

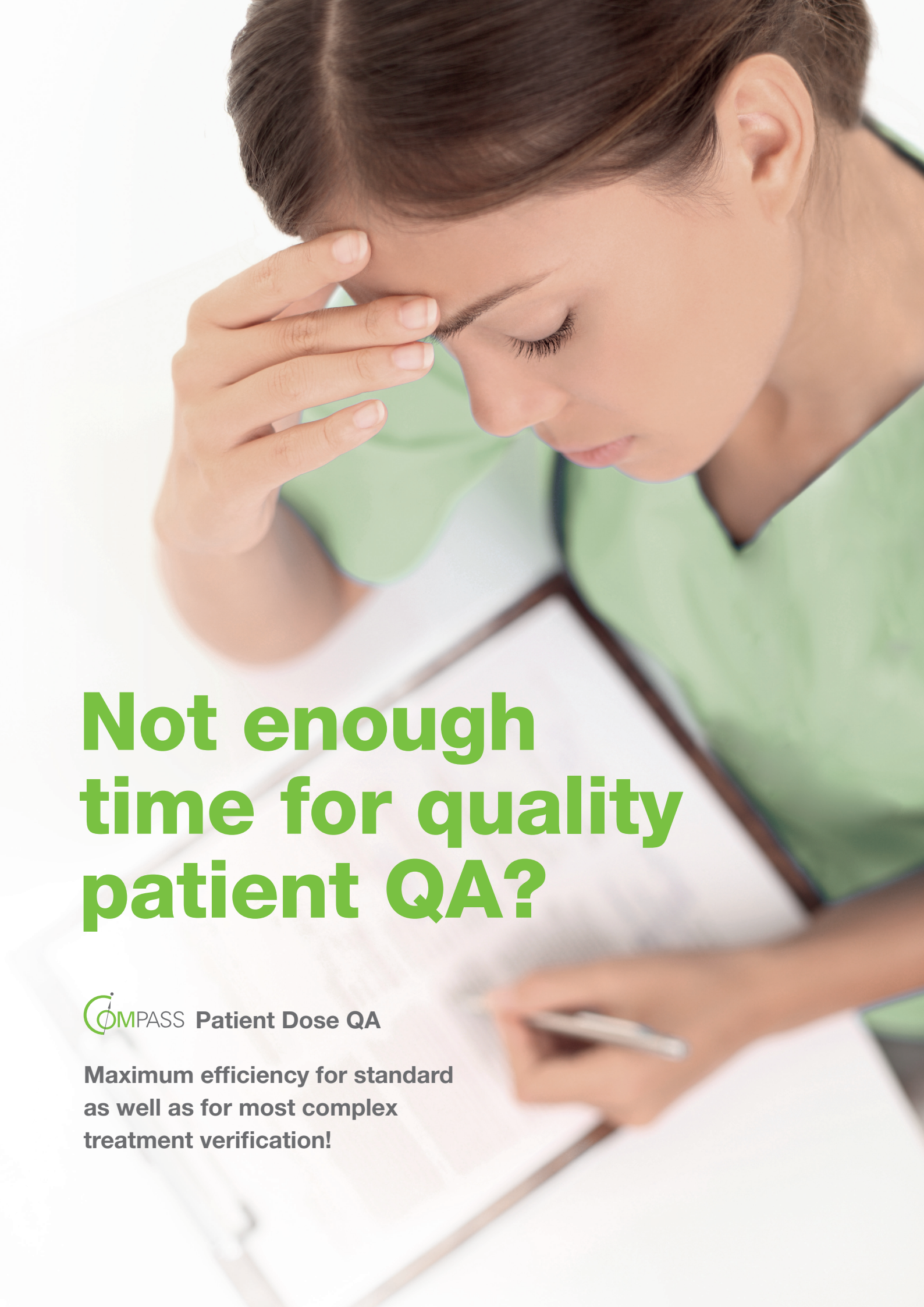


**2-in-1**

# PATIENT DOSE QA

with **COMPASS**





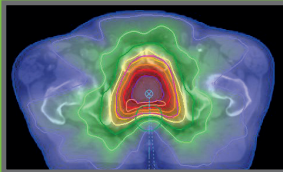
# Not enough time for quality patient QA?

 **COMPASS Patient Dose QA**

**Maximum efficiency for standard  
as well as for most complex  
treatment verification!**

# YOUR 2-IN-1 PLAN VERIFICATION SOLUTION

## Option 1 Calculation-based TPS Check



- ✓ Highest QA Efficiency for standard cases eg. Prostate

### Verify Your TPS Plan

#### Calculation Efficiency:

- ✓ Save time as no hybrid/phantom plan is required
- ✓ Save measurement time and speed up verification
- ✓ Rapid computation times: 7 beam IMRT in less than 1 min & VMAT Arc in 2-3 min

#### Calculation Accuracy:

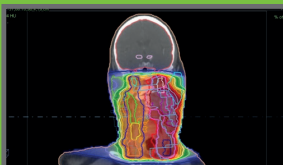
- ✓ TPS class Collapsed Cone algorithm
- ✓ More powerful than simple MU checks
- ✓ Full 3D dose calculation on actual patient CT
- ✓ Template based linac model, fully customizable



### Instant Automatic Verification

TPS Plan

## Option 2 Measurement -based Delivery Check

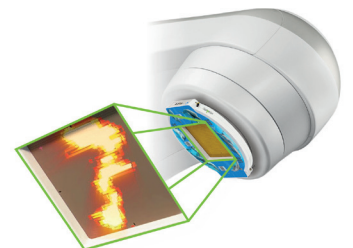


- ✓ Highest QA Safety for complex cases eg. Head & Neck

### Verify Your Entire Treatment Chain

#### Measurement Accuracy

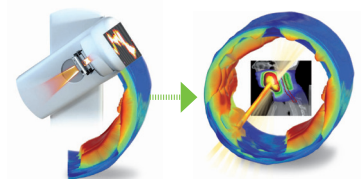
- ✓ High-resolution ionization chamber detectors with 20ms sampling time
- ✓ Avoid vendor dependencies by using a completely independent measurement
- ✓ High-resolution treatment output measurements with Dolphin® or MatriXX detector.



Dolphin® Transmission Detector

#### Measurement Efficiency

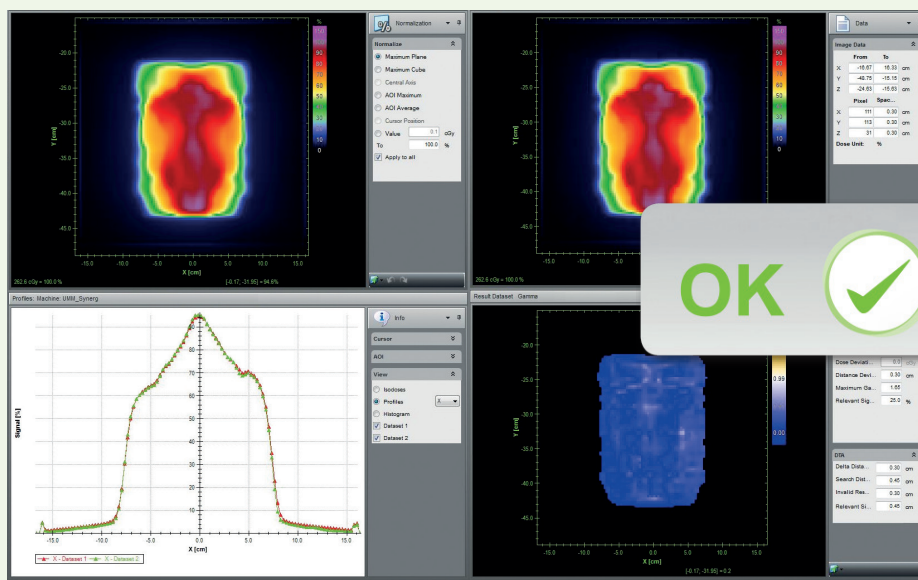
- ✓ Fast & easy detector setup with auto alignment
- ✓ Use your measured data for an instant automatic check or a full 3D dose reconstruction on the patient CT



Gantry based 360° measurements optimized for rotational cases.

# ULTIMATE QA EFFICIENCY

## Instant Automatic Verification



The instant automatic check gives you a “pass” or “evaluate” in seconds.

### Verification Efficiency:

- ✓ Fully automatized fluence analysis
- ✓ Instant QA results: “pass” or “evaluate”
- ✓ Automatic email notification

### Verification Accuracy:

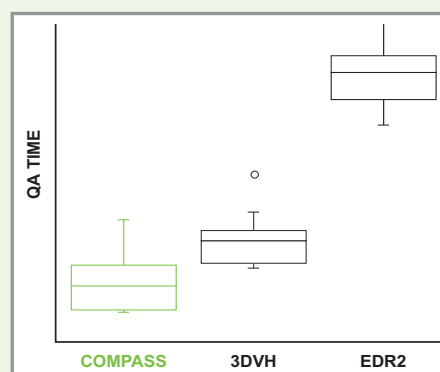
- ✓ Gamma or Dose difference in just one look
- ✓ Automatic evaluation based on your in-house protocols



Optional  
full 3D  
Verification

### QA Workflow Efficiency – save 20 min

*“The COMPASS system provides fast and reliable 3D dose verification for clinical IMRT QA. The COMPASS QA process does not require phantom plans. Therefore, it allows a simple QA workflow.” \**

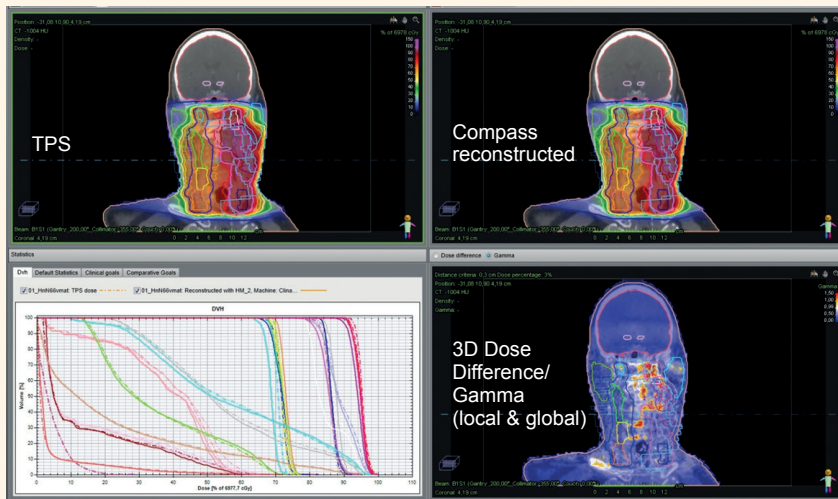


Comparison of QA times between COMPASS, 3DVH, and EDR2 (Film) for 10 clinical IMRT/VMAT plans.\*

# ULTIMATE 3D ACCURACY



## TPS-class full 3D Verification



3D dose reconstruction & analysis in COMPASS.

### Verify the plan in the patient anatomy

Understand the impact of dose discrepancies:

- ✓ 3D dose evaluation on the actual patient CT based on measurements
- ✓ Automatic PTV/ OAR evaluation
- ✓ Proven TPS tool like DVH, 3D gamma and dose difference maps

Optional Step

## Comprehensive reporting

Default Administrator April 25, 2013

### Patient Report

Patient Name : **Acis Head and neck 1**  
 Patient ID : **20051028**  
 Birthdate : **0001-01-01**

Default Statistics

ROE	D95 (cGy)			Average (cGy)			D1 (cGy)		
	Ref	Eval	Diff %	Ref	Eval	Diff %	Ref	Eval	Diff %
Overall	52.9	52.3	-1.1%	1326.1	1331.1	0.4%	1528.4	1536.3	5.1%
PTV	52.9	52.4	-0.9%	1327.8	1363.3	4.2%	1545.3	1555.7	0.7%
PTV2	518.9	523.9	1%	2610.1	2682.2	2.8%	6514.2	6578.4	1%
OARs	5234.8	4811.4	-10.1%	17178.1	17201.7	0.1%	18661.1	18328.4	-1.2%
gmv	2017.5	2030.8	0.7%	7510.7	7519.5	0.1%	7596.4	7688.2	1.2%
gmv	8865.8	8776.4	-1%	7215.9	7778.9	8.1%	7425.8	7424.5	-0.02%

Reference Dose: = Final dose: TPS dose Evaluation Dose = Final dose: Compass Computed Dose, Machine: L\_Elekta Pract\_1 - Uncommissioned

DVH

Final dose: TPS dose = ...  
Final dose: Compass Computed Dose, Machine: L\_Elekta Pract\_1 - Uncommissioned = ...

Easy protocol setup according to your reporting needs.

# 2-in-1 Patient Dose QA with COMPASS in a nutshell

## Maximize Efficiency

- ✓ Flexible plan import with full DICOM conformance
- ✓ All patient data centralized in MS SQL Server database
- ✓ Fast template-based installation, fully customizable
- ✓ Rapid computation times: 7 beam IMRT in less than 1 min & VMAT Arc in 2-3 min

## Minimize Errors

- ✓ Pass/Fail based on your protocol
- ✓ Replace human subjectivity
- ✓ Verify the source of deviations and evaluate the clinical relevance
- ✓ TPS class collapsed cone algorithm
- ✓ Auto email notifications

## Better Outcome

- ✓ Ultimate QA flexibility for simple as well as complex cases
- ✓ Comprehensive reporting
- ✓ Future integration in *myQA* global QA platform\*

## User Experience:

*“The new instant automatic verification enables an assessment to be automatically performed, for all cases, immediately after the measurement terminates. Customised tolerances for the verification assessment can be loaded on import of the plan to identify set-up issues, or unusual deviations from typical results. This helps to quickly identify problem cases so they can be dealt with early.”*

Kevin Brownsword, Medical Physicist  
Castle Hill Hospital, United Kingdom

*“The system is the best 3D solution out there. You can get 3D on patient anatomy in only 2 clicks.”*

Mathias Dierl, Head of Medical Physicists  
Clinical Center Bayreuth, Germany

*“We are excited about many of the changes including a more efficient beam modeling process and significantly faster dose calculation.”*

Ryan Rivest, PhD, Medical Physicist  
Cancer Care, Canada

*“The system is such an exciting tool to use which provides us crucial calculation time saving and therefore much faster QA workflow.”*

Ghirmay Kidane, PhD, Consultant Radiotherapy Physicist  
BHR Hospitals, United Kingdom

## Over 55 COMPASS Publications for Clinical & Scientific Background!



Find the publication list on the Compass website.

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