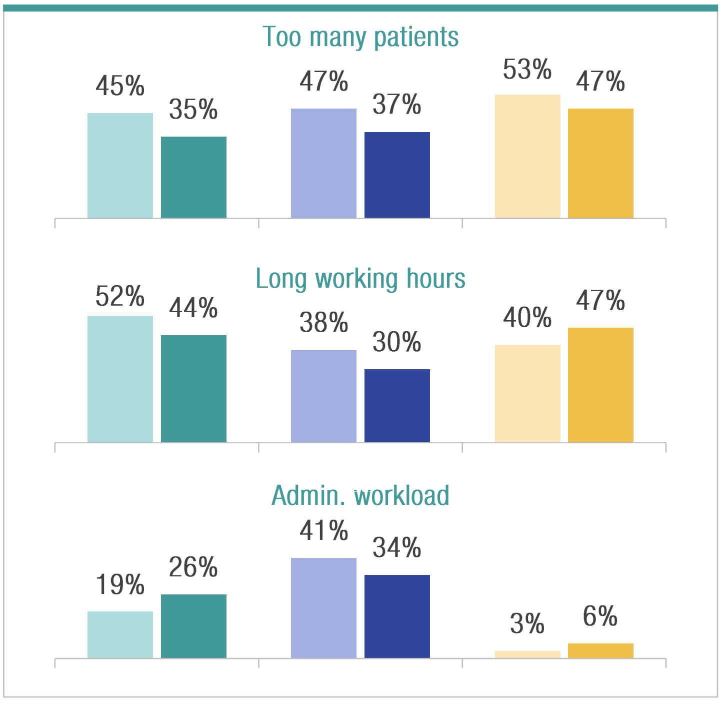
Resolved challenges – especially in China & US

Issues in 2017 but not in 2019

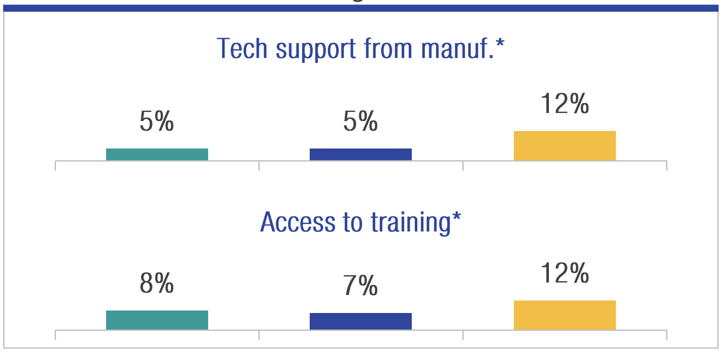


Consistent challenges – yet most are decreasing

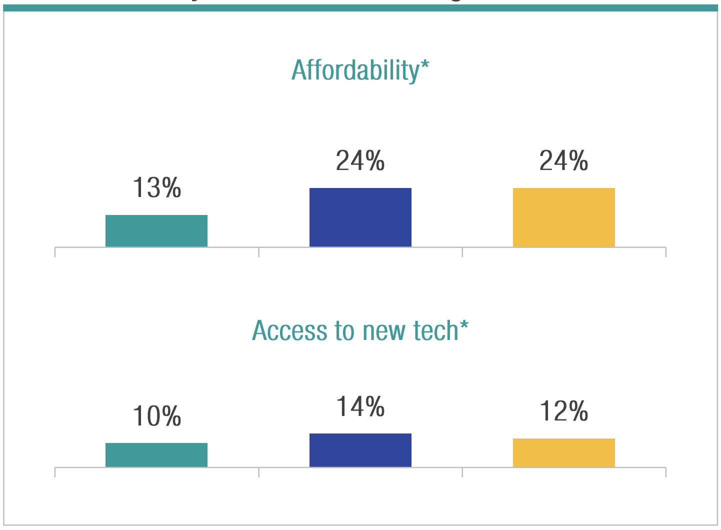
Main issues in 2017 & 2019



Non-challenges – *in 2019*



Newly added, mild challenges *in 2019*



Respondents were asked to rank 11 prelisted challenges in order: 1 being the biggest challenge, 2 the second biggest, etc.

Data shows percentage of respondents ranking the challenge 1st or 2nd place (xx%)

* New challenges added in 2019

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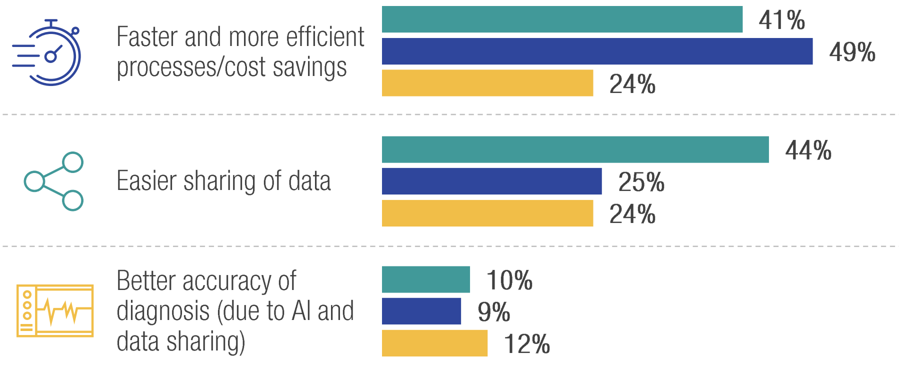
What is the perceived impact of Digitalization? (in 5 years)*



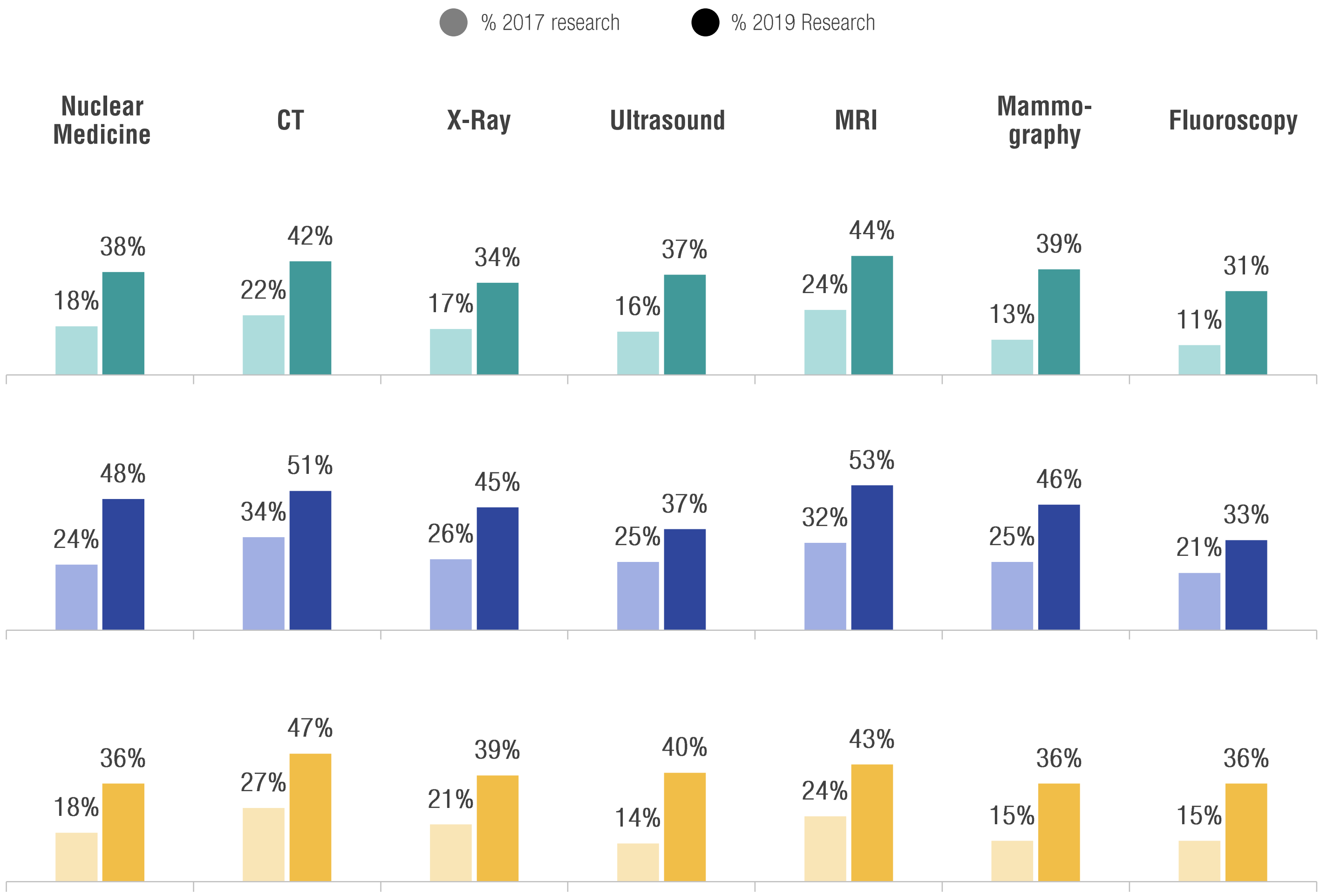
*Question was open ended

KEY FINDINGS

Overall, most **radiologists are positive about the future of digitalization,** with many anticipating better accuracy of diagnosis, easier sharing of data and a more efficient and ultimately **"better" service for patients**. A minority raised challenges such as the need for more data storage, lack of data security and the potential loss of radiologist jobs.

How much post-imaging analysis is done in the cloud?

Key findings: Radiologists foresee that the amount of cloud-based post imaging processing/analysis will approximately double over the next five years. Future cloud-based post image processing/analysis is highest for CT and MRI scans in all markets



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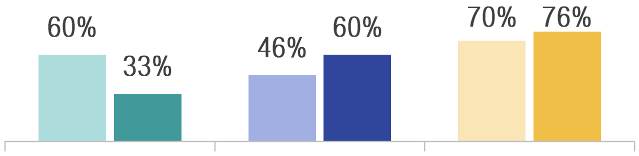
Which vendor capabilities are most important when deploying a cloud-based clinical application?

Key findings: Given the prevalence of global data security breaches, it is no surprise that '"Defence in depth" security programmes is regarded as the most important capability in the EU and China. In the USA however, in 2019 the most important capability is "multitenancy."

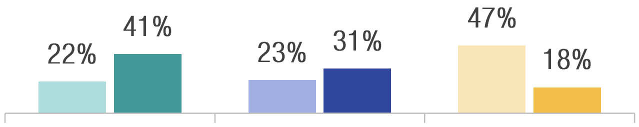
% 2017 research % 2019 Research

Consistently highly required capabilities
Highly important in 2017 & 2019

Defence in depth security

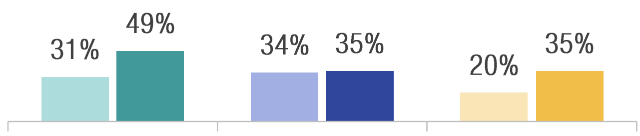


Service level agreement

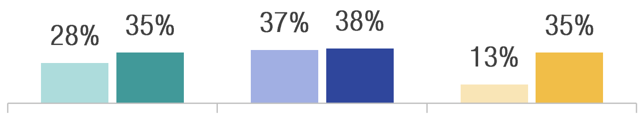


Increasingly important requirements
Ranked more highly in 2019 as in 2017

Multitenancy

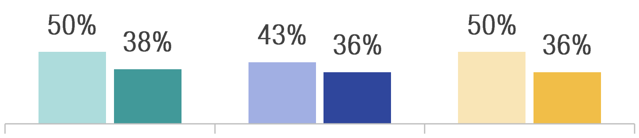


Try before you buy

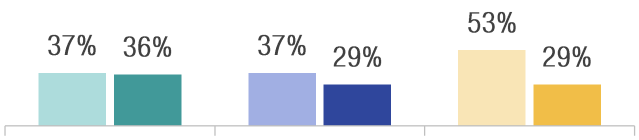


Important Capabilities; but less so now than in 2017
Ranked high in 2017 but not in 2019

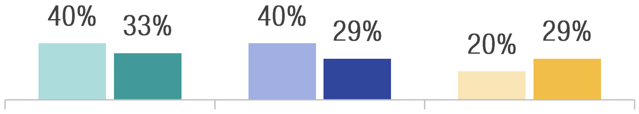
Storage management



Comprehensive disaster recovery plan

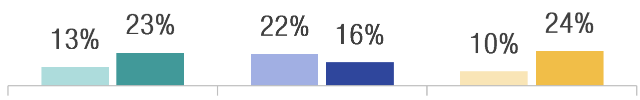


Vendor accountability

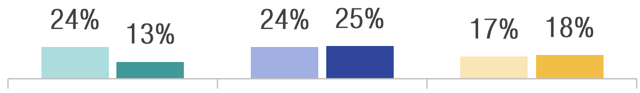


Not a requirement – in 2017 or 2019

KPI dashboard



Ability to configure by business



*Respondents were asked to rank nine prelisted capabilities in order from 1 to 5 (with 1 being the most important, 2 the second most important, etc. Figures show the combined percentage of those ranking the capability 1st, 2nd or 3rd.

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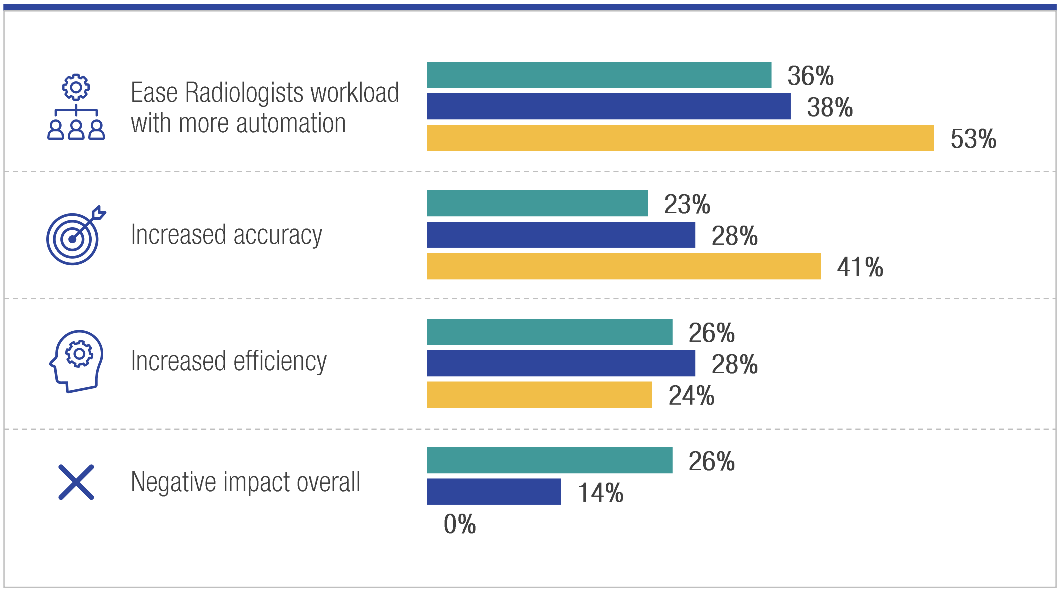
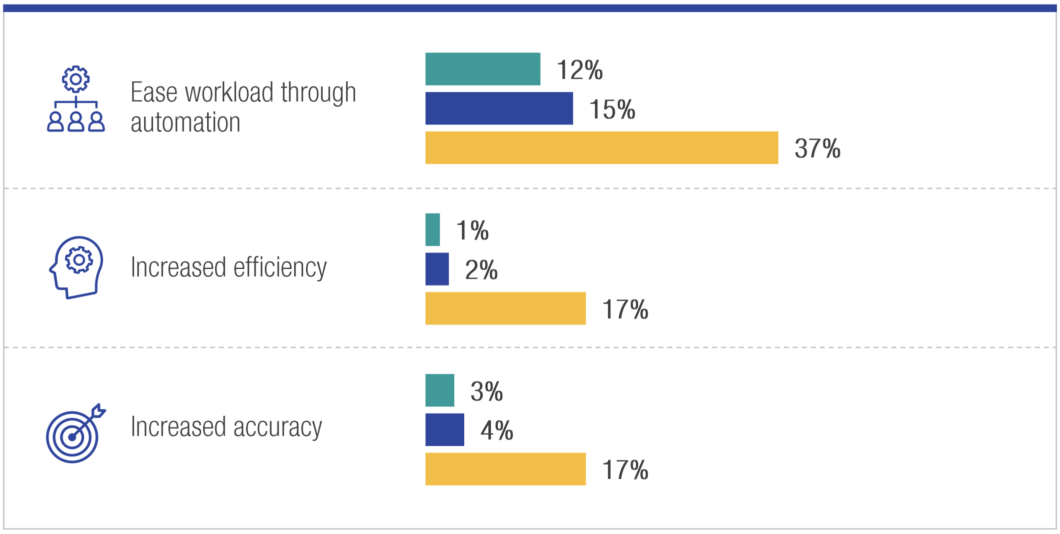
USA EUROPE CHINA

What is the perceived impact of Artificial Intelligence? (in 5 years)*

2019 Opinions



2017 Opinions



Key findings: More radiologists believe that AI will have a significant, mainly positive impact, now than they did in 2017 – with significant increases in those anticipating that advances in AI will ease the burden of reviewing scans, increase the accuracy of diagnoses and accelerate workflow. China is most receptive to using AI (seeing no negative impact) and the US the least receptive. Some radiologists in the US are concerned about an increased level of false positives, the lack of human involvement in scan review and potential job losses/ reduced income.

KEY FINDINGS FOR THE FUTURE OF DECISION MAKING (IN 5 YEARS TIME)

Within the next 5 years many radiologists expect clinical decision making to be improved (more accurate, easier, faster) with the advent of AI (especially true in China). In addition, the increased automation of scan reviews will potentially challenge the traditional role of the radiologist and some perceive their role changing to become more specialized or more patient centric.

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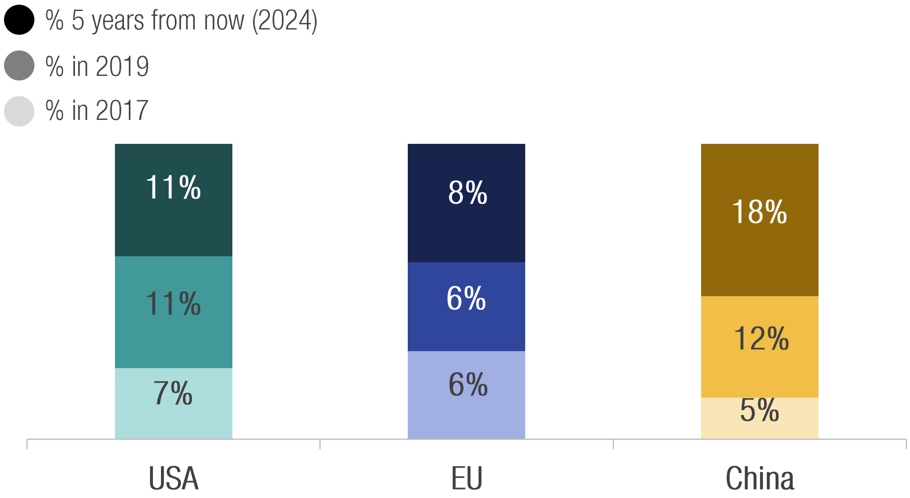
How many MRIs are performed under general anaesthesia?

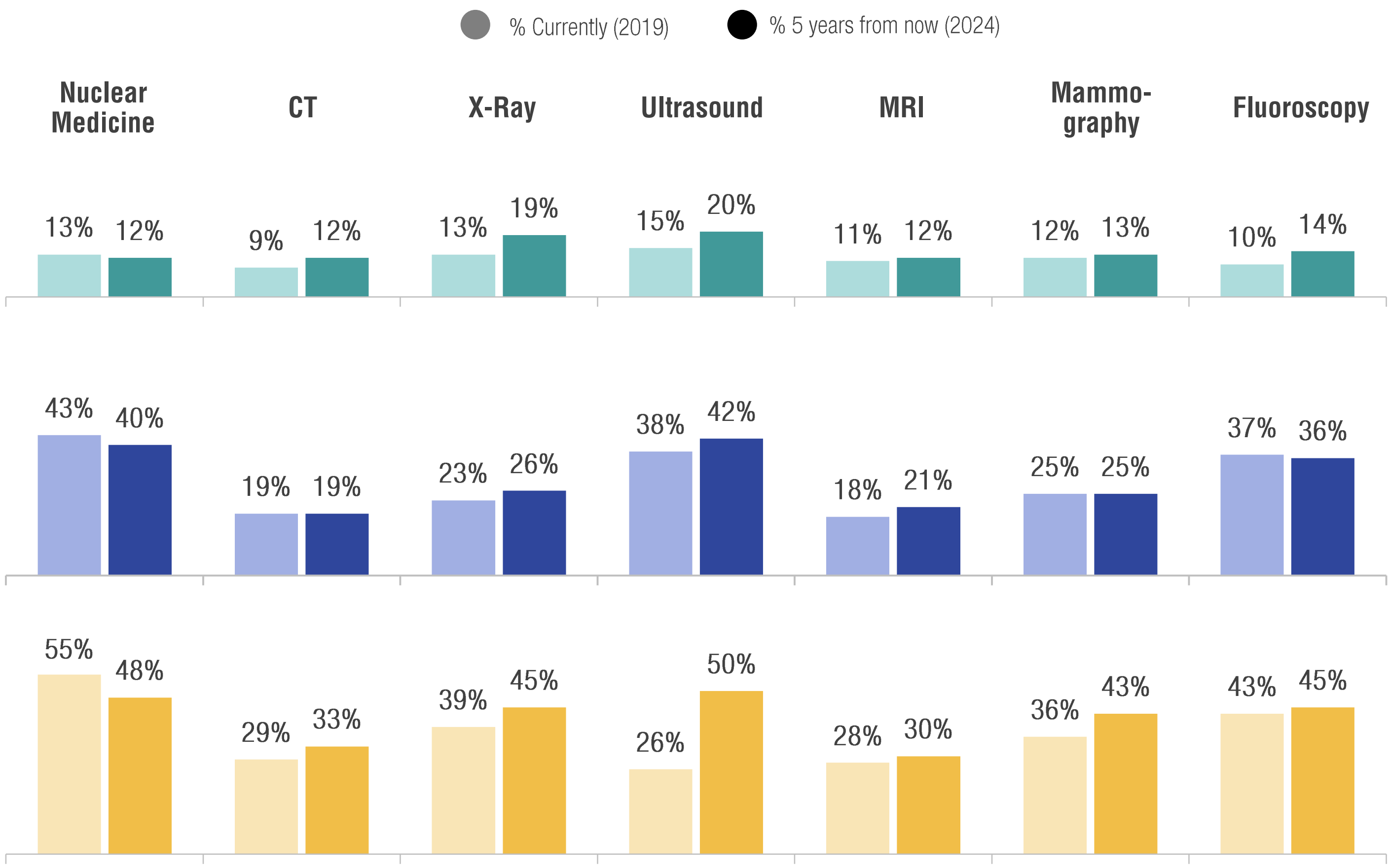


KEY FINDINGS

China sees the largest expected increase in MRIs conducted under general anaesthesia – US sees no increase and the EU very little increase.
In order to facilitate this growth, radiologists in in China foresee hospitals more than **doubling the number of MR compatible anaesthesia machines over the next five years.**

How many scans are being read/conducted by non-radiology specialists?

Key findings: Not much change expected in non-radiologist reading of scans over the next five years. The proportion of non-radiologists reading/imaging is higher in the EU and China than in the US and they are most commonly handling Nuclear Medicine, Ultrasound and Fluoroscopy in those markets.



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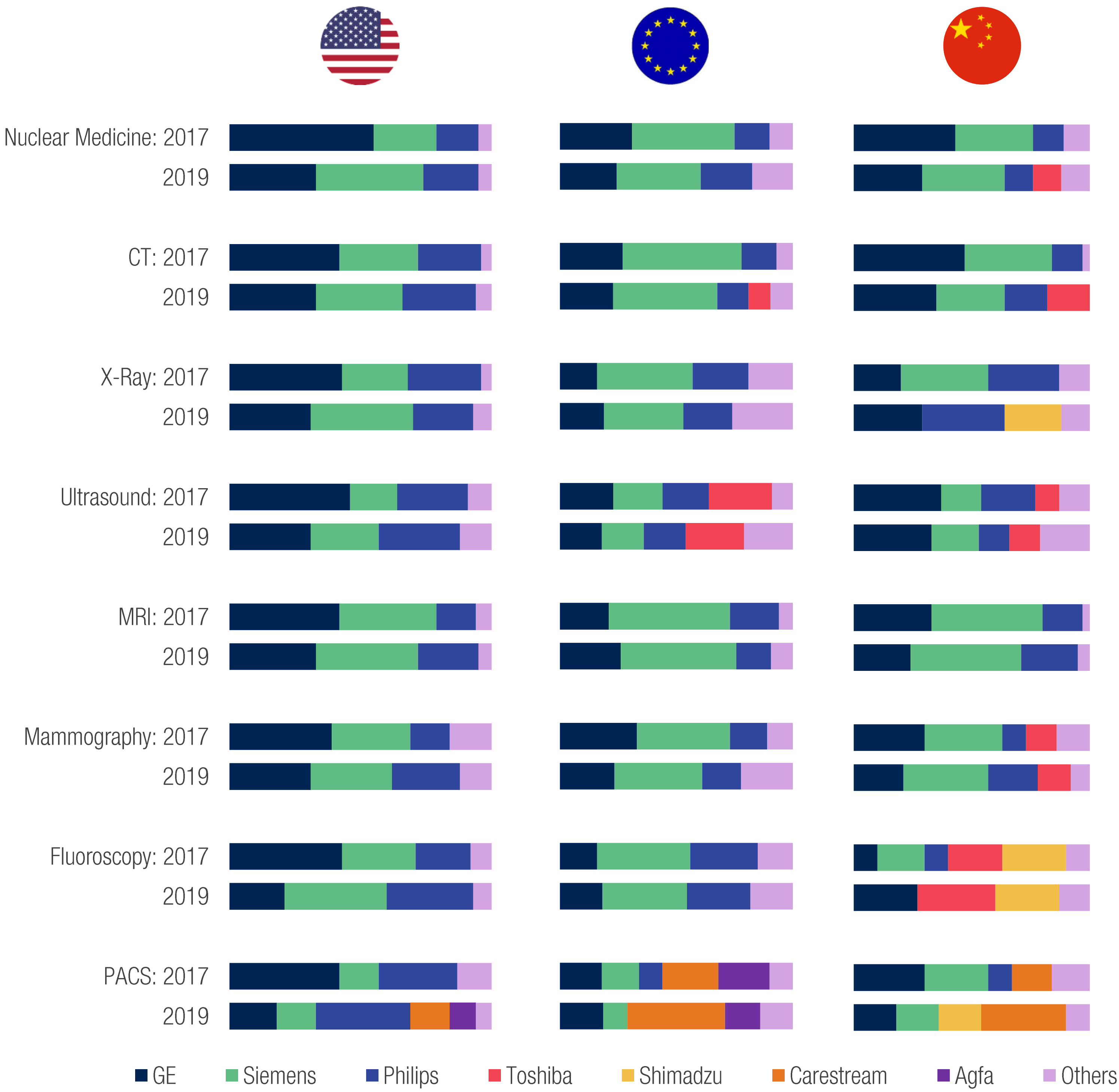
Who is the most innovative manufacturer in Radiology?

Key findings: GE, Siemens and Philips dominate the 'most innovative manufacturer' across most categories. GE is especially respected in the US, although its reputation is dropping compared to Siemens. Siemens has a particularly innovative reputation in EU. Carestream has now emerged as the leader for PACS, in Europe and China. Toshiba continues to be well known for ultrasound in EU and fluoroscopy in China.



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Expertise plus execution to deliver results

Ipsos' healthcare team partners with pharmaceutical, biotech, medical device and technology organisations to inspire better healthcare

From strategic research & consulting through commercial execution

- Assess portfolio & asset opportunities
- Demonstrate value & create market access
- Bring products to market faster & more successfully
- Gain insight to drive better commercial performance
- Leverage commercial infrastructure
- Better communicate with & understand customers

For more information on MD&D market research and data from this survey, please contact us at:

medtech@ipsos.com

Or visit our microsite:

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Expertise across the product lifecycle

Operating in over 50 countries, our 1000+ healthcare experts support key business decisions for our clients throughout the commercial lifecycle – from early-stage strategy, through to product launch and performance optimisation. We do this through a uniquely integrated combination of therapeutic, market, analytical and commercial expertise, as well as gold standard, proprietary real-world evidence.

Early development

Market mapping/ landscaping

- Assessment of unmet needs
- Regulatory environment
- Competitor landscape
- Current practice
- Patient pathways

Opportunity assessment & Identification

- Market sizing & forecasting
- Market segmentation

Late development

New product design & development

- Innovation workshops with R&D, marketing & customers to generate new ideas
- Fine-tuning existing concepts

Concept testing

- Pricing & value assessment
- Human factors/ usability testing
- Conjoint analysis of best features/ value per feature

Launch

Launch strategy

- Message/positioning testing
- Price optimisation
- Value proposition /story refinement
- Engagement strategies
- Preferred marketing channels
- Target identification

Post-launch

Brand health tracking

- Advertising and messaging effectiveness
- Brand equity
- Sales force effectiveness
- Awareness & usage

Customer experience/ satisfaction

- Customer loyalty
- Value optimisation strategies

Portfolio management

Next-gen/upgrade strategies

- Assessment of unmet needs
- Identification of gaps in a portfolio

Portfolio (merger) management

- Optimisation of existing portfolio
- Risk of cannibalisation of new product design or merging of two company portfolios
- Rebranding effect in case of company mergers

How can SERMO RealTime benefit my business?

- SERMO RealTime (a digital HCP-only rapid research tool) provides a valuable add-on to traditional research methods to gather almost instant and affordable insights in today's fast-paced environment.
- SERMO RealTime can be used for multiple purposes, including:
  - refining an upcoming study design
  - supporting ongoing business decisions
  - checking on brand messaging and/or visuals
  - tracking market trends
  - analysing general sentiment pre- and post-campaign
  - supporting a workshop discussion

How does it work?

- Questionnaires can be scripted & launched in 24-48 hrs (upper band for translations).
- Depending on the target sample respondent & size, surveys can be in field for 1-5 days **76% of all pulse surveys complete in under 5 hours.**
- Questions are fielded online to a global panel of 1.8 million HCPs, covering 40+ specialities from 30 countries, including: US, Europe (15 markets), Mexico, Brazil, Argentina, Turkey, Russia and APAC (seven markets).
- Target lists can also be uploaded and panel matched.
- Raw data is provided instantly in Excel, and in one to three days in PowerPoint.
- Surveys can have up to **10 questions** with two optional screener questions.

SERMO – A leading global social network for physicians, where close to 800,000 fully-verified and licensed physicians from more than 150 countries talk real-world medicine, review what peers think of different treatment options – including ratings and comments on prescription drugs – collectively solve cases, respond to healthcare polls and earn honorarium from surveys. In 17 years, SERMO has become the world's largest healthcare professional (HCP) polling company.
The SERMO research network is comprised of 1.8 million HCPs and includes 40 percent of the US physician population. Most of the 700,000 surveys SERMO conducts annually are among specialist physicians – over 70 percent of physician members are specialists.