Frequently Asked Questions

PlanIQ™

Eliminate the plan quality gap, and save time in the process. PlanIQ makes sense of your clinical goals on a patient-specific basis, and tells you not only if the goals are feasible, but how you can do better. PlanIQ scores your treatment plans based on clinical goals and feasibility, quantifying treatment plan quality. The result? PlanIQ eliminates the infinite loop on what is achievable, and what is quality.

Metric ID	PlanIQ Result	Goal [1]	Goal [1] Feasibility	Goal [2]	Goal [2] Fea
[PTV_5600] V[53.2Gy] (%)	100.0000	> 90	Probable	≥ 95	Probable
[PTV_5600] V[53.2Gy] (%)	100.0000	> 98	Probable	≥ 100	Probable
[PTV_5600] V[58.8Gy] (%)	0.0000	< 10	Challenging	≤ 0	Challenging
[PTV_5600] D[0.03cc] (Gy)	56.0010	< 61.6	Challenging	≤ 57	Difficult
[CTV_5600] V[56.0Gy] (%)	100.0000	> 94	Probable	≥ 99	Probable
[PTV5040] Conformation Number [47.88Gy]	0.9982	> 0.5	Probable	≥ 1	Impossible
[CTV_5040] V[50.4Gy] (%)	100.0000	> 94	Probable	≥ 99	Probable
[PTV5040-PTV5600] V[50.4Gy] (%)	99.9585	> 90	Probable	≥ 95	Probable
[PTV5040-PTV5600] V[47.88Gy] (%)	99.9737	> 98	Probable	≥ 100	Difficult
[PTV5040-PTV5600] V[52.92Gy] (%)	0.0465	< 50	Challenging	≤ 15	Challenging
[RECTUM_] V[50.4Gy] (%)	45.0515	< 20	Impossible @ 100% Coverage	≤ 0	Impossible
[RECTUM_] V[40.0Gy] (%)	57.5814	< 60	Difficult	≤ 40	Impossible
[BOWEL_TOTAL] V[50.4Gy] (cc)	156.9857	< 250	Difficult	≤ 160	Difficult
[BLADDER_] V[50.5Gy] (cc)	0.4337	< 80	Probable	≤ 50	Difficult
[BLADDER_] V[40.0Gy] (%)	23.3335	< 60	Probable	≤ 40	Probable
[BM-PTV5040] V[20.0Gy] (%)	16.7310	< 90	Probable	≤ 75	Probable
[PERIPHERAL_RING] V[40.0Gy] (cc)	0.0000	< 100	Probable	≤ 10	Probable
[PTV5040] Volume of Regret [50.4Gy] (cc)	2.2491	< 500	Probable	≤ 100	Challenging

Q: How does PlanIQ save planning time?

A: Plan IQ saves planning time in two ways. PlanIQ alerts you at the very start of the planning process if any of the prescribed clinical goals for a specific patient are not achievable. This saves time for clinical staff involved in treatment planning and plan approval, because time is not wasted discovering and debating what is achievable. PlanIQ also provides DVH Feasibility curves for each OAR to help you know what clinical goals are appropriate for a specific patient.

Through the plan quality metric (PQM) score, a clinician can confidently know during the planning process whether they have reached realistic limits achievable for a specific patient's plan through comparison against accumulated quality metric scores for the same/similar treatment site.

Q: How does PlanIQ improve plan quality?

A: PlanIQ improves quality in several ways. Feasibility DVHs alert you if a better DVH is attainable and if so, how difficult it will be to achieve those values. This feedback is provided in real time and aids the treatment planner in the optimization of treatment plans.

Plan Quality Metrics, for the entire plan, as well as for all targets and OARs, provide quality scoring that allows you to quantitatively assess quality for a given patient and a given protocol. This scoring goes well beyond simple pass/fail criteria for clinical goals and objectives. Choose from over 70 pre-defined recommended protocols from RTOG, TG-101, Quantec, and more, to grade your specific plan quality. PlanIQ also provides the ability to modify protocols or create new ones based on your specific practice guidelines.

Knowledge based auto-planning relies on a library of high quality plans to generate high quality plans automatically, otherwise it is garbage in, garbage out. PlanIQ allows you to qualify treatment plans before they are added into the knowledge based auto-planning library, ensuring you have the best quality plans from which to commission and base your auto-planning on.

Q: Is PlanIQ simply checking my clinical goals (objectives)?

A: No, PlanIQ does much more than simply verify if clinical goals were achieved. First, PlanIQ validates if your clinical goals are achievable using a unique and patented process, and provides clear feedback on what is clinically achievable for each OAR. This saves time and drives higher quality plans before planning even begins. Second, PlanIQ evaluates the specific anatomy of a patient and their treatment plan, and assigns a PQM (Plan Quality Metric) score to the overall plan, and individual scores to each target and OAR. This also drives quality improvement.

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Q: Does PlanIQ help me to optimize my treatment plan?

A: Yes. PlanIQ does not optimize a treatment plan, but it does analyze your clinical goals and provides you with a Feasibility DVH for each OAR. Each Feasibility DVH is a graphical representation of the feasibility of achieving any given DVH for the OAR. Feasibility is graphically depicted for each dose and volume point on a 2D plot.

Q: How does PlanIQ's PQM calculation work?

A: PlanIQ's PQM calculation works by taking the acceptance criteria established a priori for each clinical goal and assigning a score based on the current planned dose volume. PlanIQ takes this process beyond simply assigning a 100% score to a metric achieved (pass) and a 0% score if not achieved (fail). Rather, a score can fluctuate based upon the function specified a priori during the protocol set-up phase (default function is linear). Moreover, the total score assigned to each goal is defined by you as well, thus allowing for establishment of priorities amongst goals.

Q: What is the difference between the PQM and the APQM?

A: PQM stands for Plan Quality Metric. The APQM is the Adjusted PQM. The APQM is like the PQM but it takes into account patient specific anatomical challenges. The APQM will adjust PQM scores to account for unique challenges for a given patient as seen in the DICOM CT file, ensuring consistent scoring across all patients for a given case type, regardless of variation in the patient's anatomy.

Q: How does PlanIQ's feasibility calculation work?

A: PlanIQ's patent-pending process utilizes the target prescription information to create an idealized dose distribution. This ideal dose distribution is computed in the following manner. First, every volume element inside of the target structure is populated with the prescription dose. Second, dose outside of the targets is computed outward from the edge of each target by ray-tracing and using leaf-edge fall-off dose data to compute the dose for each step along the ray. The end result is an idealized dose distribution (since it is based on the unphysical premise that target dose is completely uniform) using real dose gradient data (since real leaf-edge kernels are used in the algorithm).

Each clinical goal is automatically assessed against the idealized dose distribution. If a clinical goal can be achieved in the idealized dose distribution then it is deemed achievable in reality. If a clinical goal cannot be achieved with the ideal dose distribution then it truly cannot be achieved using any RT delivery system and is thus a waste of time for any professional treatment planner to attempt trying to achieve it in the planning process. This is one way PlanIQ can save your clinic time.

Q: Is PlanIQ a treatment planning system?

A: No.

Q: How long does PlanIQ take to run?

A: Using PlanIQ adds at most 5 minutes per patient if used for both pre-plan clinical goals assessment and post-plan plan quality assessment.

Clinical goals assessment. PlanIQ checks and provides feedback on your clinical goals for a specific patient as soon as the DICOM CT dataset is loaded. Typically this entire process will take one minute at most, but saves significant time in the planning process.

PlanIQ checks plan quality almost instantaneously once the finished treatment plan is loaded.

Q: Can I pick and choose how to use PlanIQ?

A: Yes. Some customers use PlanIQ mostly for checking clinical goals and to get feedback on what is feasible, to help drive the correct clinical goals before planning begins. Some customers use PlanIQ mostly to check and record plan quality once the plan is done. Some customers routinely do both.