



PHILIPS

Healthcare

Transformation Services

Strategy development for ultrasound services

Philips Healthcare Transformation Services helps Rijnstate increase their efficiency and fine-tune their ultrasound strategy

Who/ where

Rijnstate comprises two hospitals and two outpatient clinics in the eastern part of The Netherlands. They are a care provider with 955 beds providing 28 medical and surgical specialties for approximately 45,000 inpatients and over half a million outpatient visits annually.

Challenge

The Ultrasound Services team were experiencing challenges to meet their targeted capacity which created waiting lists for outpatients and put pressure on their one-day inpatient service. At the same time, they experienced an increase in the number of other parties in the field performing initial ultrasounds which also influenced their work.

Solution

Philips conducted an internal and external performance assessment, provided change recommendations, and collaborated with a Rijnstate project team to prioritize initiatives and co-create a strategy to increase available ultrasound capacity, enhance staff development, and ultimately improve their market share.

Results

Workflow improvements have been implemented and have contributed to a production increase of over 30% in the outpatient clinics compared to the same period last year. The Rijnstate radiology leadership team was pleased with the project process and results. As additional change recommendations are implemented, they will be measured and tracked on a continuous basis to document progress.

In recent years, the Rijnstate hospitals have made investments in their ultrasound technologies and expanded their ultrasound imaging locations from three to four. Still, they were experiencing challenges in meeting the performance indicators set by management. With the changes happening in their market such as aging population and other parties increasingly performing initial ultrasounds, they believed that they needed to evolve their strategy and approach to ultrasound services to meet the new demands of the patients.

Philips was considered the ideal partner to help Rijnstate develop a new ultrasound strategy due to our extensive clinical, technical, and business experience in the field. The long-term collaborative relationship between Philips and the Rijnstate Radiology Department was also recognized as a positive factor in trusting the team to deliver strategic and sustainable improvement recommendations.

Our approach

The Philips consultants took a holistic approach to the ultrasound services including a workflow assessment and an elaborate market analysis as input for a long-term strategy. They held co-creation sessions with the Rijnstate team to review initial recommendations and obtain feedback for prioritization. Scenarios were developed and evaluated by using predictive financial and operational dashboards.

Workflow assessment

In order to understand the capacity and scheduling challenges, a detailed analysis of the ultrasound workflow was performed at each of the four Rijnstate centers. This included a data exploration of 3 year's historical data of procedure times and scheduling gaps. Discrepancies were found between the timeslots scheduled for procedures and the actual time needed to perform the exams as well as different scheduling allocations across the different centers. For example, in locations where technicians worked more autonomously, shorter exam times were scheduled and realized with lower variations.

The consultants conducted many workflow observations of and interviews with key stakeholders including radiologists, ultrasound technicians, schedulers, and others. These observations and interviews revealed variations in the processing of emergency cases.

Market analysis

In parallel, the consultants performed a market analysis encompassing market demographics, trends, and competitive data. The demographic analysis showed that despite the influx of students and young settlers, especially in the Arnhem-Noord region, the aging population had already begun to rise since 2010. According to the Dutch Central Registration Office, the population of over 65 years old in the Netherlands will increase from the current 16.8% to 26% in 2040. Consistent with the national trend, the number of age-related diseases such as heart disease and cancer are expected to increase in the regions surrounding Rijnstate which will contribute to a growing demand for ultrasound examinations. Direct and indirect competition within a 30 km radius was reviewed and trends such as the increasing number of general practitioners performing initial ultrasounds as well as changes in reimbursements were analyzed. For analysis of the catchment areas, historical data of 2014 was used, see Figure 1.

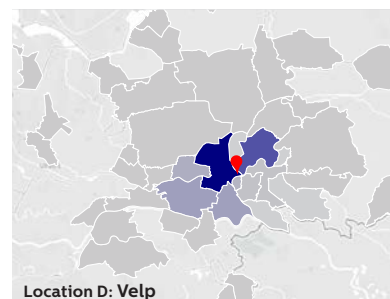
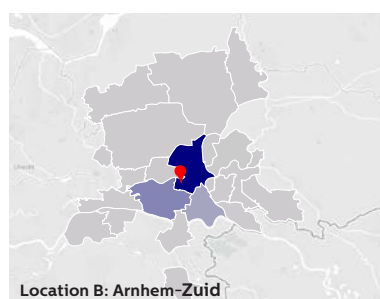
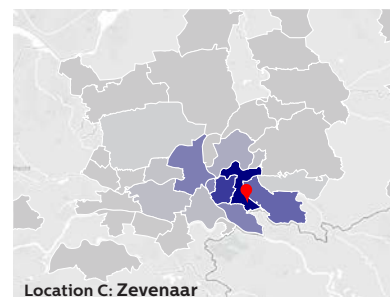
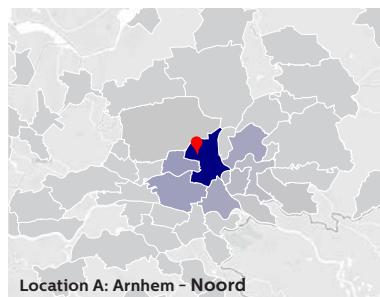
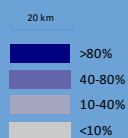
Additionally, a survey was completed by about 300 patients to gain insight in their preferences. Earlier hypothesis was that Hospital locations are preferred over outpatient clinics. The results of the survey, however showed that patients preferred to have ultrasound services closer to home more than type of institute.

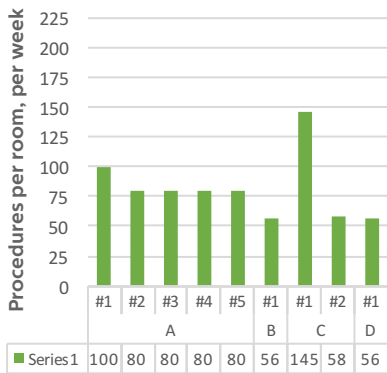
Co-create sessions

Upon completion of the workflow assessment and market analysis, the Philips team presented their insights and initial recommendations to the Rijnstate team. Then, in subsequent sessions, the Rijnstate-Philips project team first evaluated the

Figure 1. Rijnstate hospitals catchment areas - outpatients

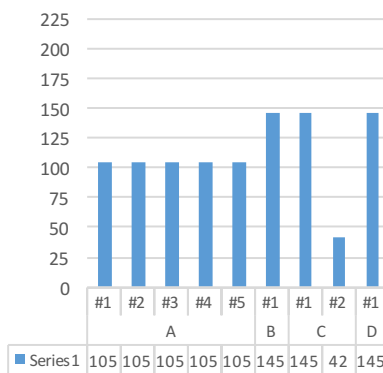
Outpatient preferences to have an ultrasound examination performed close to home is more clearly visible for the clinics: Arnhem-Zuid and Velp than the Hospitals. The large spread visible in the picture of the Hospital in Arnhem-Noord can be explained by its proximity to areas with young settlers and students that may have official residence somewhere else.





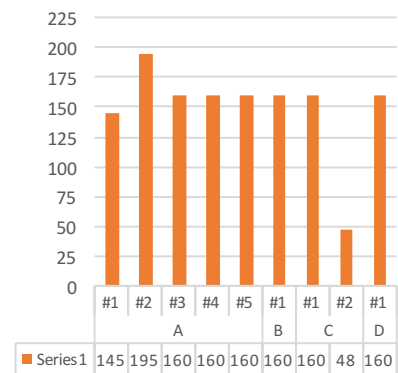
Current state

Total : 735 procedures



Scenario X

Total : 1002 procedures



Scenario Y

Total : 1398 procedures

Figure 2: Scenario dashboards. Comparing optimization scenarios in their capacity increase and financial impact. Visuals take into account the different locations as used

in Figure 1: A,B,C and D and the number of ultrasound rooms per location. In total around 6 scenario's were created with varying working hours, staffing scenarios etc.

recommendations and improvement opportunities and then co-created scenarios for implementation and prioritization. These sessions resulted in a 3-way strategy and an agreement to start-up immediate improvements.

3-way strategy

The strategy development included three work streams to increase ultrasound capacity, grow market share and support ongoing professional staff development.

The first work stream was focused on increasing ultrasound capacity. Several different scenarios were modeled to see which changes would have the greatest impact. Recommendations included adjusting opening hours, changing staff breaks, adjusting the operating days for the ambulatory units and reducing variations by defining consistent exam time blocks. A target of at least 36% increase in diagnostic procedures in two years' time was agreed upon. Performance dashboards provide easy review of the impact on capacity, revenue, costs, and staff requirements. Our consultants created custom dashboards to evaluate different scenarios based on the set criteria, see Figure 2.

A second workstream concentrated on growing market share. The Rijnstate-Philips team agreed an enhanced communication strategy was needed. First steps would be to set up online as well as offline communications, aimed at responding to the needs of the referrers and patients. Recommendations to respond to the needs of patients included developing capabilities to offer more scheduling opportunities for patients and introduce walk-in services.

Ongoing professional development was the focus of the last workstream. In order to improve the consistency of the ultrasound procedures across the different locations, the consultant team worked together with the Rijnstate team to create, evaluate, and monitor staff competency profiles and personal development plans. Philips specialists assisted in the development of guidelines for this, see Figure 3.

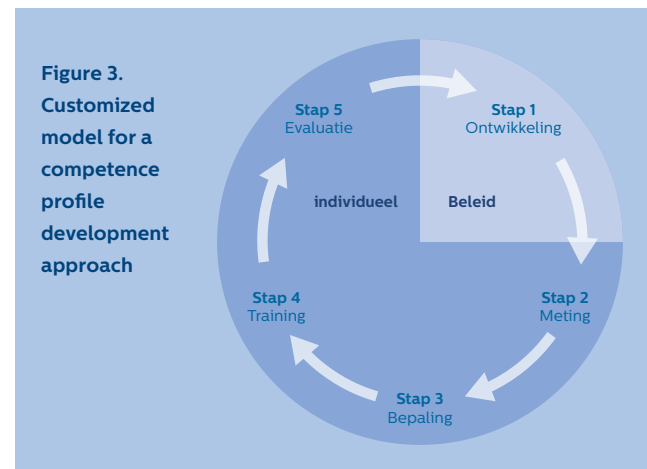


Figure 3a and 3b Examples of competence profile circles



With the implementation of the “quick win” improvements we managed to redistribute patient load to our outpatient centers. This benefits our patients as they can be scanned closer to home and at the same time our hospitals can focus on inpatient- and emergency care.

Ronald Niekel, radiologist



Results

Some ‘quick win’ improvement initiatives were agreed upon and implemented while the consultants were still on site to streamline processes and reduce waiting times.

- Protocols for the transfer of clinical information between the ultrasound technician and radiologist were aligned
- Time slots were adapted to the actual exam time durations.
- The way of working around emergency cases has been altered. Planning is now performed by administration and funneled to two rooms.

The Rijnstate team was pleased with these early initiatives. While the overall growth in Ultrasound procedures remained roughly 5-10% the production in the outpatient clinics increased with over 30%, effectively redistributing patient load.

As they are committed to following the strategic recommendations, Rijnstate should continue to increase their capacity as well as improve their market penetration and contribute to their staff development. As additional change recommendations are implemented, they will be measured and tracked on a continuous basis to document progress.



Learn more

Through collaborative and patient-focused engagements, Philips Healthcare Transformation Services can help you unlock insights and opportunities to solve your most complex challenges of care delivery. We can help you achieve meaningful and sustainable improvements in clinical excellence, operational efficiency, care delivery, and financial performance to improve value to your patients. For more information, please visit www.philips.com/healthcareconsulting.



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