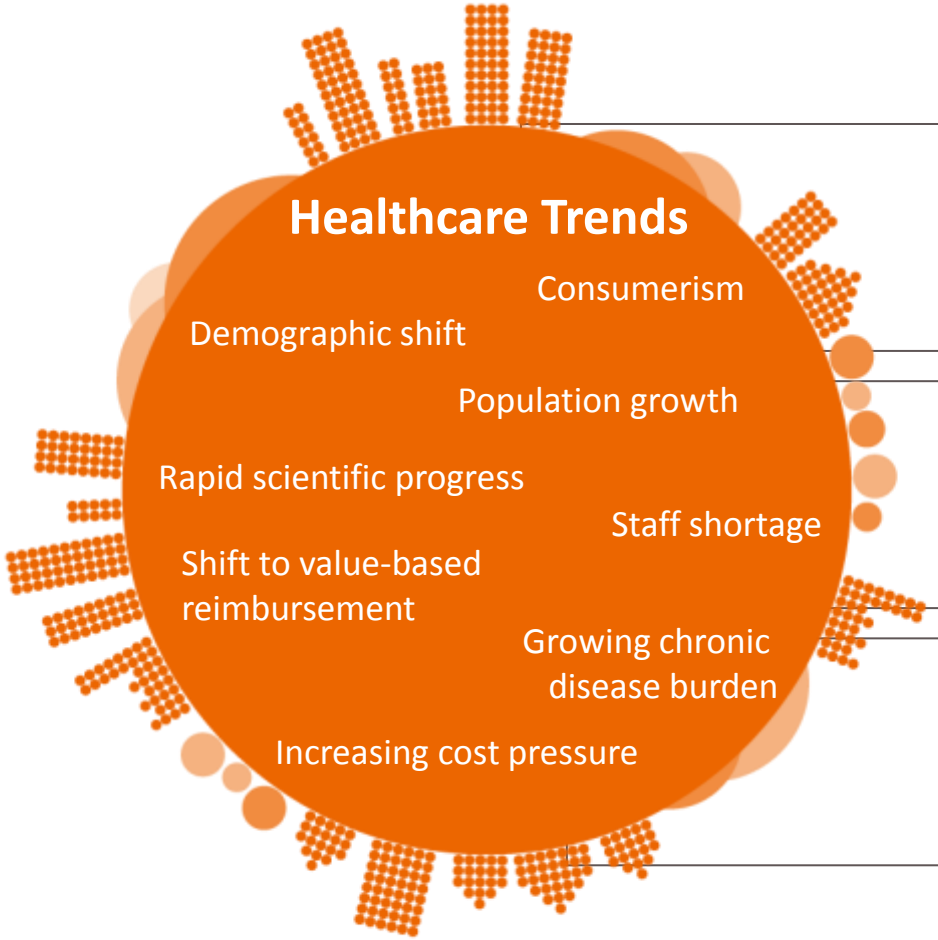
SIEMENS Healthineers

Enabling better outcomes at lower costs

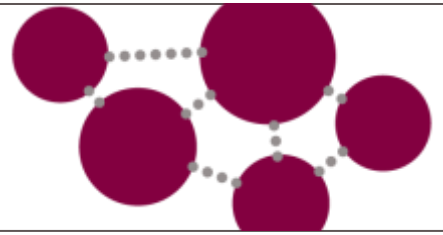
Global Dynamics in Healthcare

SIEMENS Healthineers

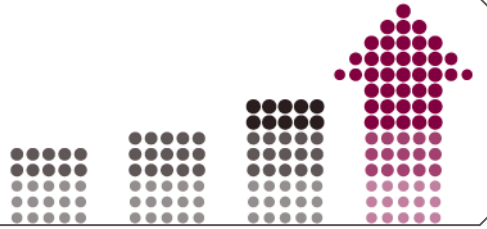


Transformation of Healthcare Providers

Consolidation
Building the critical mass



Industrialization
Doing more with less

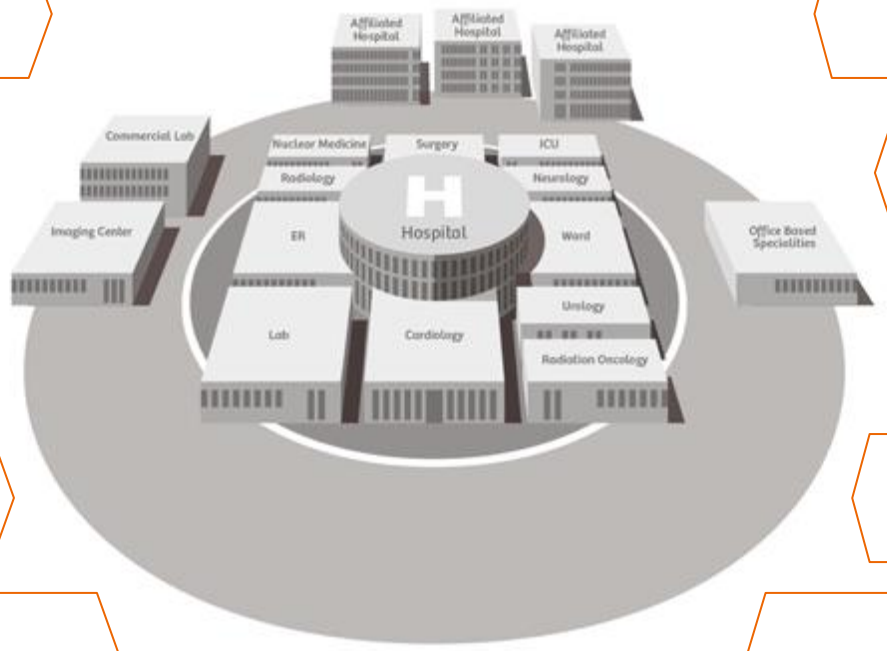


Managing Health
Value-based healthcare

The Transformation Implies Multiple Challenges for Healthcare Providers

SIEMENS Healthineers

- Extend clinical capabilities
- Improve quality of care
- Standardize care
- Increase efficiency
- Attract, retain, develop workforce

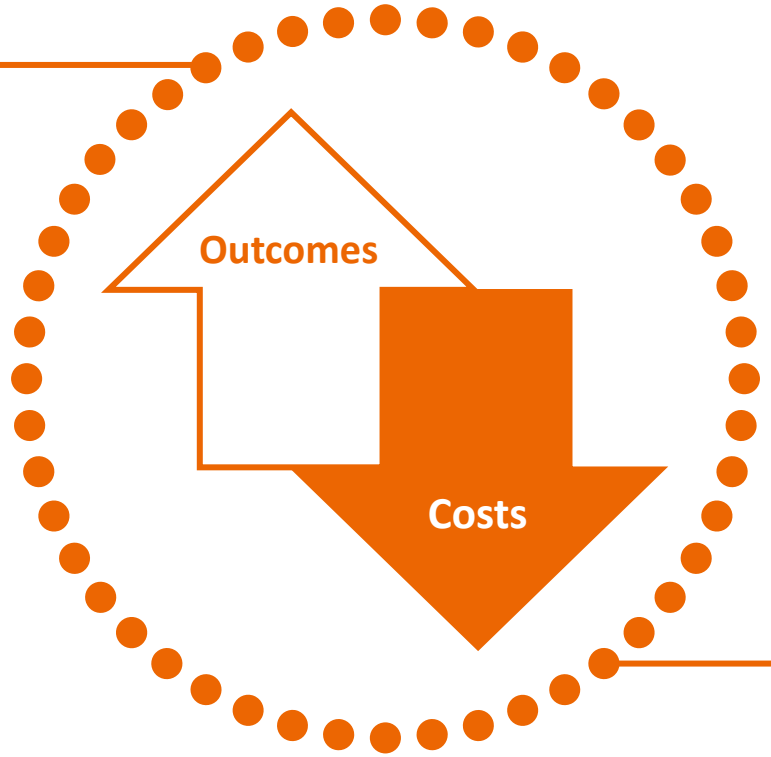


- Manage reputation
- Improve profitability
- Stay competitive
- Reduce risk & act compliantly
- Balance fixed vs. variable costs

Our Purpose is to Make Healthcare Providers Succeed

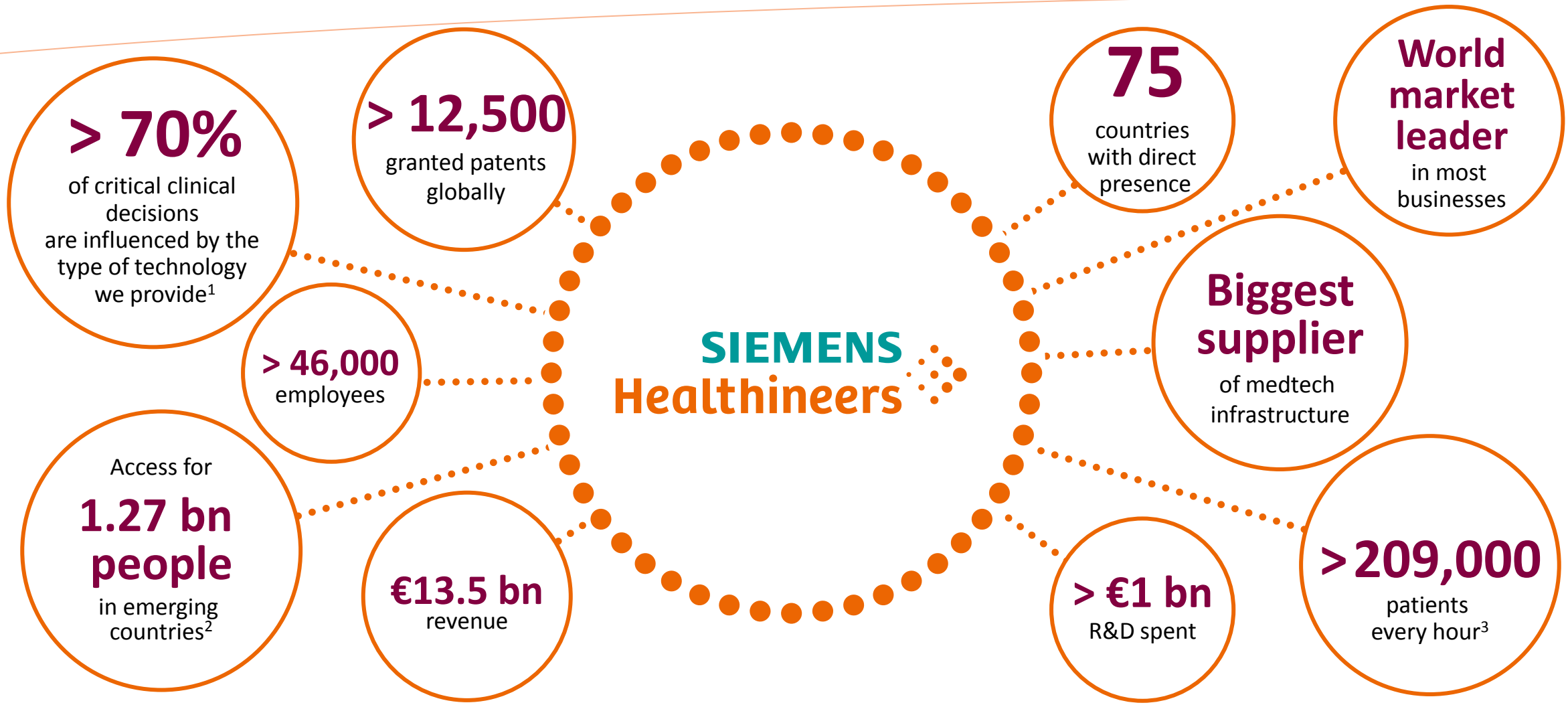
SIEMENS Healthineers

Enabling better outcomes



at lower costs

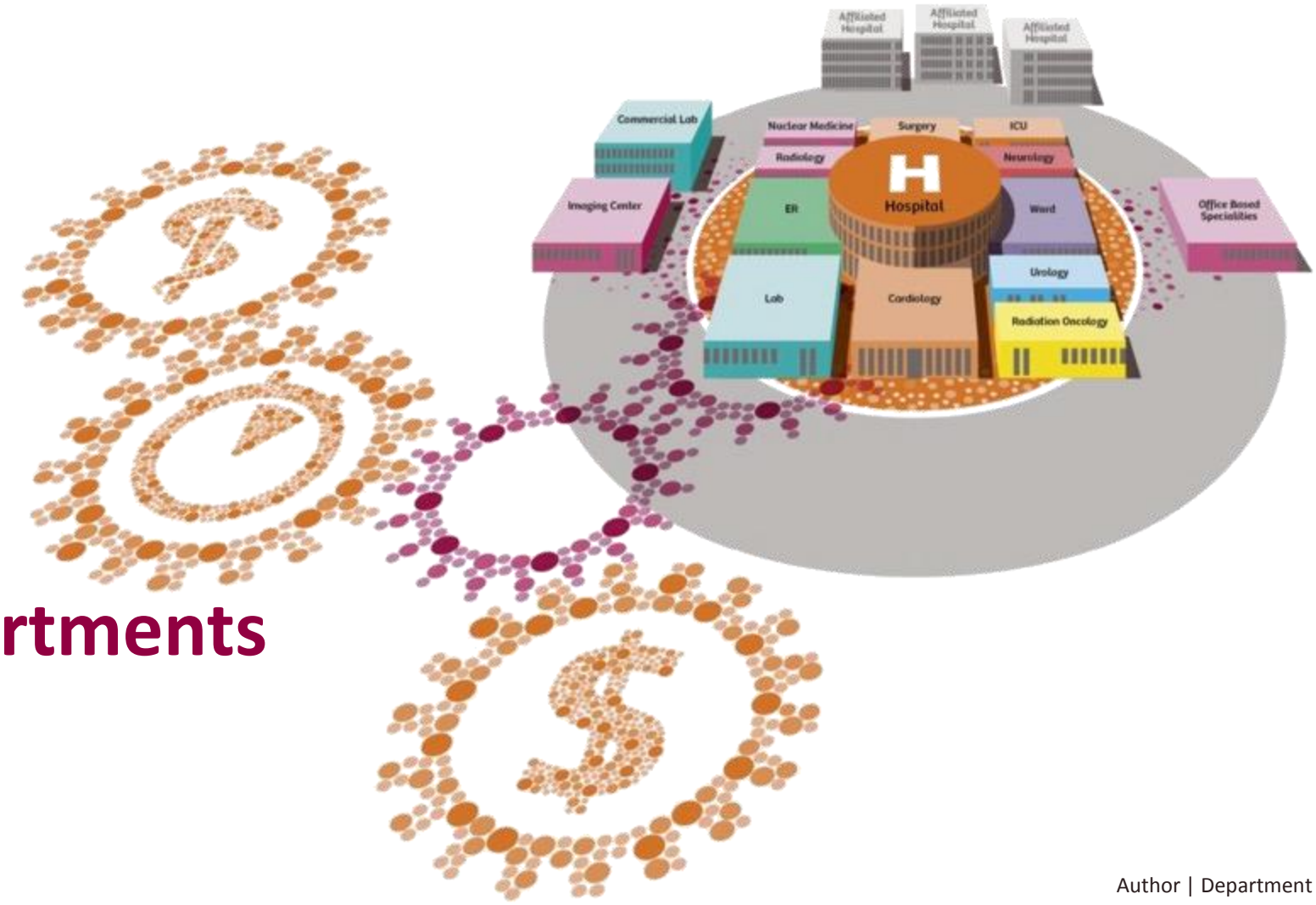
Who We Are



1) AdvaMedDX, “A Policy Primer on Diagnostics”, June 2011, page 3
2) Siemens AG, “Sustainability Information 2016”, page 8
3) Siemens AG, “Sustainable healthcare strategy - Indicators in fiscal 2014”, page 3-4

Engineering Success

Innovations Transforming Departments



Our Innovations - 120 Years Track Record

1901
Nobel prize winners (Physics + Medicine)

1896
Industrially manufactured X-ray appliance for medical diagnostics

1956
CLINISTIX – dry chemistry testing for glucose in urine

1957
Fully automated discrete chemistry analyzer for whole blood or serum

1967
First real-time ultrasound scanner

1975
First Siemens CT scanner

1982
First acridinium ester based chemiluminescence immunoassays

1983
First Siemens MRI scanner

1998
First Siemens track-based laboratory automation system

1999
First intuitive medical IT platform from Siemens

2001
First PET/CT system from Siemens

2005
First Dual Source CT scanner

2006
Diagnostic analyzer integrating four technologies in one system

2008
Robotic-assisted angiography system

2008
Digital radiography, wireless flat panel detector

2009
Multi-modality 3D imaging network

2011
First integrated, simultaneous whole-body MRI and PET

2014
"Free breathing" CT scanning with dual X-ray sources & detectors

2012
Wireless transducers for ultrasound

2014
Cloud-based network: teamplay

2015
Wide-angle image acquisition breast tomosynthesis

2016
Liquid biopsy

2015
First Twin Robotic X-ray scanner for enhanced patient care and productivity

2016
Lab diagnostics solution for immunoassay and clinical chemistry: Atellica™ Solution[1]

Outcomes

Costs

Enterprise Services

Advanced Therapies

Molecular Diagnostics

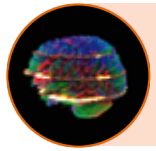
Digital Health Services

Future

1) System under FDA review. Not available for sale. Any features listed are part of the development design goals. Future availability cannot be guaranteed

Engineering Success – With Broadest and Deepest Portfolio

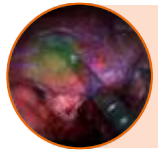
SIEMENS Healthineers



Diagnostic Imaging

Computed Tomography, Magnetic Resonance Imaging, Molecular Imaging, Radiography & Fluoroscopy, Imaging IT

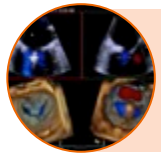
Undisputed market leader in diagnostic imaging



Advanced Therapies

Cardiology, Interventional Radiology, Radiation Oncology, Surgery

Empowering innovative therapy concepts



Ultrasound

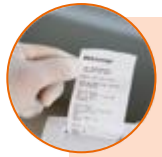
Cardiology, Radiology

Versatility and functionality across clinical questions

Laboratory Diagnostics

Immunoassay, Chemistry, Hematology, Hemostasis, Specialty Testing, Automation, IT and Services, Molecular Diagnostics[1]

Delivering clinical and workflow excellence



Point of Care

Blood Gas, Diabetes Urinalysis, Coagulation, Cardiology

Lab-accurate, actionable, timely results at the point of care

Services

System Services, Education, Enterprise Services, Digital Services

Transformative services to maximize opportunities and minimize risks

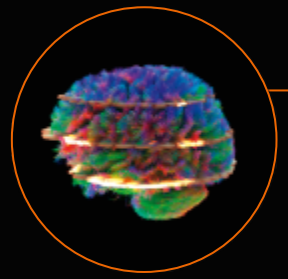
We support to raise …

- **clinical excellence**
- **operational efficiency**
- **financial profitability**

1) Incubated within Business Function Strategy & Innovation
Image courtesy Diagnostic Imaging: CMRR, Minneapolis, MGH, Boston
Image courtesy Advanced Therapies: IHU Strasbourg, France

Our Diagnostic Imaging Portfolio – Pushing clinical boundaries

SIEMENS Healthineers



Radiography & Fluoroscopy

Multix Fusion Max[1]:
Performing quick, high quality exams with less retakes and downtimes

Magnetic Resonance

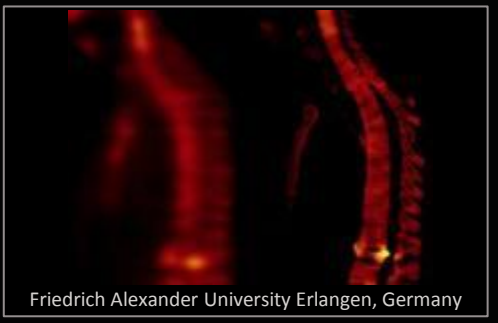
MAGNETOM Sempra[2]:
Scanning of up to 75% of routine daily cases with reliable consistency

Compressed Sensing[2]:
Accelerating MRI acquisition at a factor of up to 10, with no loss in image quality

Computed Tomography

SOMATOM go. platform[2] with SOMATOM go.Now[2] & SOMATOM go.Up[2]:
Bringing routine CT and profitability together

Molecular Imaging

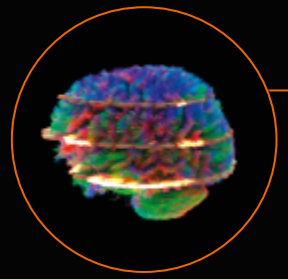


Symbia Intevo[1]:
Providing the ability to monitor and adjust treatments earlier by accurately measuring even small differences

1) This product is not commercially available in all countries.
Due to regulatory reasons its future availability cannot be guaranteed. Please contact your local Siemens organization for further details.
2) This product is pending 510(k) clearance and is not yet commercially available in the US.

Our Diagnostic Imaging Portfolio – Pushing clinical boundaries

SIEMENS Healthineers



Radiography & Fluoroscopy | Magnetic Resonance | Computed Tomography | Molecular Imaging

***syngo*.via**[1]

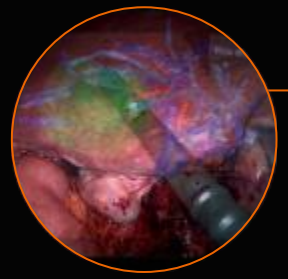
The intelligent imaging software for multi-modality reading, helping to:

- Make **clear decisions at one place** by bringing together imaging information from CT, MI and MRI images, mammography or preparing for radiation therapy
- Achieve **reproducible imaging results** in radiology and **reconfirm diagnosis and therapy decisions** through automatic image preparation based on intelligent anatomical landmarks
- Create **clear and convincing reports** for simplified distribution of results, inside and outside the department, based on structured reporting along templates and standards

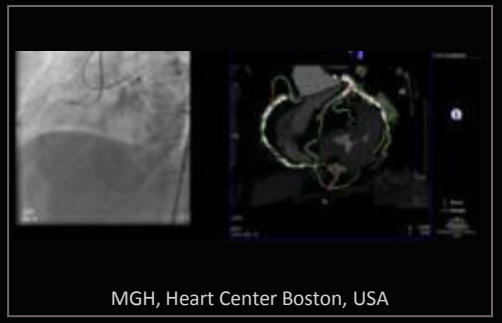
1) *syngo*.via can be used as a standalone device or together with a variety of *syngo*.via-based software options, which are medical devices in their own right. *syngo*.via is not yet commercially available in all countries. Due to regulatory reasons, its future availability cannot be guaranteed. Please contact your local Siemens organization for further information.

Our Advanced Therapies Portfolio – Improving outcomes in therapy

SIEMENS Healthineers



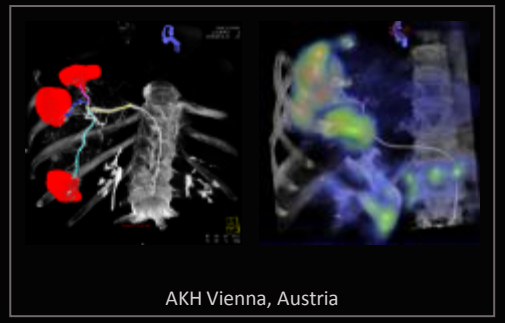
Cardiology



MGH, Heart Center Boston, USA

Coronary Artery Disease (CAD):
Enhance stent visualization in real-time with image quality tools

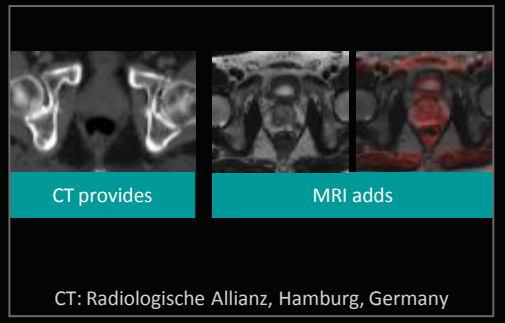
Interventional Radiology



AKH Vienna, Austria

Interventional Oncology:
Estimate tumor response by evaluating initial tumor blood volume and it's decrease due to embolization

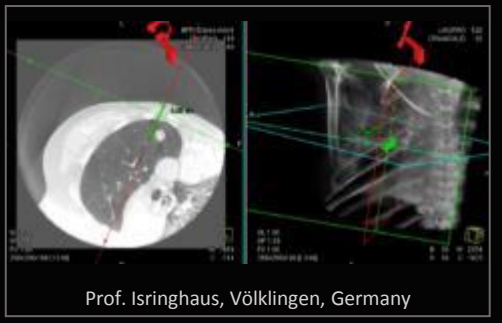
Radiation Oncology



CT: Radiologische Allianz, Hamburg, Germany

MRI in RT:
Adding valuable information on tissue properties

Surgery



Prof. Isringhaus, Völklingen, Germany

Thoracic Surgery – Lung cancer:
One-stop needle localization and minimally invasive resection of small pulmonary nodules

Our Ultrasound Portfolio – Enhancing operational efficiency

ACUSON S Family HELX™ Evolution with Touch Control

- **Intuitive, user-focused technologies** that promote streamlined processes for improved exam quality with less effort
- **Crisp and clear images** to make the first diagnosis the right one
- **Investment protection** with an upgradeable ultrasound architecture that addresses evolving needs

ACUSON NX™ Series

- Advanced workflow solutions for **consistent, accurate results** - even in the **most active clinical settings**
- Adaptable tools for **enhanced clarity across a wide range of applications**
- Versatile ultrasound platform **built to grow as needs evolve**

ACUSON Freestyle™ Series

- World's first wireless ultrasound solution, **redefining ultrasound access in the interventional suite and at the point of care**
- Scalable configurations to promote **automated workflow, clear visualization and faster access** to the ultrasound procedure
- **Consistently focused image from near to far field**, with a simplified workflow obtained by a single user

ACUSON S2000™ ABVS[1] HELX™ Evolution with Touch Control

- **Reduced intra-operator variability in breast practice**
- Views of the anatomical coronal plane for a more **holistic and intuitive view of the global breast architecture**
- **Hands-free acquisition** to produce consistent and reproducible results

1) ABVS = Automated Breast Volume Scanner

Our Laboratory Diagnostics Portfolio – Serving laboratories of any size

SIEMENS Healthineers

Lab Automation/Diagnostics IT

Chemistry

Immunoassay

Drug Testing

Hematology

Hemostasis

Plasma Proteins

IDD

Largest number of installed Track-based Automation Systems[1)]

1) Worldwide In Vitro Diagnostic Laboratory Automation Market Review, 2015 data.
Report generated by independent research company in June 2016.

Our Point of Care Portfolio – Giving full control over POCT program

The challenges of POC testing

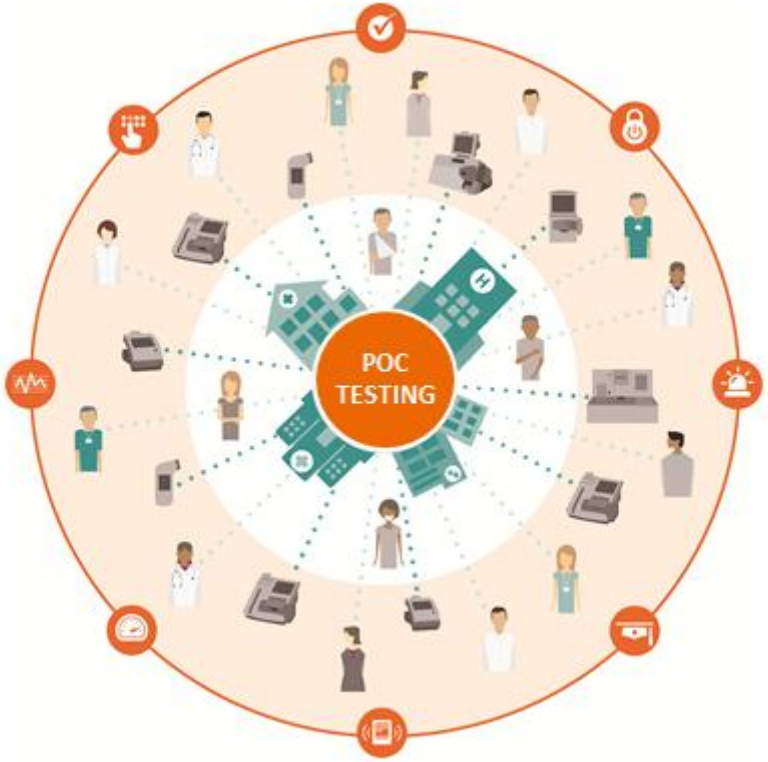
Dozens of sites

Hundreds of instruments

Thousands of operators

The Point of Care Ecosystem™ Solution

Provides **full control** over our customers' testing environment



Our Point of Care Portfolio – Providing end-to-end ecosystem solutions

SIEMENS Healthineers

Prevention

and Chronic Disease

- Urinalysis
- POC Diabetes
- POC Coag[1]

+

Critical Care

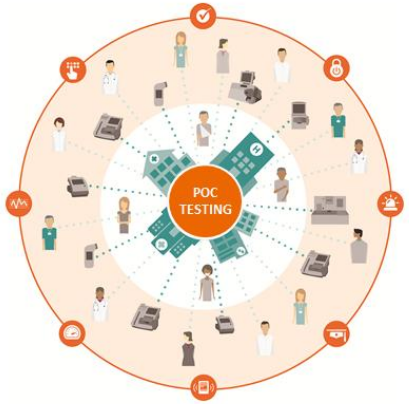
and Clinical Value

- Blood Gas
- POC Cardiac

+

Consolidation and Standardization

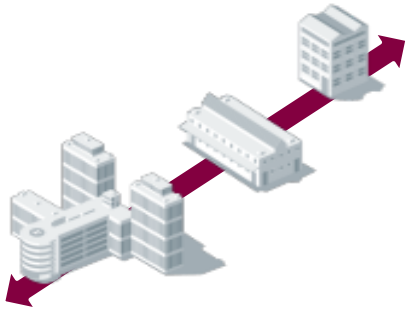
POC Ecosystem™ Solution



+

Consolidation and Standardization

End-to-End



1) Product availability varies by country.

Entering the Field of Molecular Services – Pursued through NEO New Oncology AG

SIEMENS Healthineers

Third-generation cancer genome diagnostics

FFPE (tissue)

Cytology (cells)

Blood

Clinical routine sample

NEO analysis to detect all therapeutically relevant genomic alterations in one sample

Medical report including therapeutic options and information on available clinical trials

Reliable identification and interpretation of all therapy-relevant genomic alterations with only one tissue/blood sample

Engineering Success – With High-Quality Products and Service

SIEMENS Healthineers

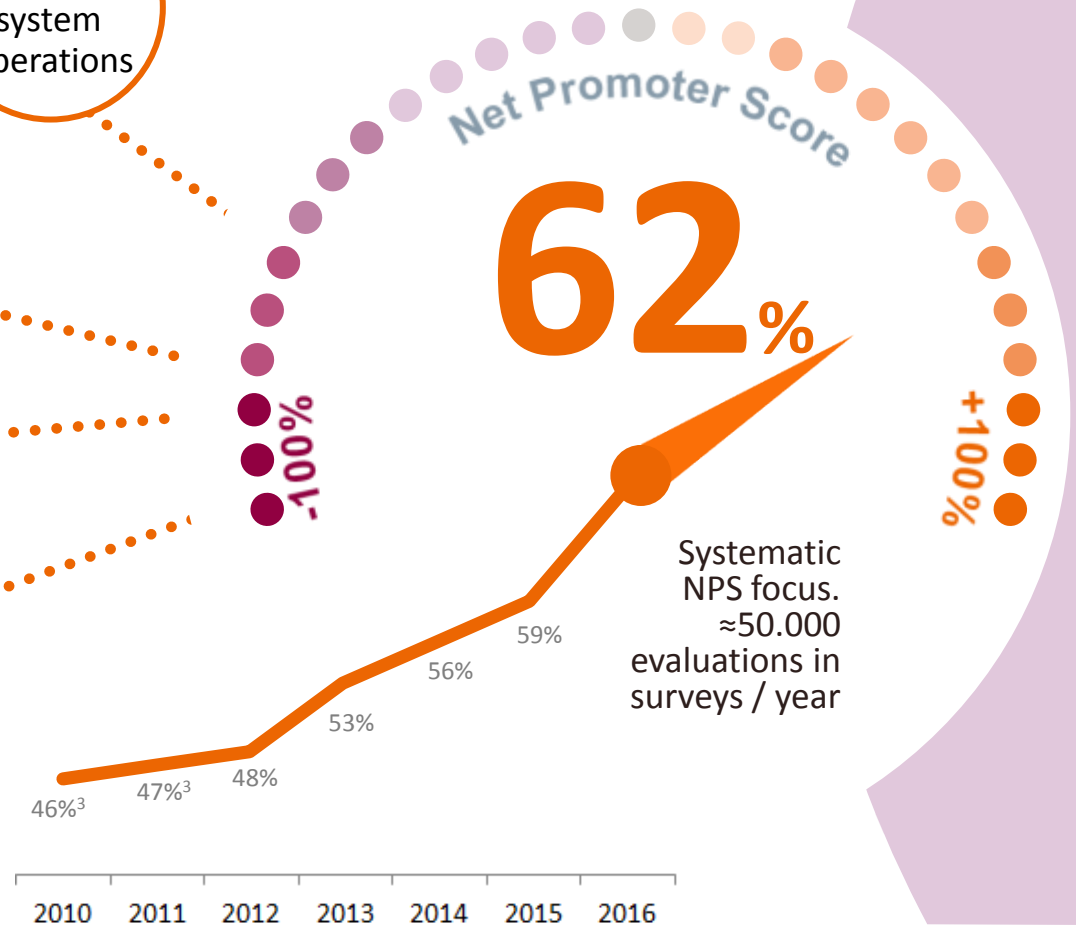
> 8,500 service engineers globally

Proactive, real-time monitoring[1] supports **> 99%** system availability[2]

Unified system operations

> 1,600 application specialists globally

24h spare part delivery time in 98% of cases



Systematic NPS focus. ≈50.000 evaluations in surveys / year

Aiming at …

run departments 24/7

best utilize department resources

reduce errors

1) Guardian™
2) In countries where available
3) Imaging only

Innovations Transforming Departments

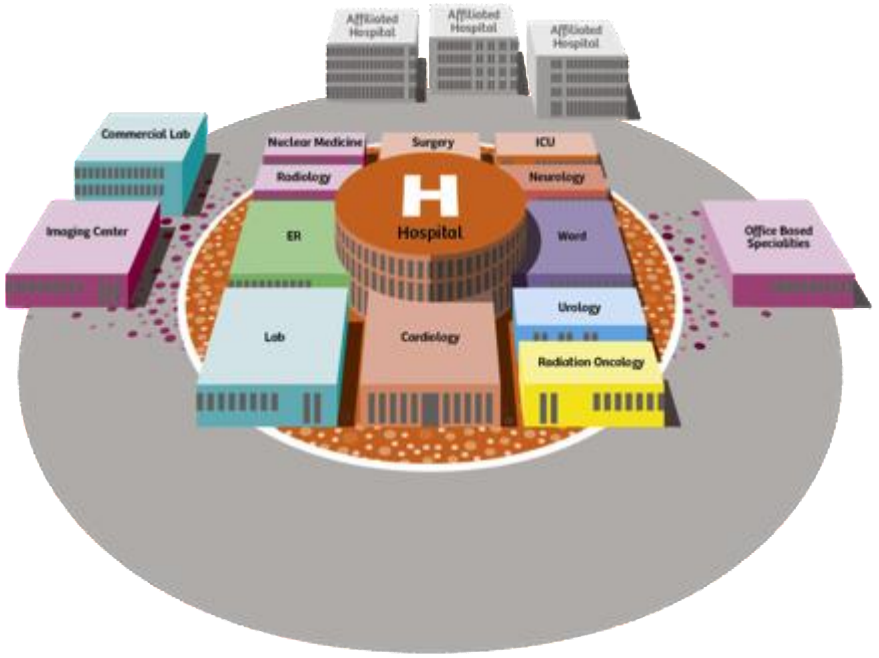
SIEMENS Healthineers

Diagnostic confidence at the point of care

Highest **diagnostic quality and efficiency**

Fast triaging

Clinical and workflow excellence in the lab



Efficient monitoring of chronic diseases

Customized care for specific patients & disease

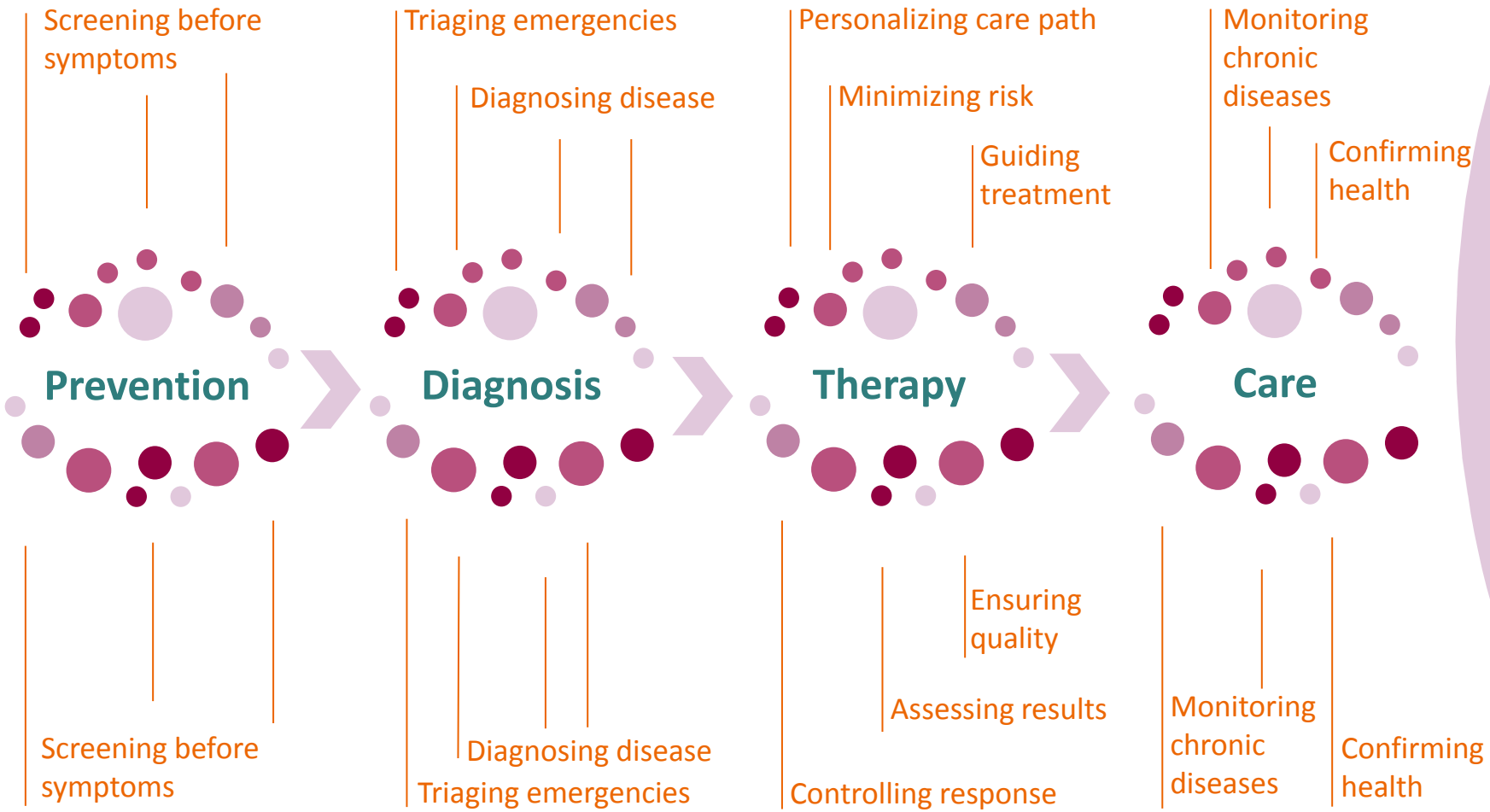
Safe and effective **min. invasive therapies**

Precise **state-of-the-art radiation therapy**

Pioneering Healthcare

Services Transforming Systems

Our Technology –
The Nervous System for Healthcare Providers



> 70%
of critical clinical decisions influenced the type of technology we provide[1]

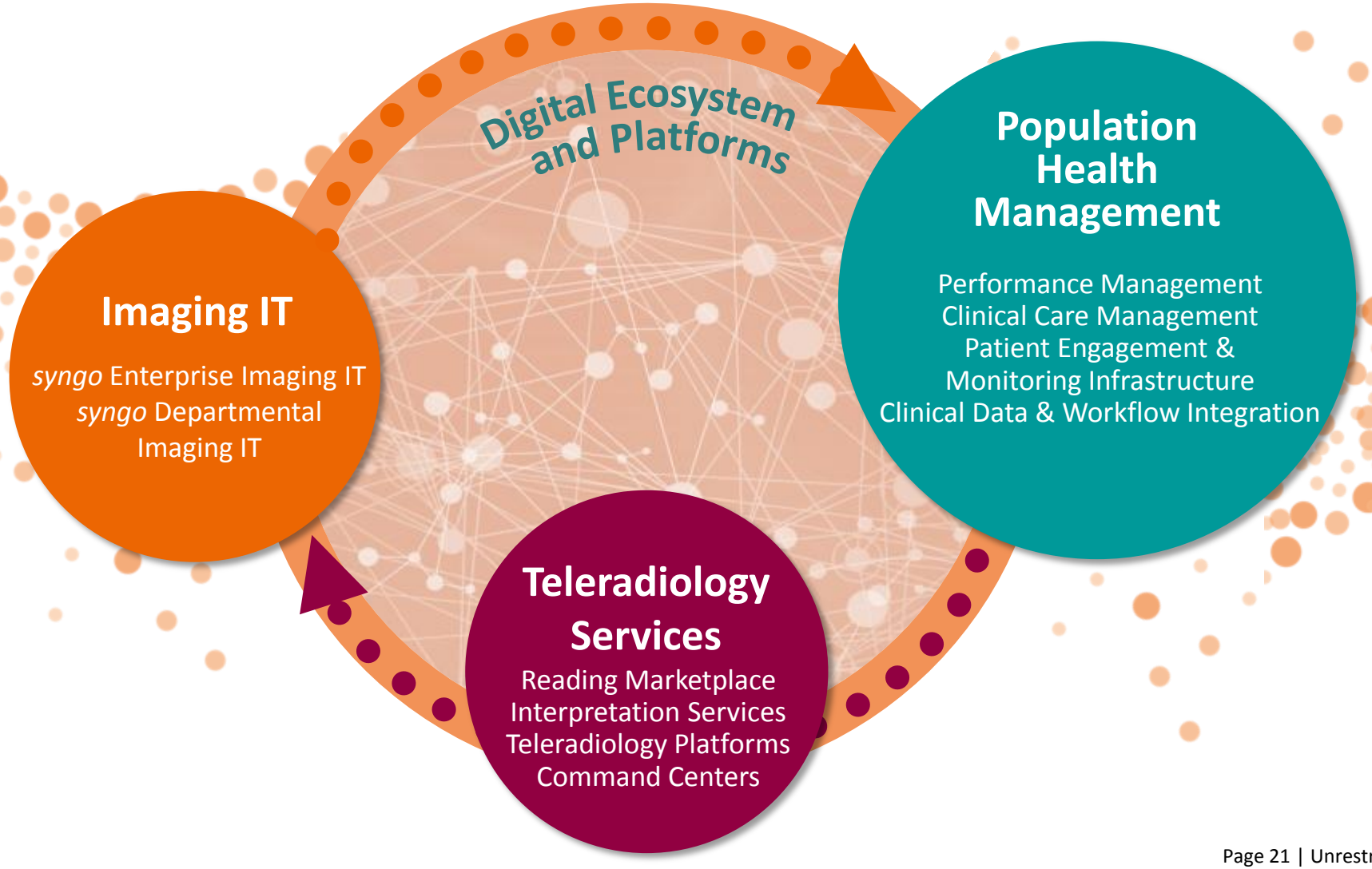
2%
of budget touching almost every patient

covering all major disease states

1) AdvaMedDX, "A Policy Primer on Diagnostics", June 2011, page 3

Pioneering Healthcare – Through Digital Services

SIEMENS Healthineers



Pioneering Healthcare – Through Enterprise Services

SIEMENS Healthineers

Enterprise Transformation and Advisory Services

Facility Design Services
Performance Improvement Services
Transformation Services

Enterprise Operations as a Service

Asset Management Services
Staffing and Capacity Services
Managed Departmental Services

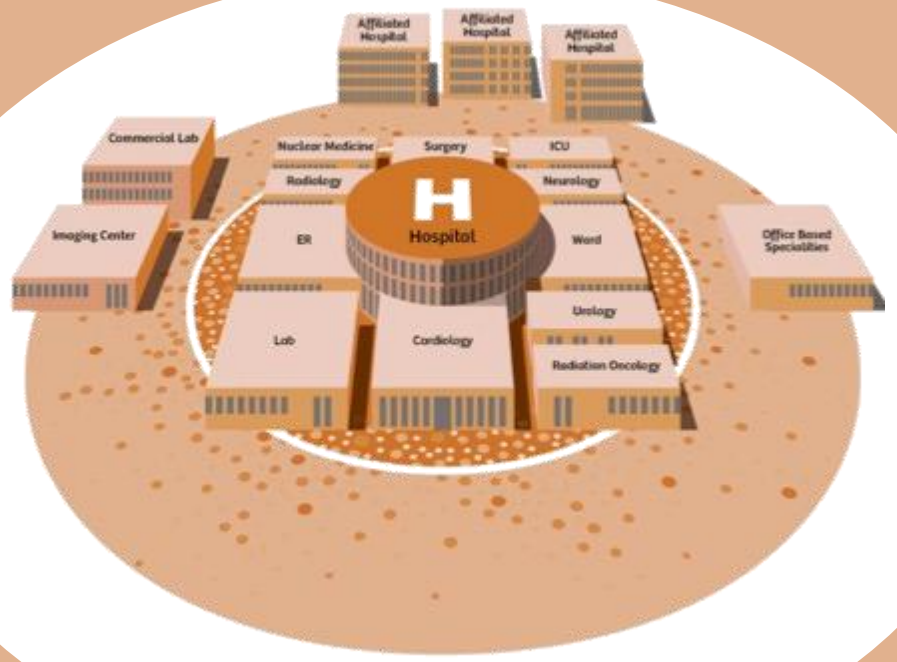
Services Transforming Systems

SIEMENS Healthineers

Enabling **standardized procedures across multiple sites**

Consulting and helping to bring efficiency to the next level

Helping master the **transformation towards value-based care**



Helping master the **digital transformation**

Avoiding obsolescence with **new technology upgrades**

Protecting your investment for the healthcare enterprise

SIEMENS Healthineers

Together

People Transforming the Industry

Our People –
Engineers. Pioneers. Passionate for Healthcare.

SIEMENS Healthineers

> 1,600
invention disclosures in 2016

10%
of employees with clinical background

7,660
R&D employees
17% of entire company

"A day without **passion for healthcare** is a lost day"

≥85%
employee engagement

50%
of employees globally with Siemens Healthineers **> 10 years**

92%
of employees committed to go the "extra-mile"

Together –
A Unique Network to Transform the Industry

SIEMENS Healthineers

> Direct presence in **75 countries**

> 4,400 research collaborations

> All **U.S. News and World Report Honor Roll Hospitals** are Siemens Healthineers customers

> 600,000 installed systems

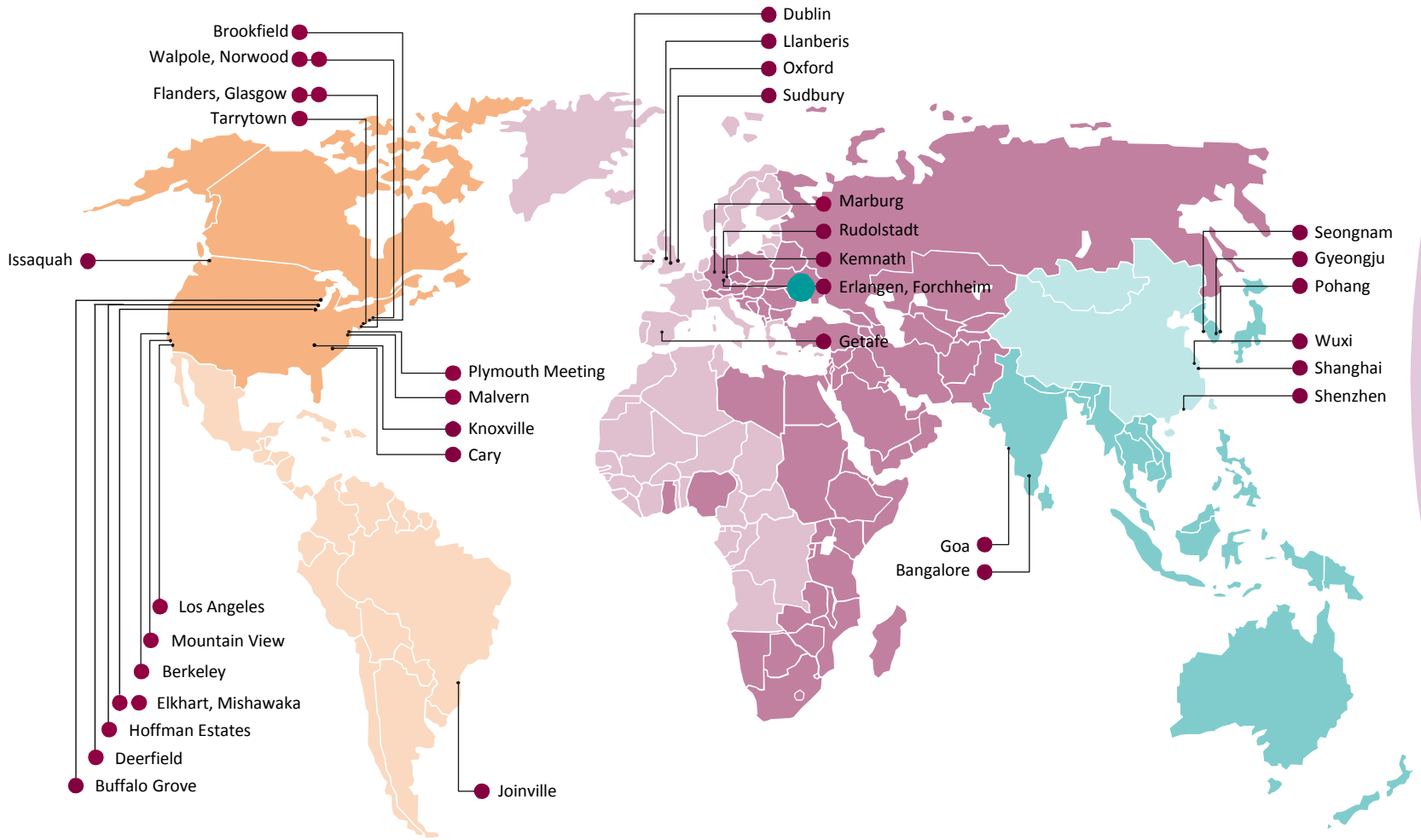
Gives access to …

latest research activities & results

deep market insights

operational experience

Together –
We are Where You are



Local everywhere with sales & service

North America
> 5,600 employees

Latin America
> 1,500 employees

Western Europe and Western Africa
> 3,800 employees

Central Europe, Middle East, Africa
> 3,900 employees

Asia Pacific
> 3,600 employees

North East Asia
> 2,700 employees

Headquarter
Major manufacturing/engineering sites

Figures as of August 2016

What if you could provide optimal care while weathering a storm?

SIEMENS Healthineers

Computed Tomography & Imaging IT

Children's Hospital of Alabama
Birmingham, Alabama, USA

"I realized that night that through technology and our wonderful employees that we would make it through anything."

Karen Nide, Diagnostic Radiology Manager

Challenge

Process Efficiency

Standardization

Patient Outcome

Provide optimal emergency care and quick diagnosis in a 3-day span of tornado storms

Healthcare engineering

- Siemens CT passed the stress test of scanning 151 patients' head, neck, chest, abdomen and pelvis in one night
- PACS system made images available at multiple locations at the same time, allowing for fast and efficient reading and reporting

Value contribution

Ø 12 min	151	176
Patients on and off the CT table	CT scans read in one night	X-ray exams read in one night

The results by Siemens' customers described herein are based on results that were achieved in the customer's unique setting. Since there is no "typical" hospital and many variables exist (e.g. hospital size, case mix, level of IT adoption) there can be no guarantee that other customers will achieve the same results.

What if you could reduce the door-to-needle time to 20 minutes?

SIEMENS Healthineers

Computed Tomography & Consulting

Helsinki University Hospital
Helsinki, Finland

"Industry could and should have more role to help distribute optimal information about stroke care and helping international stroke organizations to do the same."

Professor Markku Kaste, MD

Challenge

Patient Outcome

Improve outcome and quality of life for stroke patients

Process Efficiency

Speed up treatment

Financial Performance

Reduce long-term hospitalization and institutional care

Healthcare engineering

- Joint analysis and change of processes to better connect the ambulance services with the emergency department and the latter with the neurological department
- Move of the CT system to the emergency department to shorten distances and save precious time
- Therapeutic lysis can be performed immediately while the patient is still in CT

Value contribution

25%	Ø 20 min	14.4 mio €
Reduction of stroke mortality from 30 to 25 percent in the period from 2004 to 2014	Door-to-needle time	Savings in chronic care costs in 2007

The results by Siemens' customers described herein are based on results that were achieved in the customer's unique setting. Since there is no "typical" hospital and many variables exist (e.g. hospital size, case mix, level of IT adoption) there can be no guarantee that other customers will achieve the same results.

What if you could achieve maximum accuracy for the smallest patients?

SIEMENS Healthineers

Magnetic Resonance Imaging & Molecular Imaging

University Hospital Leipzig
Leipzig, Germany

"If simultaneous MR and PET examinations show that the patient will not respond to a treatment, the patient does not have to undergo a useless treatment that would only be a strain on him or her, and the plan can shift to a different treatment instead."

Professor Henryk Barthel, MD, Assistant Medical Director, Nuclear Medicine Department

Challenge

Clinical Capabilities	Process Efficiency	Reputation
Accuracy of treatment guidance in oncology, specif. for pediatric patients	**High efforts: 2 scans and 2 sedations needed**	**Keeping position as leader in science and research**

Healthcare engineering

Hybrid imaging (MR-PET):

- combined morphological and functional information
- minimal radiation exposure
- less time and resource efforts

Value contribution

#	-1	★
Treatment response can be quantified	One scan and sedation less per case	First hospital with MR/PET certified and approved for regular use in patients

MR scanning has not been established as safe for imaging fetuses and infants less than two years of age.
The responsible physician must evaluate the benefits of the MR examination compared to those of other imaging procedures;
The results by Siemens' customers described herein are based on results that were achieved in the customer's unique setting. Since there is no "typical" hospital and many variables exist (e.g. hospital size, case mix, level of IT adoption) there can be no guarantee that other customers will achieve the same results.

What if you could improve the life expectancy of liver cancer patients?

SIEMENS Healthineers

Interventional Radiology

University of Texas MD Anderson Cancer Center, Houston, Texas, USA

"While TACE has been around for decades, the recent improvements in intra-procedural imaging have given us the necessary anatomic information to be more targeted and therefore more aggressive with treating liver cancers ."

Michael J. Wallace, MD, Interventional Radiologist
(*5/15/1966 ǂ 5/31/2016)

Challenge

Clinical Capabilities

Patient Outcome

Fight liver tumors that are extremely dangerous, with a very poor long-term prognosis for patients

Healthcare engineering

- Liver tumors can be treated accurately and safely with transarterial chemoembolization (TACE) by precisely guiding the catheter using *syngo* DynaCT

Value contribution

Better understanding of the extent and characteristics of the tumor

Ø 10 mths

Increased life expectancy of liver cancer patients

The results by Siemens' customers described herein are based on results that were achieved in the customer's unique setting. Since there is no "typical" hospital and many variables exist (e.g. hospital size, case mix, level of IT adoption) there can be no guarantee that other customers will achieve the same results.

What if you could reduce complications in spinal surgery below 0.2%?

SIEMENS Healthineers

Surgery

Shonan Fujisawa Tokushukai Hospital
Fujisawa, Japan

"Our system was the world's first system specialized for spine – great for public relations! We realized that even if the system is used solely for the spine surgeries, it can pay off."

Dr. Sohei Ebara, Vice President and Director of the Spine and Scoliosis Center

Challenge

Process Efficiency	Patient Outcome	Reputation
Speed up surgeries and recovery	**Reduce side effects caused by misplacement of screws**	**Avoid patient dissatisfaction and damaged reputation due to secondary operations**

Healthcare engineering

- High-end imaging in the OR with Artis zeego enables improved workflows and more complex procedures for minimally invasive and open spine surgery
- Less invasive procedures can lead to faster operations, faster recovery, and a reduced number of secondary surgeries and complications

Value contribution

-50%	<0.2%	+57%
OR time	Complication rate	Increased number of patients in the period from 2012 to 2014

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What if you could perform LAA closures without general anesthesia?

SIEMENS Healthineers

Ultrasound & Cardiology

Centro Hospitalar Vila Nova de Gaia
Espinho, Portugal

"Using AcuNav V, the interventions only need vascular access – the patient is sedated, and neither general anesthesia nor intubation is needed. This fact decreases the periprocedural patient risk."

Vasco da Gama Ribeiro, MD, Head of the department for Hemodynamics

Challenge

Patient Outcome	Workforce	Financial Performance
LAA closure is a challenging intervention requiring TEE guidance and anesthesia	**Reduce additional staff in the interventional suite**	**Avoid prolonged length of stay**

Healthcare engineering

- Real-time volume intracardiac echocardiography (ICE) imaging eliminates the need for anesthesia, thereby providing safer and more efficient procedures.

Value contribution

30 min	~~intubation/ anesthesia~~	€€€
Successfully occlude a left atrial appendage (LAA) without anesthesia	No staff required for intubation and anesthesia	Sparing patient intubation and anesthesia leads to reduced complications/length of stay

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What if you could increase test volume by 20% with no additional staff?

SIEMENS Healthineers

Laboratory Diagnostics

National Health Service (NHS) Tayside
Dundee, UK

"Siemens looked at our processes, looked at what we were trying to achieve, then – working with our staff – they helped us design the laboratory."

Bill Bartlett, PhD,
Joint Clinical Director of Diagnostics

Challenge

Process Efficiency

Integrate three labs into one

Workforce

Free laboratory staff to focus on higher value tasks

Competitiveness

Provide higher level of service for area hospitals and physician practices

Healthcare engineering

- Consolidation of formerly separated core lab disciplines onto a single automation solution
- Use of data-driven decision making and Siemens consultative expertise to determine the optimal track layout, mix of instruments, and workflow
- Intelligently automated workflows that can handle routine and emergency testing on one track

Value contribution

+20%	0	-61%
Workload per day	Staff increase	Reduced turnaround time for add-on tests

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What if you could reallocate 40% of your lab staff while improving outcomes?

SIEMENS Healthineers

Laboratory Diagnostics

Hospital Clinic de Barcelona
Barcelona, Spain

"Now all the analytical processes, from the loading to the discarding of samples, have been connected to the track. Our technicians only need to load samples to Aptio® Automation. It saves time and reduces biological risk and the probability of errors."

Dr. Jose Luis Bedini, Head of Core Lab

Challenge

Process Efficiency	Workforce	Liability
Increase test volume	**Counter lack of qualified laboratory staff**	**Reduce errors inherent in manual processing**

Healthcare engineering

- Automate all diagnostic testing, as well as pre- and post-analytical processes, while consolidating STAT and routine hemostasis on the same system
- Connecting 16 analyzers and integrating more than 350 assays across clinical chemistry, immunoassay, hematology and coagulation

Value contribution

+48%	40%	- - - -
Tube volume increase per day to 4,800	Staff reallocated from repetitive manual work to more challenging tasks	Reduction of errors in manual processing

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What if you could increase sample volume by 12% and reduce TAT?

SIEMENS Healthineers

Laboratory Diagnostics

North Memorial Health Care
Robbinsdale, Minnesota, USA

"Our relationship with Siemens is priceless. They understand what our needs are and what our mission is and our vision and how they fit into it. We couldn't ask for more."

Adam Grau, Manager Business Development and Sales

Challenge

Process Efficiency

Improve efficiency and turnaround time for all testing

Standardization

Maintain quality of results consistently

Competitiveness

Increase revenue-producing reference services that rival much bigger healthcare system

Healthcare engineering

- Workflow analysis to optimize track design, menu balance, and load balance
- Project management and implementation of Aptio® Automation, CentraLink™ Data Management System, Refrigerated Storage Module
- Post-implementation workflow optimization, training, technical services and support

Value contribution

-19%

Basic Metabolic Panel (BMP) TAT decreased from 32 to 26 minutes

-17%

Troponin TAT reduced to 29 minutes, meeting TAT window 97% of the time

+12%

Reference laboratory sample volume increased

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What if you could be faster and more precise at the same time?

SIEMENS Healthineers

Laboratory Diagnostics

Santa Casa Hospital
Porto Alegre, Brazil

"On top of an increased output, we have much more detailed analyses."

Dr. Carlos Franco Voegeli, Head of laboratory

Challenge

Workforce

Analyze more specimens in less time

Process Efficiency

Decrease turnaround time of laboratory results

Patient Outcome

Optimize the accuracy of analyses

Healthcare engineering

Installation of laboratory automation and data management solutions

- ADVIA® WorkCell® Automation Solution
- CentraLinkTM Data Management System

Value contribution

50%

Increase in test volume

~0

Human errors in laboratory

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What if you could achieve STAT turnaround times of 11.8 minutes?

SIEMENS Healthineers

Laboratory Diagnostics & Consulting

Laboratory Sciences of Arizona, USA
a subsidiary of Banner Health

"Siemens and Laboratory Sciences of Arizona have had a long and positive partnership, […] They are always there to help. That builds trust."

Mary Acedo, Senior Administrative Director of the Clinical Laboratory at Banner Baywood

Challenge

Process Efficiency

Growing number of patients in observation status in the ER lead to an increase in STAT tests

Workforce

Support optimal utilization of workforce and staff satisfaction

Reputation

Meet requirements for Accreditation for Cardiovascular Excellence

Healthcare engineering

Siemens conducted a consulting project to optimize workflow and instrument configurations through joint efforts in:

- Optimization of testing menus
- Rescheduling of quality control and maintenance activities
- Reagent server reconfiguration

Value contribution

Ø 11.8 min

STAT turnaround times/14.7 min. analytical testing turnaround times.[1]

4.2 miles

Annual reduction in unnecessary steps in the lab.

★

Banner Baywood received accreditation as Chest Pain Center.

1) Does not include pre-analytical and post-analytical time
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What if you could assess liver fibrosis in a non-invasive way?

SIEMENS Healthineers

Laboratory Diagnostics & Ultrasound

Hospital Clinic Barcelona (HCB)
Barcelona, Spain

"We already had a very good partnership with Siemens, which paved the way for further projects including new diagnostic methods for better managing liver disease, colon and breast cancer, and the prevention of sudden cardiac death."

Josep Campistol, MD, CEO of HCB

Challenge

Clinical Capabilities	Patient Outcome	Financial Performance
HCB wants to stay at the forefront of clinical research	**Accurate, timely staging of liver fibrosis for appropriate treatment**	**Avoid costly and resource intense testing**

Healthcare engineering

Joint research project on non-invasive diagnostic methods for liver fibrosis, combining

- Lab test based on a set of blood biomarkers
- Acoustic Radiation Force Impulse (ARFI) Imaging, an ultrasound technology providing information on the complete organ

Value contribution

100%	-96%/-18%	>90%/~99%
Avoided biopsies	Mortality reduction for Hepatitis C by 96%, for Advanced Liver Disease by 18%	Cost effectiveness at > 90% for Hepatitis C and 99% for Advanced Liver Disease

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What if your physician office could reduce efforts and costs?

SIEMENS Healthineers

Point of Care Testing

Massachusetts General Hospital
Boston, Massachusetts, USA

"The economic benefits of POCT may be realized in both fee-for-service and global payment environments."

J. Benjamin Crocker, et al. Am J Clin Pathol, Nov 2014; 42:640-646

Challenge

Process Efficiency	Reputation	Financial Performance
Ordering laboratory tests after a primary care visit requires follow-up calls with the patient	**Ordering laboratory tests after a primary care visit may require revisits by the patient**	**Tendency to order unnecessary tests for physician and patient convenience**

Healthcare engineering

- Implementing Point of Care laboratory testing in the primary care practice allowed to reduce turnaround time and improve operational efficiency

Value contribution

-89%/85%	-61%	-21%
Follow-up calls /follow-up letters	Revisits	Tests ordered per patient

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What if you could speed up diagnosis and enhance diagnostic accuracy at the same time?

SIEMENS Healthineers

Point of Care Testing & Molecular Imaging

Floyd Medical Center
Rome, Georgia, USA

"We anticipate the approaching changes and have put in place the necessary measures for improvements."

Alison Land, Vice President

Challenge

Patient Outcome	Process Efficiency	Financial Performance
Achieve gold standard of 90 minutes door-to-balloon time	**Quickly identify patients with Acute Coronary Syndrome**	**Reduce readmission rate for patients with chest pain**

Healthcare engineering

Emergency department equipped with

- Dimension® EXL™ 200 Integrated Chemistry System STAT lab
- Symbia S with IQ SPECT cardiac software

Value contribution

Less than ½ time	-10 min	-63%
Stress tests now in Ø 10 minutes instead of 27	Faster troponin test results	Decrease in readmission rates for heart attack and heart failure

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What if you could drastically reduce system downtime?

SIEMENS Healthineers

System Services

Ruijin Hospital
Shanghai, China

"Before, in the case of failure, we had to first identify what the problem was, then call a technician by phone. This has changed."

Dr. Haipeng Dong, Deputy Director of the Radiology Department

Challenge

Process Efficiency	Reputation	Patient Outcome
Reduce downtime of medical equipment	**Avoid loss of patient trust**	**Provide optimized time-to-treatment in emergency cases**

Healthcare engineering

- The digital fleet management portal LifeNet offers real-time data on equipment status via a web interface and the possibility to transmit failures electronically to the Siemens support desk

Value contribution

Reducing avoidable downtime and system failures	Speeding up initiation of repair process	**24/7** Web interface

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What if you could get financing, equipment, and service from one source?

SIEMENS Healthineers

Financing & Managed Equipment Services

Ommelander Ziekenhuis Groningen (OZG)
Groningen, Netherlands

"Thanks to their knowledge of what comparable hospitals work with in terms of equipment they gave us good advice… It's from these discussions that the added value comes. And Siemens is clearly in the relationship for the long-term."

Rinze Visser, director of Finance and Procurement at OZG

Challenge

Financial Performance	Overhead Burden	Liability
Banks are reluctant to fund both new buildings and new equipment	**Keeping capital costs low**	**Mandatory regular technology service and its documentation**

Healthcare engineering

A solution was developed:

- To finance the new hospital, Siemens Financial Services joined forces with OZG's principal bank, ABN AMRO. Together both parties are investing 58 million euros in the project.
- To cover the installation, management, maintenance, and regular replacement of the relevant medical equipment.

Value contribution

58 mio €	15 years	★
Financing project, out of a total investment of 110 mio €	Constant technology updates and upgrades for the tenure of the contract	Siemens shares the responsibilities and risks

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What if you could improve patient outcome while increasing overall profitability?

SIEMENS Healthineers

Comprehensive Stroke Solution

Rush University Medical Center
Chicago, IL, U.S.

„Jointly with Siemens Healthcare we uncovered potential for cost reduction, bringing the cost per stroke case down by 11.2%.“

Wendy Stark-Riemer, MHA Neurosciences Service Line Administrator

Challenge

Patient Outcome

Improve outcome and quality of life for stroke patients

Process Efficiency

Optimize processes to shorten door-to-needle times

Financial Performance

Increase overall profitability

Healthcare engineering

- Support during the planning and construction phase. Site planning taking into account process efficiency aspects and on-site coordination via dedicated project manager
- Consulting for optimization of clinical processes and workflows
- State-of-the art imaging modalities to advance clinical capabilities and drive reputation
- Asset and fleet optimization via IT analytics to standardize quality of care and ensure maximized returns

Value contribution

-33%

Reduction in the degree of severity of symptoms at discharge

-27%

Reduction in door-to-needle time

-11.2%

Reduction in cost per case while number of cases increased by 15.1%

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What if you could turn CAPEX into OPEX?

SIEMENS Healthineers

Managed Equipment Services

William Osler Health System
Ontario, Canada

"We now have a great partner who can help us to look at best practices, best workflow and optimal outcomes for patients."

Joe Fairbrother, MD, Medical Director

Challenge

Financial Performance

Patient Outcome

Cut costs while continuing to deliver the highest standard of care and better treatment results

Overhead Burden

Replace obsolete systems while not having the annual budget

Healthcare engineering

- Procurement, replacement and maintenance of some 190 vendor-neutral diagnostic imaging equipment items for radiology and cardiology
- Financing and clinical solutions, professional services, room renovations, training for clinical users as well as onsite technical support

Value contribution

15 yrs

15 years technology partnership in radiology

> 190

> 190 clinical equipment items

100%

Fully financed through Siemens, all equipment purchases converted to OPEX

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What if you could expand your clinical capabilities while saving costs?

SIEMENS Healthineers

Managed Equipment Services

Zaans Medical Center (ZMC)
Zandaam, Netherlands

"The utilization management and project management systems have helped us reach more productive results and efficiency through better response and resolution times."

Martin Borggreve, Head of Radiology *(right)*

Challenge

Clinical Capabilities

Obtain state-of-the art equipment to improve clinical capabilities and offer new examinations

Process Efficiency

Optimize processes and improve operational results

Financial Performance

Support cost effectiveness

Healthcare engineering

13-year partnership contract covering

- Provision of state-of-the-art medical technology
- Maintenance services, upgrades and replacements
- On-site operational management
- Solutions for lean clinical workflow
- Contractual basis for financing a new hospital building

Value contribution

+100
Additional patients examined per month in CT

99.6 %
System uptime exceeds agreed levels

€ 135,000
Annual savings through MES, compared to traditional procurement

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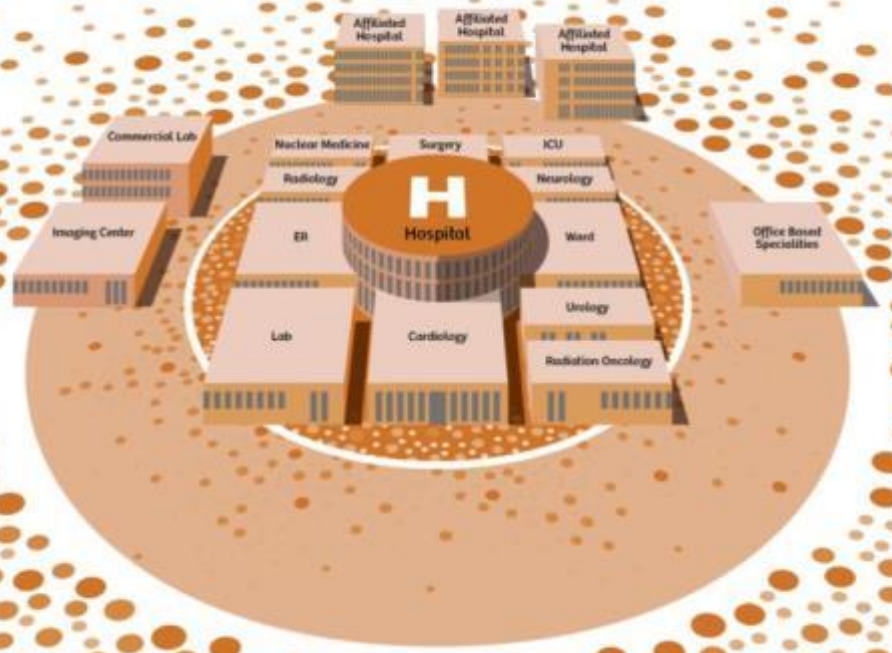
People Transforming the Industry

SIEMENS Healthineers

Trustworthy & reliable

Committed & empowered to serve your success

Resilient partner at your side



Offering **new perspectives** and challenging conventional thinking

Giving access to the **knowledge** of our **worldwide network**

Well-versed with provider operations and challenges

Siemens Healthineers – Jointly Transforming the Way Healthcare is Delivered

SIEMENS Healthineers

Engineering Success

- 120 years of innovation
- Broadest and deepest portfolio
- High-quality products and service

Innovations transforming departments

Pioneering Healthcare

- The nervous system for healthcare providers
- Digital Services
- Enterprise Services

Services transforming systems

Together

- Engineers. Pioneers. Passionate for Healthcare.
- A unique network to transform the industry
- We are where you are

People transforming the industry

SIEMENS
Healthineers

Now's our time to inspire the future of healthcare together

Engineering success.
Pioneering healthcare.
Together.