

How can disease be detected before symptoms appear?

How can the flood of medical data be bundled to accelerate analysis?

How can different types of cancer be diagnosed earlier?

4:25 p.m.

4:23 p.m.



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## Demographic change and healthcare



4:34 p.m.

4:28 p.m.



66 Our structure

24 Climate change and energy supply

4:45 p.m.



4:39 p.m.



## Will Jimmy be able to afford good medical care when he's my age?

With our innovative technologies and efficient IT solutions, we stand for improved healthcare worldwide at lower cost.

As life expectancy increases, healthcare costs are climbing. We offer cutting-edge solutions that improve the quality of care before, during and after treatment – from extremely accurate diagnostic systems to software solutions that help optimize clinical workflows. And that not only cuts costs but also benefits patients.





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Demographic change  
and healthcare



As one of the world's leading providers to the healthcare industry, we're ensuring that diseases can be treated earlier, more accurately, more efficiently and more comfortably.

Demographic change represents an enormous challenge to existing healthcare systems all over the world. Low birth rates, combined with increases in life expectancy worldwide, mean that societies are getting older. As a result, healthcare costs are exploding, making quality care unaffordable for many. Healthcare systems are becoming more and more expensive to operate, and the additional costs cannot be covered by higher public spending alone. What's needed are technological innovations that will make healthcare accessible and affordable for everyone. These technologies will make it possible to detect and treat disease considerably earlier than in the past – not only improving patient prognoses and the quality of life but also eliminating many of the costs associated with treating disease at a more advanced stage.

As one of the world's leading providers to the healthcare industry, we're tackling these challenges. For example, our highly efficient computed tomography (CT), magnetic resonance imaging (MRI) and advanced laboratory diagnostic systems are enabling healthcare providers to detect disease at the earliest possible stage, while our molecular medicine solutions make it possible to identify genetic predispositions to diseases such as cancer and Alzheimer's disease. Our laboratory diagnostics systems and reagents for clinical diagnostic tests are helping physicians not only detect disease but also monitor patient conditions and therapies. All these systems generate a huge amount of data, which can be managed using intelligent software solutions. This data is then made available at the right time and place, ensuring that decisions are based on up-to-date patient information.

Our products and solutions for the entire healthcare continuum – from prevention and early detection to diagnosis, therapy and follow-up care – play a key role in diagnosing diseases earlier and with greater precision and patient comfort while improving treatment efficiency.



### A revolution in CT imaging

Our SOMATOM Definition Flash is an innovative CT scanner that is setting new industry-wide standards for speed and dose reduction: it requires only a fraction of the radiation dose used by previous systems to scan even the tiniest anatomical details faster than ever before. For example, the unit can generate an image of the entire heart in about a quarter of a second – less than half a heartbeat.

The SOMATOM Definition Flash features new dual-source CT technology, in which two X-ray tubes revolve around the patient's body simultaneously. The fastest scanning speed ever achieved in computed tomography – up to 43 centimeters per second – and a temporal resolution of 75 milliseconds enable complete scans of the entire chest region, for example, in just 0.6 seconds. As a result, patients no longer need to hold their breath during the examination. What's more, the SOMATOM Definition Flash operates with a dramatically reduced dose of radiation. For example, a heart scan can be performed with less than one millisievert (mSv), while the average effective dose required for this purpose is usually as high as 30 mSv.

### Molecular imaging meets CT

Our Biograph Molecular CT (mCT) scanner is the first system to combine the capabilities of an advanced CT scanner with those of a high-resolution positron emission tomography (PET) system. With conventional PET-CT devices, the CT component can perform only a limited range of CT scans. In launching the Biograph mCT, we've rung in the era of "molecular computed tomography." On the one hand, the unit is a CT system that offers molecular imaging; on the other, it's a PET system into which the extensive options provided by computed tomography have been integrated.

Particularly at a time when healthcare budgets are shrinking, the new system is ideally suited to performing not only high-quality CT scans, but also PET-CT scans – and to doing so economically. The device also promotes close cooperation between the diagnostic disciplines of traditional radiology and molecular imaging.

### Improved early detection

We've launched Europe's first multifunctional ultrasound breast scanner that automatically records the volume of the female breast: the Acuson S2000 Automated Breast Volume Scanner (ABVS). Featuring a user-independent, standardized imaging process, the system is also suitable for early detection of breast cancer via ultrasound. This application is particularly important in the case of patients with dense breast tissue because – according to reports in the *New England Journal of Medicine* – dense breast tissue makes a woman five times more likely to contract breast cancer. While conventional mammography will remain the first-choice scanning method for early detection of breast cancer, a study conducted by the Radiological Society of North America shows that the detection rate for impalpable invasive breast cancer increases by 42 percent if the mammogram is combined with an ultrasound scan.

The Acuson S2000 enables physicians to reach a more reliable diagnosis than was possible with earlier methods. In addition, scans can now be performed more quickly, and the results are available immediately.



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## Demographic change and healthcare



### More efficient clinical imaging

Our Healthcare Sector provides software solutions that support the workflow processes associated with radiological imaging, helping improve the efficiency and accuracy of image evaluation.

Our new imaging software for the advanced visualization and multimodality evaluation of clinical cases – *syngo.via* – demonstrates once again that we're leading the way in addressing market demands for clinical imaging. *syngo.via* and *syngo.via*-based independent clinical applications help to improve evaluations of clinical images and support efficient, task-oriented clinical workflows – from patient exams to the distribution of exam results. For example, by automating certain pre-defined process steps, *syngo.via* makes it possible to cut the number of manual subtasks needed to set up image evaluations, which helps reduce errors and achieve precise and efficient diagnoses – even across different image acquisition modalities.

Our innovative technologies enable us, uniquely, to combine imaging systems and evaluation software and bundle them into a complete client-server solution – to the advantage and benefit of our customers, who can access images more quickly, focus on evaluations and make prompt diagnoses – all factors that support high-quality patient care.

### Allergy tests for careful diagnosis

Millions of adults and children suffer from allergies. However, symptoms like runny noses, watery eyes and coughing are not just unpleasant, they can also negatively impact the quality of life. The key to providing the correct therapy is accurate diagnosis. Conventional allergy tests, in which suspected allergens are injected beneath the skin, are tedious and, sometimes, painful. Siemens' 3gAllergy – a third-generation test – measures allergen-specific IgE antibodies directly in the blood.

### Turnkey hospital solutions

Applying its proven integrated concepts – Total Building Solutions and Totally Integrated Power – Siemens provides turnkey hospital solutions covering a building's entire lifecycle, from construction to operation to modernization. The portfolio includes systems for fire prevention and protection, electronic safety and security, building comfort and energy efficiency.

Our turnkey hospital solutions have numerous advantages: hospitals work with a single, expert partner who ensures energy savings and reduces environmental impact, hospital staff can now rely on efficient operations that involve few sources of error, and patients can enjoy enhanced comfort, safety, and security.