

A professional photograph of a female healthcare provider, likely a radiologist or technician, wearing a white lab coat over blue scrubs. She has blonde hair and is looking down at a patient's shoulder, which is visible in the foreground. The background is a clinical setting with warm lighting.

PHILIPS

Research report

Enhancing the patient experience of imaging

A survey of patient responses to recent imaging procedures

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Background

Patients who feel comfortable and secure are less likely to engage in behaviors that compromise the quality of their imaging study. That makes it easier for staff to acquire high-quality images and radiologists to accurately interpret them.

Whether a routine or acute situation, patient anxiety and discomfort throughout the diagnostic imaging process can significantly impact its outcome. From stress-related movement that can impede high-value, completed scans in MRI¹ to the physiological effects of stress on image acquisition in PET-CT², the patient experience must be a key consideration in pursuing better imaging quality and more efficient imaging service metrics.

With this in mind, Philips is focused on a research-based approach to innovation that prioritizes the people behind the images. The following study was conducted with the aim of gleaning insights that can help reduce systemic, imaging-related patient stress for a better experience and better imaging outcomes.

Research overview

In a double-blind study conducted in the summer of 2017, our research partner surveyed 603 patients in the U.S. and Germany about their recent³ diagnostic imaging experience.

Through both qualitative and quantitative research methods, the study assessed patient impressions across the entire imaging experience, from referral through diagnosis or follow up. Survey questions measured their satisfaction, expectations, feelings, preferences and unmet needs for medical imaging.

Project details: The Patient Experience in Imaging Study was conducted in the summer of 2017 by Kantar TNS, in the Netherlands per order of Philips. It was based on prior qualitative research conducted in April-May 2017. N=603. USA=297; GER=306. Interviews were approximately 25 minutes. US Male=138; US Female=159. GER Male=163; GER Female=143. Ages 18-25: US=13, GER=21. Ages 26-59: US=105, GER=136. Ages 60+: US=179, GER=149. The project team included Pascal van der Giessen and Maartje van Diepen (Project Leads) and Pieteke Dijkstra and Katja Fieguth.

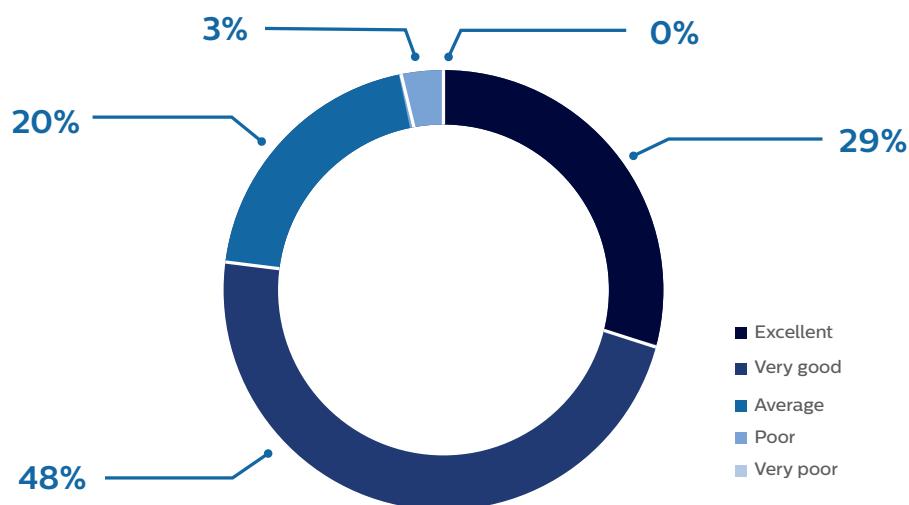
Summary of findings

I. Patient experience and satisfaction

When first asked to evaluate the overall experience of their last diagnostic procedure⁴, study participants were generally very satisfied.

In rating their overall experience, from referral through to follow up, 77% said it was very good or excellent.

Overall experience last diagnostic imaging (DXR, AMI, CT, MR) procedure taking into account all steps



Many respondents described how they felt about their imaging experience using words such as “easy”, “efficient”, “professional” and “routine.”

Kantar word map of terms that come to mind first to describe patients' last imaging procedure. U.S. respondents (N=297)⁵



In particular, patients indicated relatively high levels of satisfaction regarding the earliest phase of imaging.

Percentages indicate ratings of **very high or excellent**.

82%

Referral by
doctor/specialist

78%

Diagnostic
imaging center/
facility

However, when patients were asked about their experience of subsequent phases of the imaging process, they were somewhat more critical.

Percentages indicate ratings of **average to very poor**.

23%

Exam preparation

25%

During the scan

27%

Diagnosis
and follow-up



Voice of the patient: When asked if they could change one thing about their imaging experience, many of the respondents said they want to get the results quicker, with **less waiting time to have imaging procedure scheduled** and less time between test and result as primary areas to improve their overall experience.

Some patients stated that the one thing they would change is **reduce the length of time of the actual exam** or “make the scan go quicker” in addition to make it more comfortable, less noisy and provide the option of a headset or listening to music.

A few said **more detailed information** during preparations and **more compassion from the on-site technical staff** at the imaging facility are top unmet needs. According to some, the “nurses were not very sympathetic” and they wished interactions with staff were “more professional, and used less scary words” to reduce anxiety.

Implication

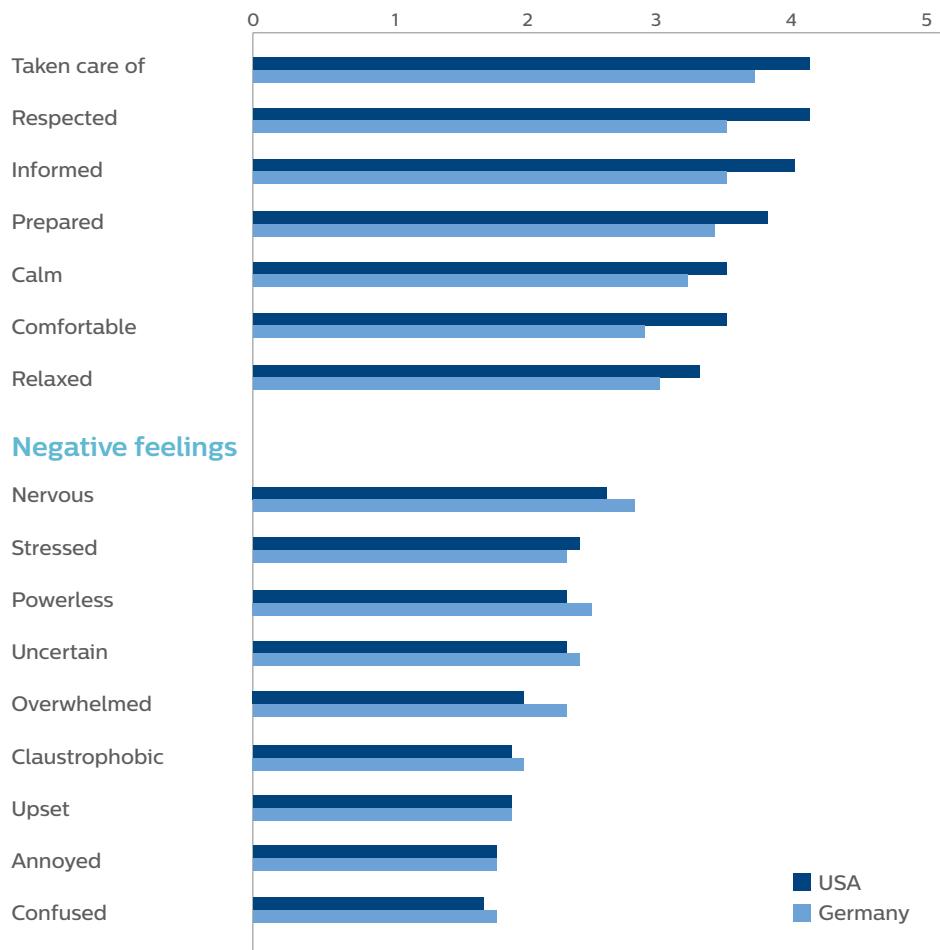
Patients are highly satisfied with the diagnostic imaging process and very confident in their referring physician and imaging facility. However, in the parts of the exam that are most critical to getting a quality exam outcome (i.e., pre-scan preparation and the procedure itself), patients were less satisfied with the level of support. Imaging services need to continue to focus on patient-centricity to safeguard the general positive experience of patients while addressing their specific concerns about exam preparation, procedure and follow-up.

II. Patient feelings

Patients described experiencing a broad range of feelings, both positive and negative, throughout the imaging process.

While most expressed feelings of being well taken care of, respected and informed, many also cited feelings of nervousness, uncertainty and powerlessness. It is interesting to note that U.S. respondents shared more positive feelings, while German responses were slightly more negative.

Positive feelings



Participant responses to the question, "What feelings did you encounter during the complete process of imaging procedure from begin to end (from referral to diagnosis or follow up)?" Chart shows mean score of 603 respondents who selected on a scale from (1) "not at all" to (5) "extremely."



Voice of the patient: Individual responses ranged from “comfortable, calm, nice technician” to “uneventful...pleasant” to “long, tedious, nerve-wracking, but successful” to “scary and painful.”

Implication

It's important to note that respondents' positive and negative feelings are not mutually exclusive. Patients can feel both well taken care of and overwhelmed at various points in the process. While respondents indicated general confidence in their care, imaging services need to be tuned in to patients' feelings at every stage. The opportunity to deliver greater assurance, comfort and emotional support for patients exists – and can differentiate good service from great service.

III. Unmet patient needs

In the qualitative phase of the study (N=16), researchers identified the overarching categories of **Communication** and **Comfort** needs as those of highest importance to patients. Quantitative results confirmed those findings in more detail.



Despite the variety of factors influencing the experience, these core needs are found across all stages of the patient journey.

Respondents' priorities to improve the patient experience fall into **four levels of needs**, ranging from practical to emotional. In their unstructured feedback, patients often provided detailed commentary on specific aspects of the process that affected them personally. Below are the highest rated specific needs. (See [Appendix](#) for complete list of prioritized patient needs aligned to Communication and Comfort.)



Basic customer service

Imaging patients expect a level of customer service that lets them know that they – and their time – are respected.

Percentages indicate ratings of **very important** or **extremely important**.

61%

Minimal wait time
to get my procedure
scheduled

55%

A timely alert of
relevant changes prior
to my procedure

53%

Minimal time in the
waiting room prior to
the exam

58%

Minimal wait time to
receive results



Voice of the patient: “You failed to ask the most important question in MRI as well as overall healthcare – CUSTOMER SERVICE! Nowadays, CS stinks. Mostly, you have kids doing this without the knowledge of how to treat people, how to talk to the elderly...If I was management, I would train them in CS!”

Implication

Timeliness of scheduling and communication of results is a top concern for patients. Findings reflect their desire to have their time respected, to have results communicated as soon as possible, and to be assured that they are progressing efficiently on a path to treatment. With the rise of consumerism in healthcare – and as “digital natives” assume a larger part of the population – patients will expect the convenience and real-time mobile communications they have come to expect from other sectors such as travel and banking.



Essential information and communication

By far, patients' stated preference for communication prior to the procedure was for written (81%) and verbal (66%) instructions from their doctor. Additionally, they expressed the importance of being informed throughout subsequent phases of their procedure.

Percentages indicate ratings of **very important** or **extremely important**.

51%

Able to talk to the staff any time during the procedure

50%

Be continuously informed and proactively reminded of upcoming steps in my care between exams/procedures

49%

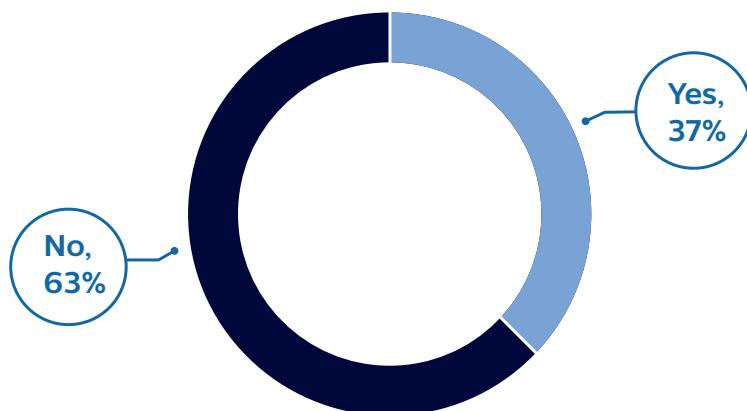
Access help at any time from the imaging staff before procedure

45%

Receive a detailed description of what I can expect to experience during the procedure beforehand

More than a third of patients indicated they sought out additional information about their imaging procedure in addition to the consult with their doctor.

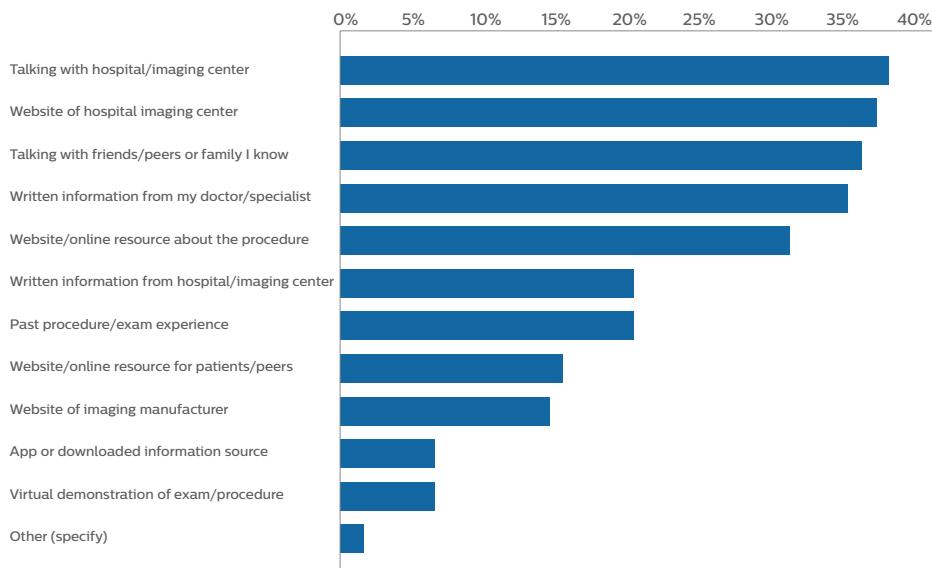
Did you seek information about the imaging procedure in addition to consulting your doctor/specialist?



Total Base N=603, USA All patients n=297, GER All patients n=306

For patients who sought information beyond that provided by their doctor, there were multiple preferred channels to access information.

Patients' preferred touchpoints in addition to their doctor



Based on question regarding what communications channels patients prefer to get information; percent who indicated sources used (n= 603).



Voice of the patient: “Constant reporting on how much further the procedure has to go so that anxiety does not build up is extremely important...The machines are built to do a job properly and mental prep for the tube is essential.”

Implication

Patients have a strong need for trustworthy information and communication throughout the entire imaging process. The type of communication and information and the way they wish to receive it varies depending on where they are in the process. Access to information matters, and multiple channel approaches will deliver higher patient engagement.

Once patients are in the imaging facility, they expect ready and open communication and face-to-face staff interactions. The value of frequent and ongoing communication by caring staff cannot be overstated.



Assurance of safety and comfort

Imaging patients seek safety and well-being throughout the imaging process and value speed and comfort during the procedure itself.

Percentages indicate ratings of **very important** or **extremely important**.

69%

Effective scan
with minimal dose

61%

Accurate scan in
least amount of
time to reduce
physical discomfort

58%

During the procedure,
I want to feel my
personal belongings
and I are safe



Voice of the patient: “The patient is not a digit but a human being with emotions and mostly fear and intimidation. Consider that when designing the machines that are supposed to help care for the human.”

Implication

Patients' top priority (most notably among German respondents) was minimizing exposure to harmful radiation and contrast agents injected as part of the exam. This underscores the need to educate patients about fundamental imaging facts as well as advances in dose reduction and dose management systems. Patients' second highest concern was for their physical comfort during the procedure, balanced by a desire to get an accurate scan in the least amount of time.



Trust and confidence

Patients' trust and confidence in their imaging procedure is based on many factors, but the need to trust their referring doctor and imaging staff is preeminent among them.

Percentages indicate ratings of **very important** or **extremely important**.

71%

It's important that I trust my referring doctor

67%

I want the right image the first time to reduce the need for repeat scans

54%

Proof of knowledgeable medical staff

Implication

Patients cite trust in the referring doctor as their most important trust-related need. Assurance that the first scan will be the right scan is a close second. What connects these two concerns – and what many patients don't realize – is that there are strict credentialing standards for radiology departments that require radiologists to "protocol" imaging study orders before patients arrive.*

Upon receipt by the imaging center, the radiology order is routinely reviewed by the right people to ensure they are getting the right exam with the appropriate modality at the right dose (where relevant) to answer the clinical question at hand. To build patient trust and confidence in their imaging journey, it's important to educate patients on the rigor of this process as well as the role radiologists play in these decisions prior to the scan.

Moreover, referring physicians can help patients by clearly communicating the details of the process. For example, many patients expect to get results in the radiology department immediately following their exam, which is usually not how it works. Spelling out clearly when and how patients can expect results is an important part of the dialogue.

*Standards may vary by institution and locale

Patients describe their imaging journey

Here are some of the patient comments Philips gathered in the unstructured survey feedback:

Referral	Scheduling	Intake	Procedure	Follow-up and diagnosis
 	  	  	    	   
<p>“</p> <p>Not sure why my doctor sent me”</p> <p>In an emergency situation, little is told”</p> <p>I would like written information before the procedure and an explanation from the imaging staff when getting ready for the procedure the day of”</p> <p>When I went they did the scan but didn't do all areas I wanted and I had to go back two months later and pay for another scan because they didn't do large enough area”</p>	<p>“</p> <p>[Wish it were] “easier to schedule on my terms”</p> <p>It was a lengthy process: week from diagnosis till MRI”</p> <p>I would have had it done much sooner”</p> <p>Insurance complications, rigmarole, ridiculous”</p>	<p>“</p> <p>Interminable waiting with but one chair”</p> <p>[Wish it was a] “warmer temperature in the waiting room”</p> <p>I wish the nurses/staff would be more compassionate”</p> <p>I wish they used less scary words”</p> <p>Wish I wasn't so nervous”</p> <p>Anxious at first, but reassured by good nurses”</p>	<p>“</p> <p>Had to keep perfectly still for 45 minutes”</p> <p>Request that the tech treat me more gently”</p> <p>I am a large person with horrible pain and it is almost impossible to be still and comfortable during an MRI”</p> <p>I felt I had to clear my throat and I was told I was moving. Got to the end but disappointed because it made my anxiety kick in”</p> <p>To not have to have such tight compression”</p> <p>...when they first put me in, they forgot to turn on the fan and I have COPD and I had a hard time controlling my breathing”</p>	<p>“</p> <p>Would have liked to know the results sooner”</p> <p>Takes too much time from test to find out results”</p> <p>Wondering how many more nodules they will uncover”</p> <p>Nerve-wracking, anxiety as I waited for outcome”</p> <p>I was not happy having to go through another MRI”</p>
<p>Patients want to be sure they're getting the right test for their condition. They also need to know what to expect.</p>	<p>Patients want to be scheduled as soon as possible. They desire convenience and respect for their time.</p>	<p>Patients want to engage with caring staff that will be responsive to their concerns prior to the procedure.</p>	<p>Patients want to get the procedure done as quickly, efficiently, safely and comfortably as possible.</p>	<p>Patients want to know results as soon as possible. They also really don't want to repeat scans.</p>

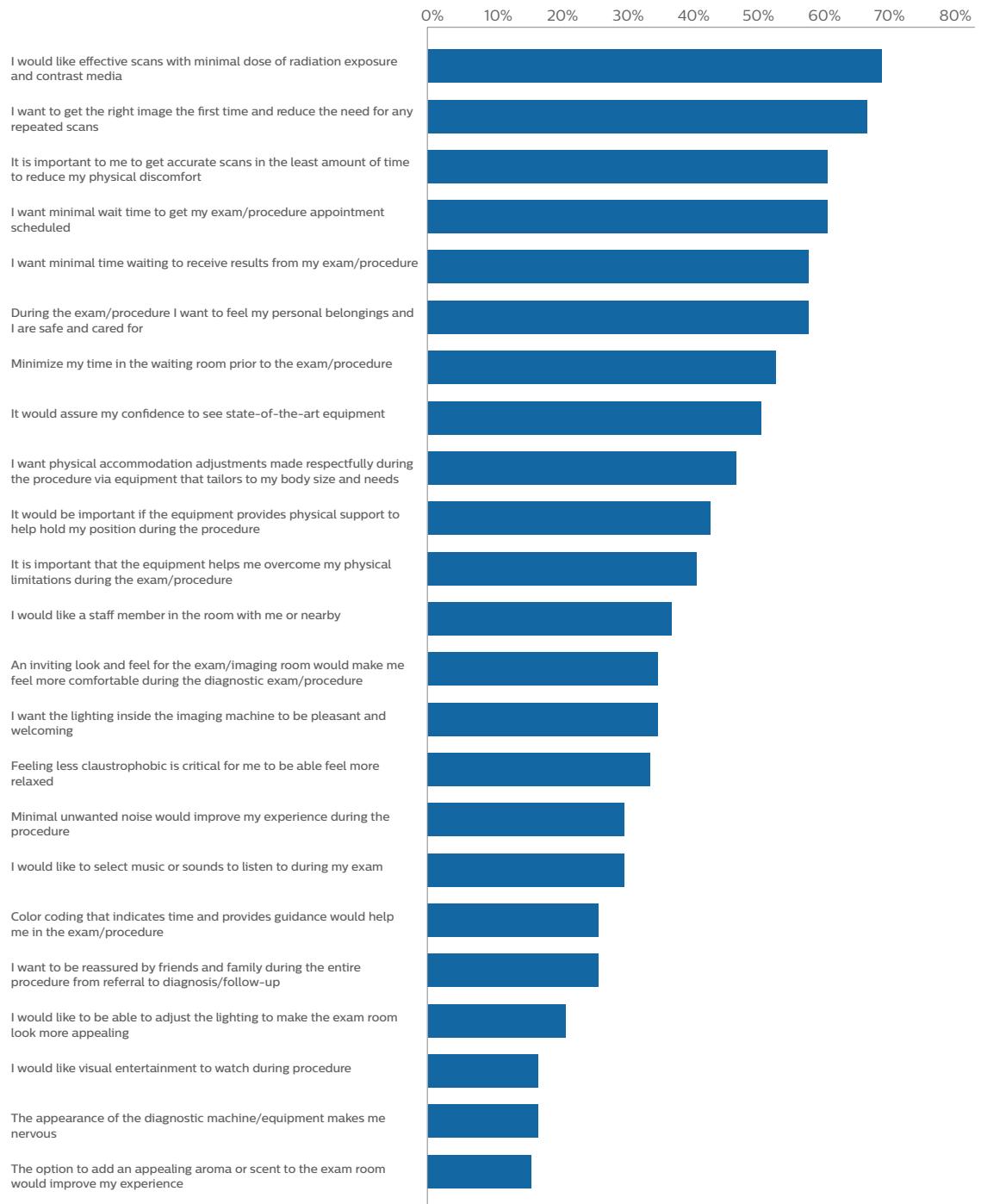


Voice of the patient: At the end of the survey, respondents were asked if there were any comments they would like to add. One patient wrote, "It is reassuring to see the amount of your interest in this subject." Another wrote, "Thank you. This is a great way of helping researchers, doctors and those who design this sophisticated medical imaging equipment to constantly keep improving and making these procedures more comfortable for patients." **Actually, we would like to thank all of you for helping us see the people behind the images.**

For more information on Philips' commitment to patient-centered imaging solutions, download our [position paper](#) and visit us at **www.philips.com/radiology**.

Appendix

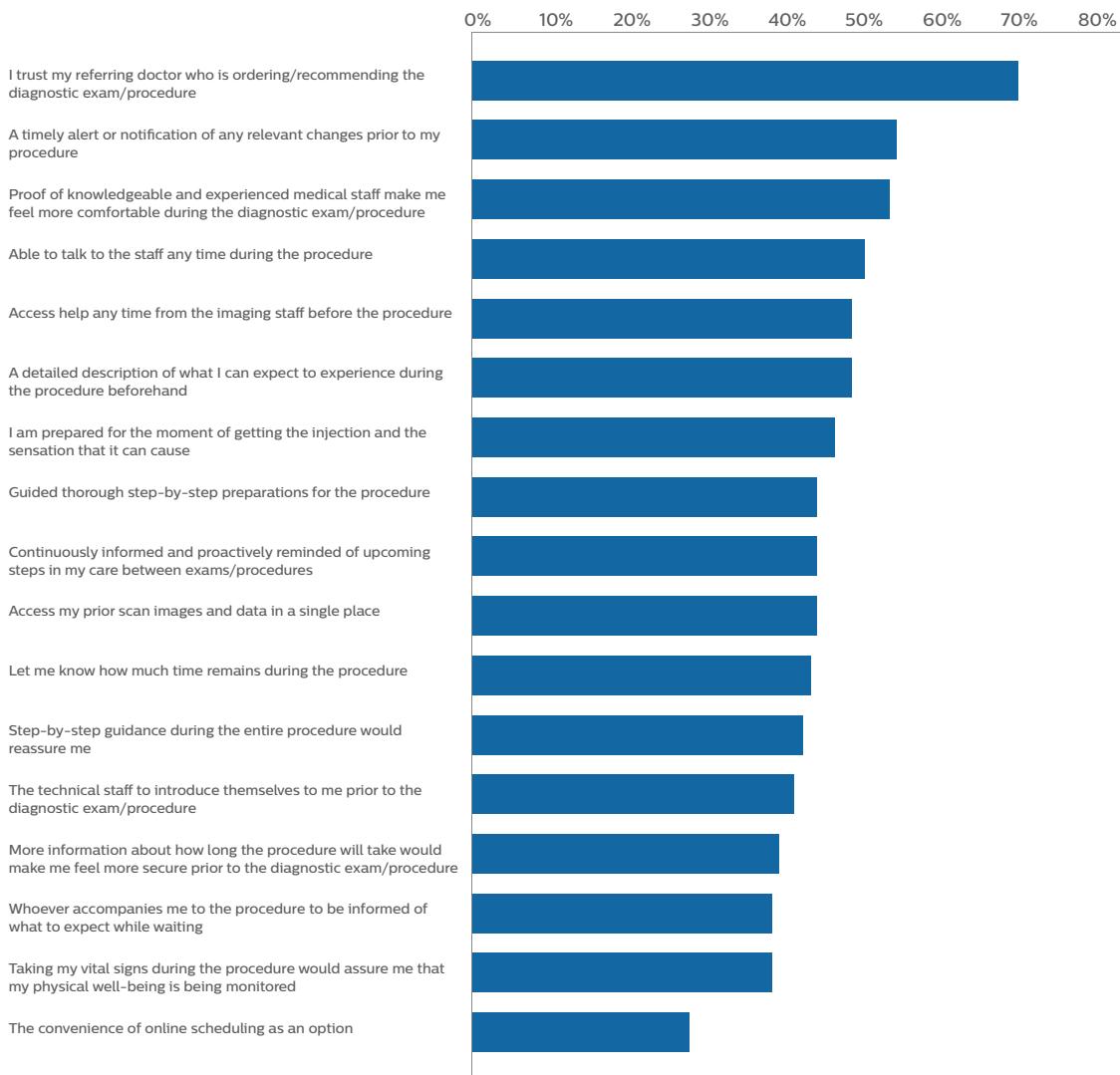
Patients' prioritized comfort needs



Results indicate percent of respondents who answered with a top two rating (6, or 7) to indicate extremely important.

Based on the question, "Thinking of your overall experience with your last [MRI/CT/DXR/AMI] exam/procedure from beginning to end, could you please describe how important each of the statements is for you?" The above chart represents the percentage score of 603 respondents who selected on a scale from (1) "extremely unimportant" to (7) "extremely important."

Patients' prioritized communication needs



Results indicate percent of respondents who answered with a top two rating (6, or 7) to indicate extremely important.

Based on the question, "Thinking of your overall experience with your last [MRI/CT/DXR/AMI] exam/procedure from beginning to end, could you please describe how important each of the statements is for you?" The above chart represents the percentage score of 603 respondents who selected on a scale from (1) "extremely unimportant" to (7) "extremely important."

About Kantar TNS

Kantar TNS is one of the world's largest research agencies with experts in over 80 countries. We provide actionable insights to help companies make impactful decisions and drive growth. With expertise in innovation, brand and communication, shopper activation and customer relationships we help our clients identify, optimize and activate the moments that matter to drive growth for their business. We are part of Kantar, one of the world's leading data, insight and consultancy companies. Find out more at www.tnsglobal.com.



1. Andre, Jalal. Johansson, Katarina. Relaxed patients, reduced motion, improved productivity. FieldStrength MRI Magazine.
2. Intervention to lower anxiety of 18F-FDG PET/CT patients by use of audiovisual imagery during the uptake phase before imaging. J. Nucl. Med. Technol. 2012 40:92-98 published ahead of print May 8, 2012.
3. To participate in the survey, patients had to have had an imaging study within the past year.
4. Participant responses to the question, "Given the circumstances, how would you evaluate your overall experience of your last diagnostic [MRI/CT/DXR/AMI] exam/procedure, taking into account all steps from referral at the beginning till the follow up at the end?"
5. Participant responses to the question, "If you think back of your overall experience undergoing your last scan/imaging procedure, from referral at the beginning till follow up at the end, what words come to mind first?"

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