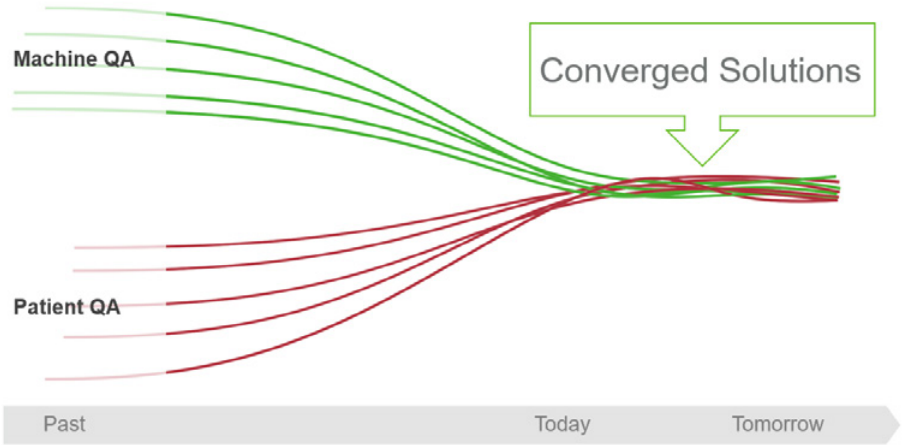
IBA Dosimetry: Innovating and Evolving Quality Assurance

The European Federation of Organisations for Medical Physics

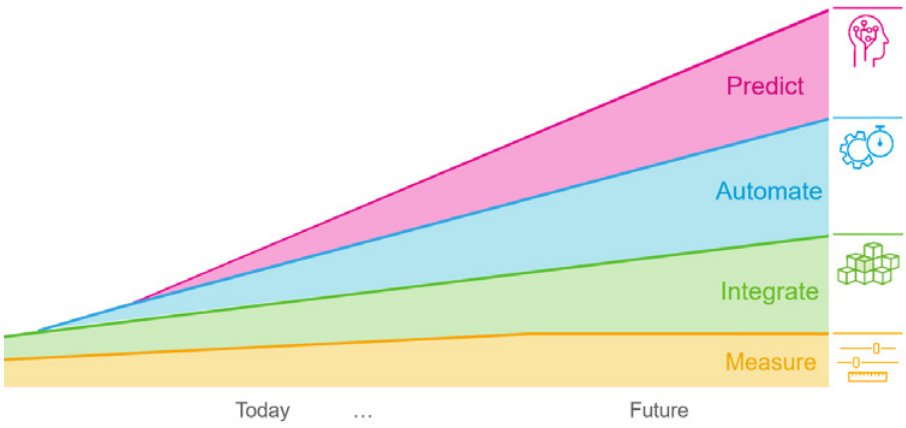
For 50 years, IBA Dosimetry has been offering Quality Assurance (QA) solutions that maximize efficiency and patient safety for Radiation Therapy, Proton Therapy, and Medical Imaging. Through this experience, we understand the unique pains Medical Physicists are facing. It is recognized that QA can be time consuming and complex, and executing high-quality QA on a short timeline with minimal resources is an everyday challenge. We need to evolve QA from where it is today. What does the future hold? Let's have a look at how IBA Dosimetry is leading the evolution of QA.

Today, QA applications for validating the Linac and for checking the patient specific plan and treatment are separate, with little or no connectivity. Does this separation always make sense? Doesn't a patient QA result provide valuable insights about the machine behaviour beyond standardized machine QA tests? The smart combination of results and insights from **both patient QA and machine QA** will unlock the potential of real risk-based QA in Radiation Therapy. For an all-embracing solution, both strings need to converge, allowing better outcomes and faster results.

At IBA Dosimetry, innovative and evolved QA solutions are based on 4 pillars: **Measure, Integrate, Automate, and Predict**.



The smart combination of data and insights from both machine QA and patient QA enables more meaningful analysis and better-quality results.



The innovation roadmap of IBA Dosimetry is defined based on four pillars that will significantly reduce QA times and further streamline the medical physics workload and improve the quality of QA.

Measure: Measuring physical properties is an important method to validate the quality of radiation delivery. However, we believe that the amount of physical QA measurements can and will decrease over time, allowing more efficient workflows. Taking less measurements will require even higher accuracy for the few remaining measurements, and we will need to provide alternatives that compensate for fewer data points. myQA® Daily is a recent example of how IBA Dosimetry has advanced measurement-based QA by bringing higher accuracy and faster workflows.

Integrate: QA integration goes beyond exchanging data or connecting devices. Integration allows for a seamless user experience across devices, modalities and systems, and provides the base for automation. IBA Dosimetry developed the first solution that integrates patient QA and machine QA on a single platform, the myQA Platform. This approach drastically reduces QA time while increasing precision.

Automate: Automation of repetitive tasks helps the Medical Physicist to focus on what really matters and provides confidence and peace of mind. An example of smart automation of QA is the SMARTSCAN™ solution that enables automated and guided beam commissioning and annual QA. SMARTSCAN™ defines the most efficient scan-

ning queues, automates repetitive tasks, and consistently checks the quality and plausibility of your scans. Consequently, SMARTSCAN™ automation ensures you have the best possible data quality in the shortest time.

Predict: QA workflows can be significantly shortened by reducing the amount of physical measurements needed. The combination of computational power, reliable simulation, and the use of artificial intelligence builds the foundation for predictive QA. IBA Dosimetry offers two clinically used products featuring a Monte Carlo dose engine. Both the SciMoCa™ dose engine for all major Linac based Radiation Therapy and the dedicated Monte Carlo dose engine for Proton Therapy with myQA® iON enable highest specificity and sensitivity for detecting the real dosimetric issues and errors.

In addition, we are committed to ensuring I**ndependent QA**, as in many cases an independent check will provide essential insights and will help the Medical Physicist in making safer and more reliable decisions.

At IBA Dosimetry, we shape the future of QA in the pursuit to advance patient safety. We are convinced that our innovations bring the accuracy and efficiency of QA to a new level and will significantly reduce QA times and further streamline the medical physics workload. We invite you to discover details of our roadmap to innovate and evolve QA at https://www.iba-dosimetry.com/about-iba-dosimetry/innovations-qa/

Andreas Lämmerzahl, Executive Director R&D at IBA Dosimetry, started his professional career after a study in Business Information at Dresden Technical University. He has a track of more than 20 years of successful Management, Technical Leadership & International Consulting in R&D for Medical Devices, Pharma Industries, Publishing & Directories Business.