



mim  
Symphony™



The Next Generation in Brachytherapy



## Why MIM?

Ever since introducing fusion and contouring tools for radiation oncology, MIM Software Inc. has been approached by brachytherapists interested in taking their practice to the next level. Long restricted by the decade-old tools available on the market, these experts from around the world saw the potential in MIM® to unleash the power of imaging in brachytherapy planning.

MIM Symphony™ is our response to this unmet demand – truly the next generation in brachytherapy treatment planning.

MIM Software is committed to pushing the envelope of imaging in every one of our product areas. And that's what we've done by introducing MIM Symphony for low dose rate brachytherapy implants.

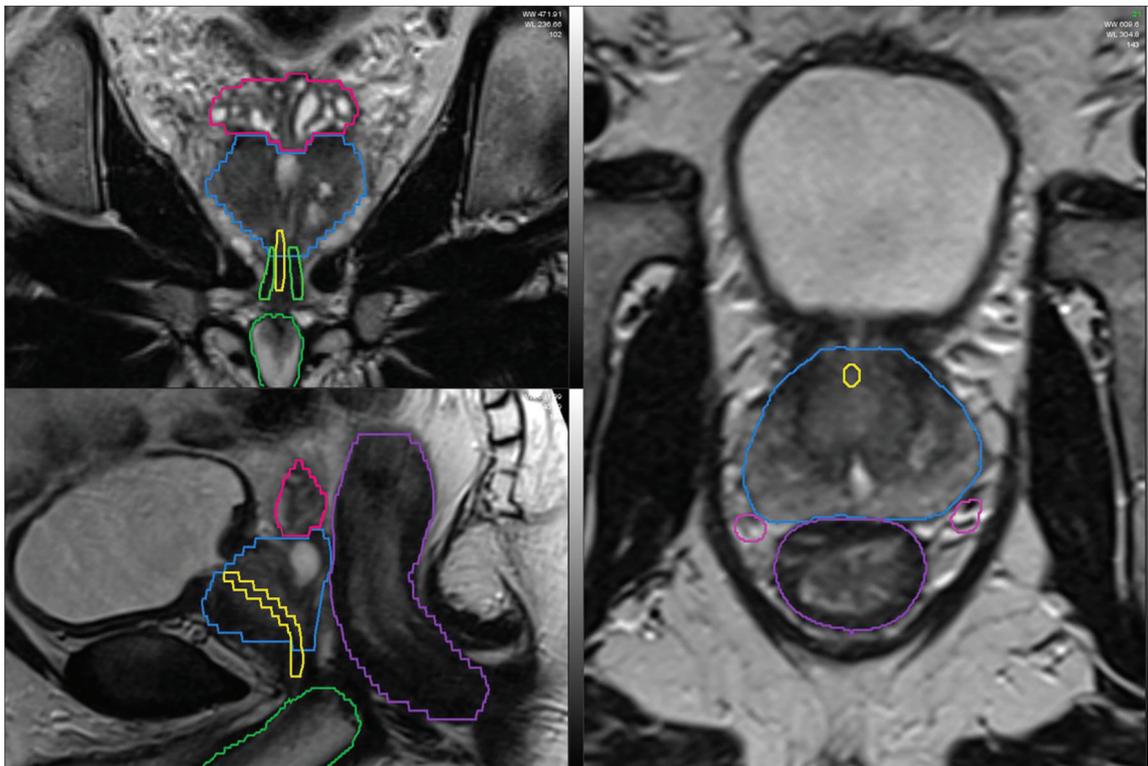
## The MIM Advantage

MIM is a proven world leader in imaging software. With products ranging from diagnosis to treatment planning, MIM allows medical professionals in multiple disciplines to easily and accurately integrate advanced imaging into their practices in ways that are difficult or simply impossible in other software.

As imaging modalities have become more and more powerful, the demand for targeting treatments based on advanced imaging has grown faster than traditional software tools have been able to keep up. MIM has led the charge in effective clinical utilization of these images.

The advantages of the MIM platform are well known to radiation oncology users. MIM Maestro™ has been increasing efficiency and providing essential information to radiation treatment plans for years.

Now with MIM Symphony, there's a treatment planning system for brachytherapy built on the MIM platform with imaging tools that match, or even exceed, the sophistication found in an IMRT planning system.



## Planning

MIM Symphony includes contouring and planning tools which can make any workflow more efficient.

Whether you plan pre-operatively or in the OR, MIM's flexibility and efficiency will save you time in the process. With best in class tools, contouring is a breeze. Assisted planning tools, such as automatic needle loading, combined with quick plan editing allow for plans to be created systematically and rapidly.

Automatic planning with plan libraries can save you even more time by initializing a new plan with the best-matched plan in the library. Plan libraries can be easily built based on your previous implants and are automatically selected in only seconds by matching the contours for your current patient. By selecting previous implant plans, you can be sure that the plan you start with will be consistent with your typical strategy and pattern.

*"Already, MIM Symphony has made brachytherapy planning much easier, much faster for us, and much safer for our patients. The process is more streamlined and the software includes amazing automations like contouring and needle preloading patterns, which were previously impossible to get in any other system.*

*The incredible power of MIM's imaging tools, with so many possibilities regarding image fusion and manipulation, made our plans more accurate. The unparalleled level of support and forward thinking of the company lead me to believe that MIM Symphony is the future of LDR brachytherapy planning."*

**JEAN-PHILPE PIGNOL, MD, PHD, FRCPC**  
**Professor of Radiation Oncology**  
**& Medical Biophysics**  
**University of Toronto and**  
**Sunnybrook Health Sciences Centre**  
**Toronto, Canada**

## Intra-Op

In the OR, speed – without sacrificing quality – is paramount. MIM Symphony was built with this in mind. MIM's guided intra-op planning workflow was built to minimize the number of clicks required to get you through each step. Each tool has been carefully designed to chip away at the time required for every task. From template alignment to contouring to plan construction, MIM Symphony has been specifically designed to optimize your efficiency.

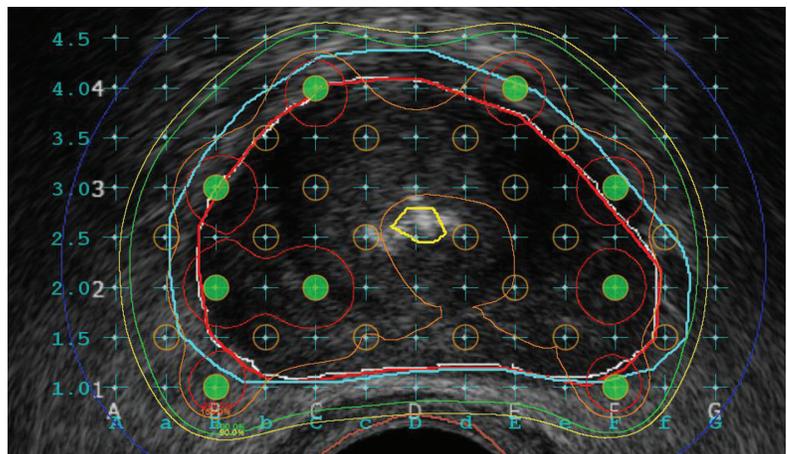
Whether you plan pre-operatively or plan in the OR, everyone can benefit from MIM's intra-op dosimetry tools. MIM's needle shift and deflection models allow you to estimate live dosimetry

during an implant without any special equipment and without slowing you down.

Take intra-op dosimetry to the next level by using an ultrasound captured quickly at the end of the procedure. Further refining deflections based on this final US acquisition can give an even more accurate dosimetric estimate before you leave the room.

No matter which method you use for intra-op dosimetry, you can correct any cold spots in the implant before leaving the OR. And there's no need to fear a misadministration again when you can generate a dosimetric record at the end of every procedure. You can even fuse the end-of-procedure US with a post-op CT to correlate the contours and dosimetry in the room with your final dosimetric evaluation.

“ ”  
*MIM Symphony is the future of  
LDR brachytherapy planning*



## Enhanced Visualization

MR has long been the holy grail of prostate imaging. With its superior soft-tissue contrast and stunning resolution, contouring the prostate and surrounding anatomy is much more accurate than in other modalities.

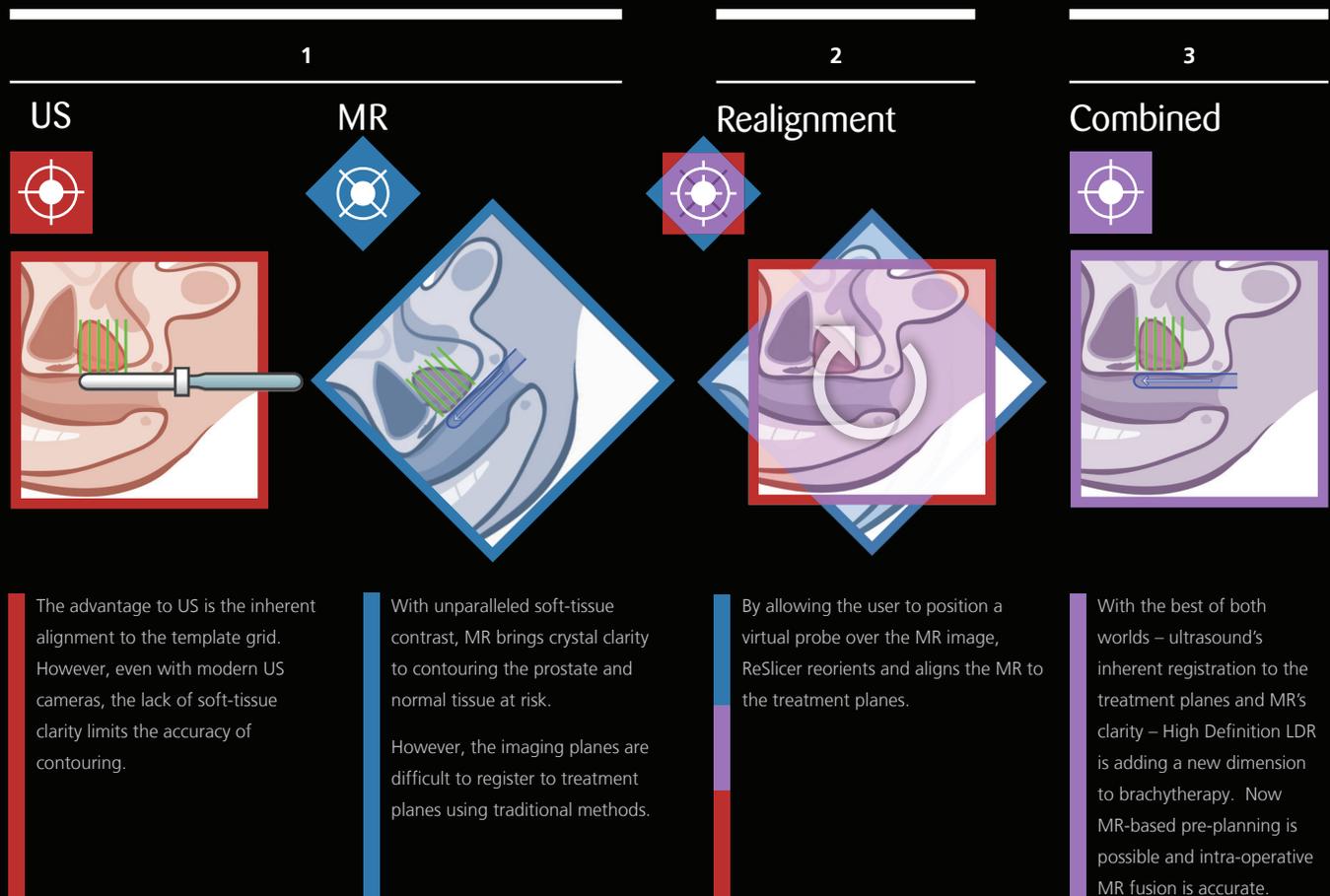
With advances such as diffusion-weighted imaging and dynamic contrast-enhanced imaging, multi-parametric MR imaging is making the picture even clearer.

And MR is flexible; is the axial plane unclear? Sagittal and coronal MR imaging will settle the debate. With coronal MR, contouring the apex of the prostate is a breeze – no worries about whether that is the external urethral sphincter or prostatic tissue like there is with ultrasound.

*“In my opinion, MRI/US treatment planning is the future of prostate brachytherapy, allowing extremely accurate contouring. MIM Symphony has made this planning both accurate and easy, without a dedicated MR suite.”*

*This is the most exciting software advance in prostate brachytherapy in years, and I am impressed with the ease of use of MIM Symphony in both pre- and post-treatment dosimetry. If you wish to improve your implants, this technology is worth a look.”*

**PETER GRIMM, DO**  
Director, Prostate Cancer Center of Seattle  
ProQura  
Seattle, Washington



## A Clinical Reality

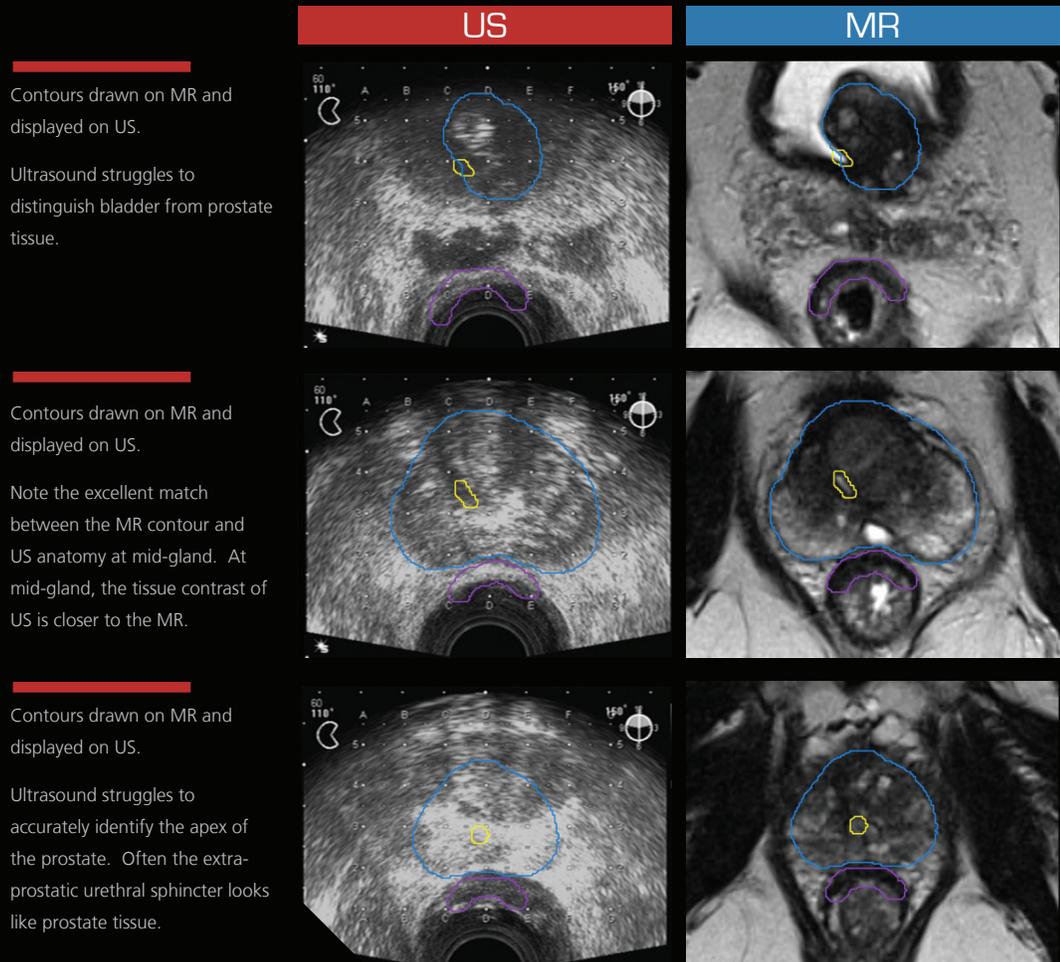
Until now, fusing MR with ultrasound has not been practical. Quite simply, the lack of software tools for solving the differences in patient positioning has kept centers from incorporating MR into the permanent seed treatment planning process.

MIM's ReSlicer™ (Patent Pending) solves these problems. Now there's an easy and reproducible way to reorient pre-operative MR into the same position as an intra-operative ultrasound.

## Accurate MR/US Fusion

Whether you will use it to enable pre-planning (with or without ultrasound) or for intra-operative MR/US fusion, ReSlicer is the next-generation software tool that's bringing a new dimension to brachytherapy treatment planning. No special equipment or significant changes to your current workflow are required.

“ ”  
*This is the most exciting software advance in prostate brachytherapy in years*



Note the much clearer distinction between bladder and prostate that MR affords at the prostate base. Similar to the other slices, the rectal contour is also much more dosimetrically accurate than when contoured based on TRUS.

The excellent contour agreement shows that the MR is very accurately aligned to the US using ReSlicer. Note the excellent match of the urethra contour, even for this asymmetric gland.

The apex is clearly outlined with MR's superior soft-tissue contrast and lack of image artifacts.



## PinPoint QA

Given the lack of sophisticated imaging tools previously available for permanent seed implant brachytherapy, there's little wonder why so few centers are using MR for post-implant QA. AAPM TG-137 recommends the use of both MR and CT for post-implant dosimetry. But prior to the release of MIM's PinPoint QA™, accurate fusion of post-implant MR with CT was a difficult challenge.

One problem with CT-only QA is that the prostate is indiscernible from surrounding tissue. About the only things you can see clearly in and around the prostate are the seeds.

This inherent bias has made it difficult to truly learn from the post-implant QA process. Has the external urethral sphincter been overdosed? How about the penile bulb or neurovascular bundles? It's nearly impossible to answer these questions with CT alone.

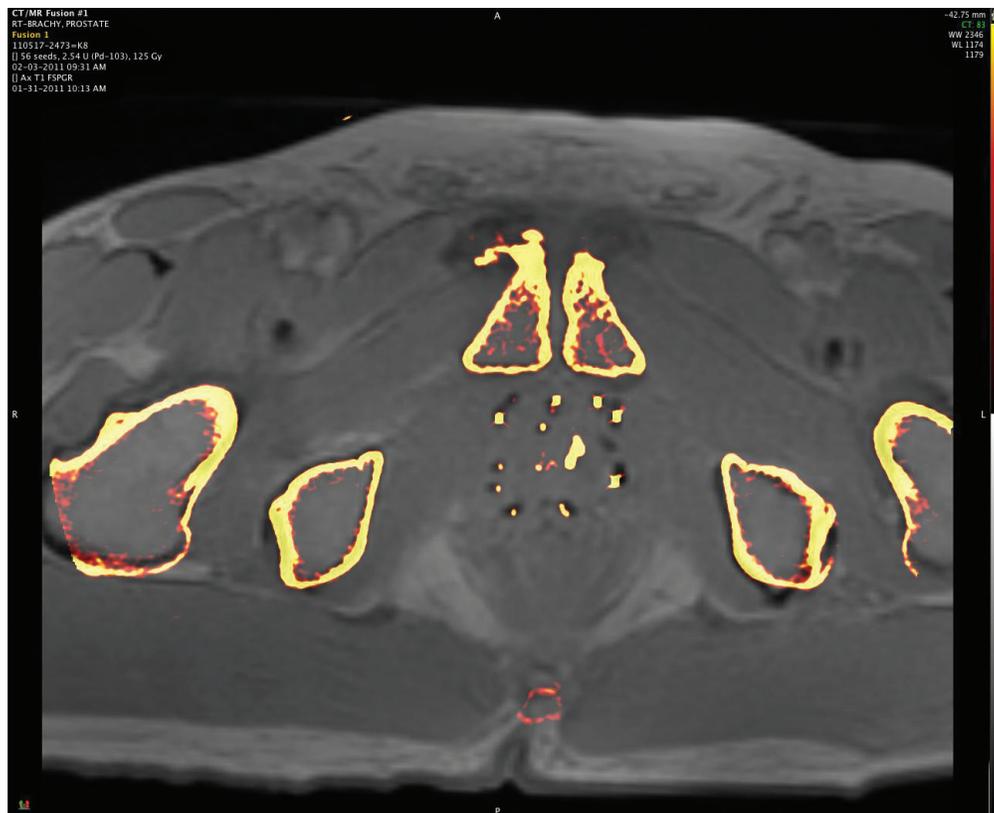
However, with MIM's PinPoint QA, accurate and objective post-implant dosimetry isn't only possible – it's both faster and easier. MIM's powerful registration tools automatically align the MR to the CT seed-to-seed. Then it's just a matter of contouring the prostate with MIM's state-of-the-art contouring tools, using all three MR views for better visualization. With the clear soft-tissue contrast afforded

by MR, instead of bright seeds and fuzzy anatomy, contouring isn't influenced by seed location.

# PinPointQA™

Finally, the dosimetry is based on precise automatic seed localization on CT and tuned to find true seed centers in all three planes – independent of image resolution or slice spacing.

This is PinPoint QA. Now, post-implant dosimetry can finally be both accurate and objective.



## Focal Therapy

Advancements in imaging combined with earlier detection are introducing an era of focal therapy and dose painting of suspicious areas within the prostate.

Whether it's multi-parametric MR imaging or functional imaging such as MR spectroscopy or ProstaScint® SPECT, MIM's High Definition LDR™ ensures the best accuracy in focal planning.

As an implant progresses, ensuring that boost doses are going to the precise area of concern is essential. Intra-operative dosimetry along with fusion to pre-plan imaging will increase your confidence with this emerging treatment option. As each needle is placed, you'll see whether the gross tumor volumes are receiving the desired dose and be able to quickly correct for any discrepancies.

## Beyond Prostate Implants

When used as a part of combination therapy for higher risk patients, MIM Symphony can sum brachytherapy doses with external beam delivery after converting both to biological effective dose. Whether you perform the implant first or second, the second treatment can be used to paint in cold spots from the first.

MIM's powerful dose summation and evaluation tools can even be used to plan salvage therapy implants.

But MIM Symphony is here to do more than just usher in the next generation of prostate permanent seed implants. Exciting new protocols in lung and breast brachytherapy are also bringing all the same benefits of permanent seed implants to these treatment sites, and MIM Symphony is in the middle of it all.

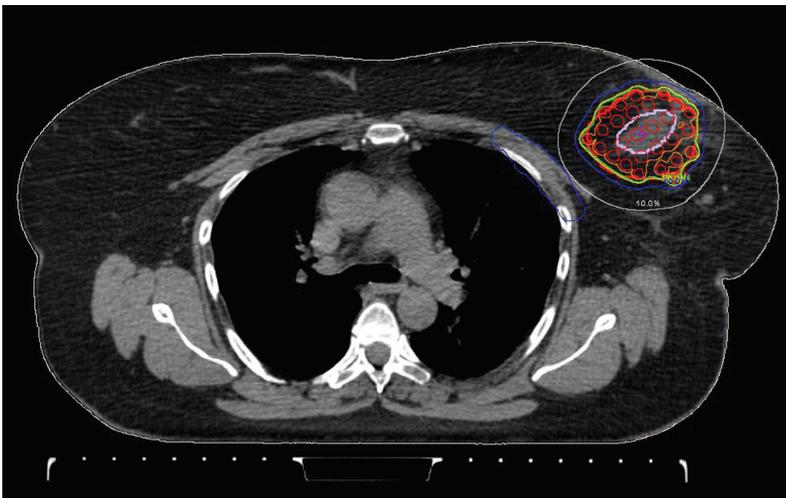
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*Now with MIM Symphony, I'm able to do even more sophisticated planning*

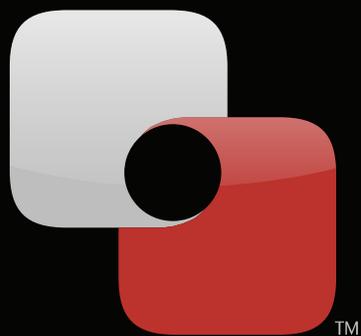
*"I've been using MIM for more than eight years to fuse MR and ProstaScint intra-operatively with trans-rectal ultrasound for targeting suspected disease and sparing critical structures.*

*Now with MIM Symphony, we're able to do even more sophisticated planning. It even allows us to plan permanent seed implants in the breast, lung, and liver. The accuracy and simplicity of MIM Symphony allow us to plan these cases much more efficiently."*

**STEPHEN W. DOGGETT, MD**

**Radiation Oncologist  
Beverly Hills, California**





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