

Press Backgrounder

Philips Digital Pathology Solutions supports global institutions in their transition to digitized pathology workflows

Introduction

Modern pathology labs are coming under continued pressure to increase throughput and efficiency while maintaining or improving quality, particularly in the diagnosis of cancer. The growing population of older individuals is making cancer more prevalent, with new cancer cases expected to rise 70 percent from 14 million in 2012 to 22 million per year in the next two decades¹. At the same time, the shift towards personalized medicine means pathologists need quality data that helps them target the right therapy for the right patient at the right time.

This increased demand for pathology services is not currently being matched by the supply of skilled pathologists. In fact, there has been more than a 10 percent decrease in active pathologists from 2008 to 2013². Moreover, advances in the field have led to increasing specialization among pathologists, making it even more difficult to balance departmental workloads against available resources. Nevertheless, decreasing the 'time-to-result' in order to speed diagnosis is essential to improving patient outcomes by offering timely and optimal treatment.

The current manual workflows also involve cumbersome processes, particularly around getting second opinions from pathologists at other clinical sites. Glass slides are costly to ship, and their transport can lead to breakage, degrading and delays in decision making. The delay in getting second opinions accounts for 41 percent of delays in cancer diagnosis³.

Pathologists must seek more efficient means to support targeted, patient-specific therapy and accurate, first time right decision-making. Sharing multidisciplinary knowledge assists pathologists in making informed decisions and opening new insights into diseases. Philips enables health care organizations to reinvent the traditional histopathology workflow, enhance operational efficiency and productivity, and improve the confidence in making diagnosis.

IntelliSite Pathology Solution

IntelliSite is an automated digital pathology image creation, management and analysis system comprising an ultra-fast pathology slide scanner, an image management system and case viewer, this is complemented by advanced software tools to manage the scanning, storage, presentation, research analysis and sharing of information.

¹ World Health Organization - World Cancer Report 2014

² US figures - AAMC 2014

³ National Patient Safety Agency - March 2010

IntelliSite speeds and simplifies access to histopathology information across the pathology laboratory and beyond to help pathologists to work more efficiently. IntelliSite is the innovative pathway for the pathology world, advancing towards predictive health management, and ultimately better patient outcomes.

Philips IntelliSite Pathology Solution is CE marked for primary diagnostics in the EU, Singapore and Health Canada. In the U.S., Philips IntelliSite Pathology Solution is cleared by FDA for diagnostic use in the evaluation of HER2 expression in breast cancer and is offered for research use (RUO).

The Essentials of Digital Pathology

- *Digitize workflow*
IntelliSite helps your pathologists organize and review a large number of cases quickly and with ease. Scanned slides can be accessed by specialists from virtually anywhere, helping you streamline processes, reduce turnaround time, with the aim to enhance the quality of care.
- *Connect pathologists*
Pathologists are an integral part of the health care team. Remote communication and collaboration is a challenge. IntelliSite offers embedded tools to connect people and locations so expert opinions are available quickly and specialized pathology resources can be shared across and beyond the enterprise.
- *Unify patient data*
Today's treatment plans are based on a broad set of clinical data. IntelliSite is developing connections to provide physicians with exceptional cross functional integration and enable aggregated views of a patient's clinical work-up.
- *Gain new insights*
A powerful attribute of digital pathology will be the enablement of analysis of large sets of clinical data. Image analytics and 'Big Data' observations have the potential to enable new therapies and ultimately improve patient outcomes.

Customer Proof Points

Netherlands Lab Becomes First to Achieve 100 Percent Digital Diagnosis (*Digitize Workflow, Connect Pathologists*)

[LabPON](#) became the first clinical pathology laboratory in the world to transition completely to digital diagnosis. As the largest pathology laboratory in the Netherlands, LabPON is consulted on more than 54,000 histological cases each year, which translates to more than 300,000 slides of human tissue. Each of these slides needs to be prepared, analyzed, diagnosed, reported and archived every year. Digitizing images with the Philips IntelliSite Pathology Solution eases collaboration across sites and reduces costs. Improved cooperation also allows access to specialists, engendering multidisciplinary discussions to share expertise and knowledge to ultimately come to a better diagnosis for the patient.

Supporting Archiving in Singapore (*Digitize Workflow, Connect Pathologists*)

Singapore General Hospital (SGH), the flagship hospital of the country's public healthcare system, recently implemented the world's largest digital pathology installation in its diagnostic laboratory. To handle its more than 50,000 pathology cases a year, SGH will leverage more than

1.6 petabytes of disk storage and 1.6 petabytes of tape archiving storage to avoid the challenges of storing glass tissue slides – like loss, breakage, degrading or manual archiving errors – and reduce the physical space needed to manage all of these records.

Full Scale Installation in Belgium (*Digitize Workflow*)

The AZ Sint Jan in Brugge, Belgium completed a full-scale installation that is designed to accommodate full digital histopathology diagnosis. Recognizing that a short transitional process to digital would save a great deal in efficiency and costs, the lead pathologist Dr. Van den Berghe opted to avoid a gradual transitioning strategy by coordinating a full digital implementation to benefit from this new way of working.

Collaboration, consultation, and outreach (*Digitize Workflows, Connect Pathologists*)

IDEXX Laboratories is a global market leader in veterinary services with 41 Reference Laboratories' centers of excellence around the globe. IntelliSite will streamline IDEXX veterinary pathology and histology operations, improving turnaround time for customers. The use of web-based tools will provide flexibility in day-to-day operations and give veterinarians convenient access to subject-matter experts.

Providing remote diagnostic services across Austria (*Connect Pathologists*)

In Austria two private pathology laboratories in Hall in Tirol and St. Pölten provide diagnostic services for hospitals and private medical centers across Austria. To speed up sample diagnosis and to implement interactive consultation of experts for the patients, Dr. Soleiman is creating an international network of pathologists by transitioning to an entirely digital workflow with about 200,000 histology slides per year with the Philips IntelliSite solution.

Expanding Teams through Virtualization in the UK (*Connect Pathologists*)

Sheffield Teaching Hospitals (STH) NHS Foundation Trust will partner with Hull and East Yorkshire Hospitals NHS Trust to develop a service for remote digital reporting of pathology cases. By addressing the long standing problem of a shortage of histopathologists in the United Kingdom this unique collaboration for the UK enables the partners to offer their service to other hospitals in the Yorkshire and Humber region and beyond and facilitates access to subspecialised diagnostic histopathology service for all patients. The system is designed to scale should more sites and pathology laboratories join this collaboration.

Germany's largest telemedicine platform goes online with Philips (*Unify Patient Data*)

The "CCS (Carus Consilium Sachsen) Telehealth Ostsachsen" platform is provided by the Carus Consilium Sachsen GmbH, a subsidiary of Dresden's university clinic and the Telekom-subsiary T-Systems International. The European pilot scheme offers a broad range of possibilities in networked medical care and is intended to overcome former limitations in healthcare for the entire region Eastern Saxony. Incorporating digital pathology pathologists have the opportunity to analyse digitally captured tissue samples and to digitally consult a council of other specialists with the aim to improve patient diagnosis.

Mount Sinai builds a rich clinical repository (*Gain New Insights*)

Philips is collaborating with Mount Sinai Health System in New York, NY to advance clinical research through the development of a new digital pathology repository and advanced analytics. By digitizing hundreds of thousands of tissue samples and combining these with related diagnostic data, treatment data, and outcome data, unique insights may enable the

development of predictive analytics to help further personalize patient care for complex diseases, including cancer.

Glossary

CE – The **CE marking** (an acronym for the French "Conformite Europeenne") certifies that a product has met EU health, safety and environmental requirements.

HER2 – An abbreviation for human epidermal growth factor receptor 2, HER2 is a transmembrane tyrosine kinase receptor and is expressed by, and involved in the growth of, some cancer cells.

Histopathology – The microscopic examination of tissue in order to study the manifestations of disease. In clinical medicine, **histopathology** refers to the examination of a biopsy or surgical specimen by a pathologist, after the specimen has been processed and histological sections have been placed onto glass slides.

IVD – An acronym for "In Vitro Diagnostics," which test a sample of tissue or bodily fluids.

Petabytes – A multiple of the unit byte for digital information, and a unit of data storage capacity equal to 1,024 terabytes (250 bytes). The prefix peta indicates the fifth power of 1000 and means 10^{15} in the International System of Units (SI). One petabyte is one quadrillion (short scale) bytes, or one billiard (long scale) bytes.