

For further information or a quotation please contact : Colin Walters



SeedOS[™]

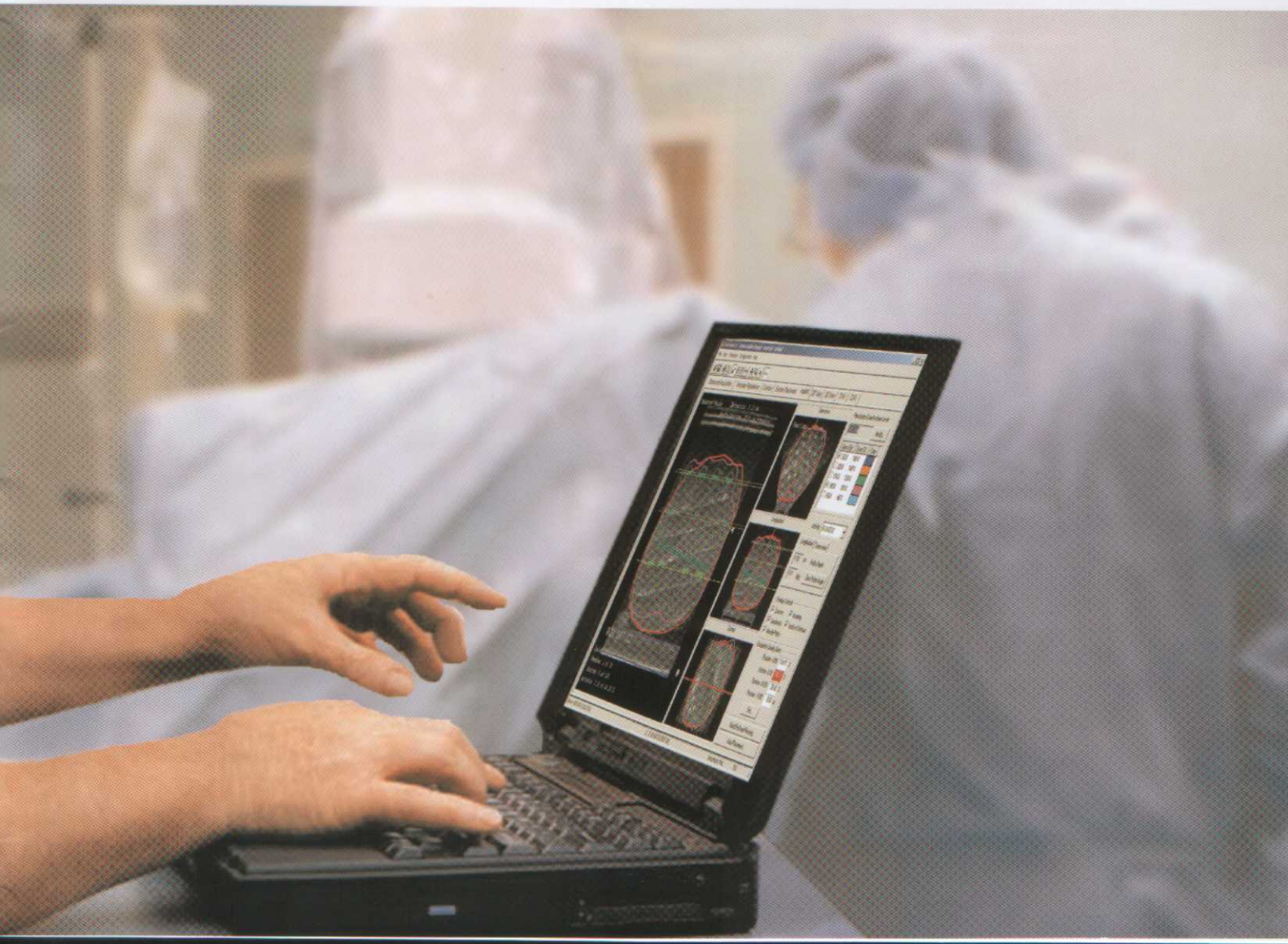
Prostate Seed implant Equipment and Services

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VariSeed[™] Dynamic dosimetry for permanent seed prostate brachytherapy



VariSeed™ The standard for prostate seed implant brachytherapy

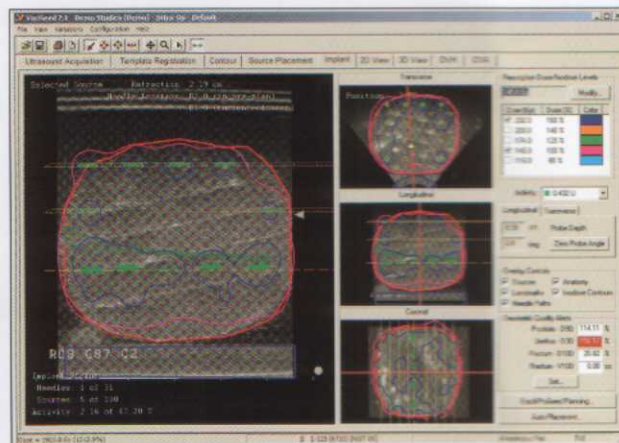
With more than a decade of excellent clinical results, transrectal ultrasound-guided transperineal permanent seed implant brachytherapy of the prostate has become the treatment of choice for early stage prostate cancer. Designed for ease of use, and configured to support all popular treatment protocols, VariSeed has evolved with the demands of practitioners to become the standard treatment planning system against which all others are measured. With over 800 systems in use throughout the world, VariSeed is the prostate brachytherapy system you can trust to meet your needs, now and in the future.

True Real Time Planning

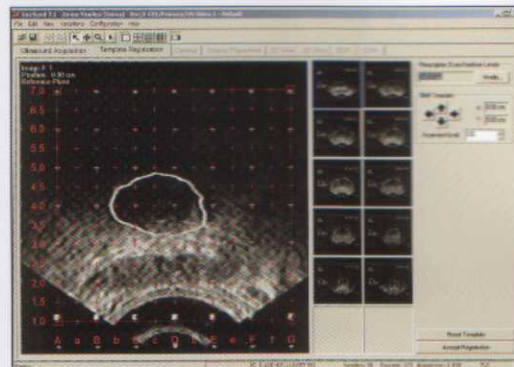
With the real time planning features of the optional **Implant View** module, you can create a volume study, a proposed plan, and a completed post-plan, all as part of the implant process.

Implant View provides three interactive views of the pre-operative plan and correlates the pre-operative plan to the live longitudinal or transverse ultrasound image. You may select the current needle, and VariSeed will snap to the longitudinal image through the selected needle. The pre-operative plan (structures, needles, seeds, and dose distribution) may then be overlaid onto the live ultrasound image.

You may adjust entire needles or seeds individually to account for differences between the pre-operative plan and the actual implant. The dose distribution may also be displayed as it is evolving on the live ultrasound view. The addition of an interface to a stepper with positional feedback allows VariSeed to accurately locate the seeds as they are implanted, anywhere in the volume.



Implant View



Template View

The bounding box and corner handles used during template registration are now drawn coincident with the edges of the template. This supports the new right-click options available during template registration.

The Prostate Brachytherapy System For true real time dosimetry.

Features found exclusively in VariSeed

- Automatic SeedFinder™ locates seeds in a CT data series, dramatically reducing the time needed to create post-plans.
- Rules-based dose optimization to create the ideal pre-plan, first time, every time.
- Dynamic interpolation of contour entries for faster planning.
- Image fusion for targeted therapies or to compare pre- and post-plans.
- Instantly auto-trace solid line contours from ultrasound images.
- Modify pre-plan dosimetry as seeds are placed using the ImplantView real time dosimetry module.
- Twister™ 3D offers volume acquisition without prostate distortion.
- Data export to all available automatic needle loading systems.
- E-mail seed ordering capability direct from plan.

Real Time Dosimetry

The optional ImplantView module provides dynamic dosimetry—live updating of the dosimetry that results from the current implanted seeds and the remaining pre-planned seeds.



Outstanding Features Setting the standard for prostate brachytherapy.

Patient Data Management

VariSeed incorporates a database which tracks patient names and patient images, contours, plan variations and doses. An Archive and Retrieve module supports off-line storage of patient data to avoid disk limitations.

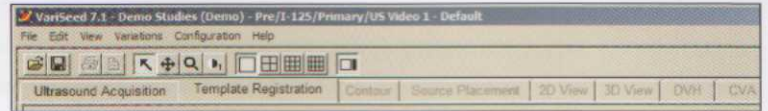
Data Acquisition

VariSeed offers three main image acquisition methods: video frame capture, DICOM 3 data interface, and the new Twister™ 3D mode. The Twister 3D data acquisition option allows you to acquire target data by rotating the probe in longitudinal mode (requires a stepper with rotation angle feedback).

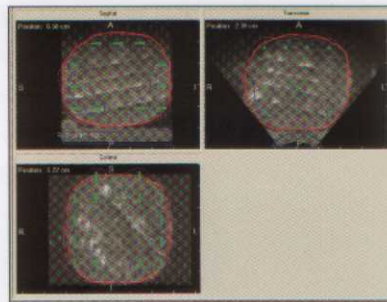
A digitizer option is also available for non-image based planning, and a film scanner can be used to acquire images from film. The DICOM 3 interface allows acquisition of CT, MRI, SPECT, US or other data over a network, or from another DICOM 3-compatible source.

Imaging

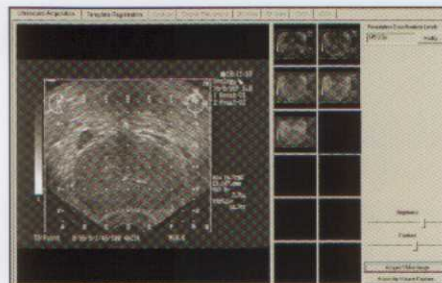
Window/level adjustments can be made on images to help improve visibility. Ultrasound images can be registered and scaled in two dimensions using the ultrasound template overlay. Multiple pre-stored templates may be used (more are added as required). You can assemble a set of evenly-spaced transverse images to build a 3D volume image.



The easy, tabbed workflow allows VariSeed to support your particular planning process.



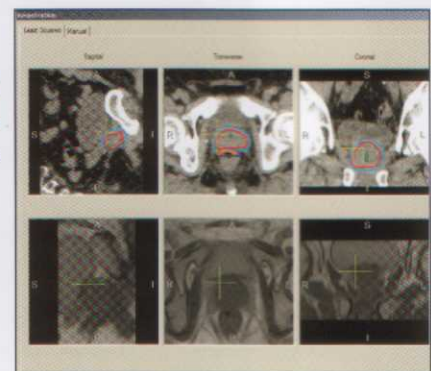
Twister acquires much more volume data, in less time, and with less prostate distortion, than older stepped methods.



Video capture allows you to acquire data from the video output of an ultrasound unit, or from a VCR output of pre-recorded ultrasound studies.

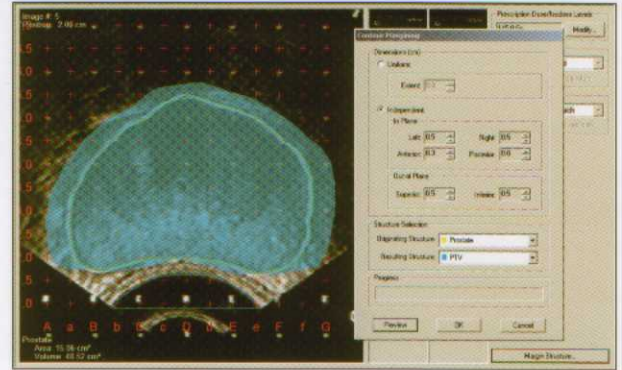
Image Fusion

3D data sets may be co-registered using anatomical landmarks or manual methods. Contours and dose distributions created on one set of fused data may be viewed on the other. Image fusion can be used to register CT data to MR, CT to US, and DICOM-compatible SPECT or MR functional images to US images for targeting treatment for image-based pre-plans.

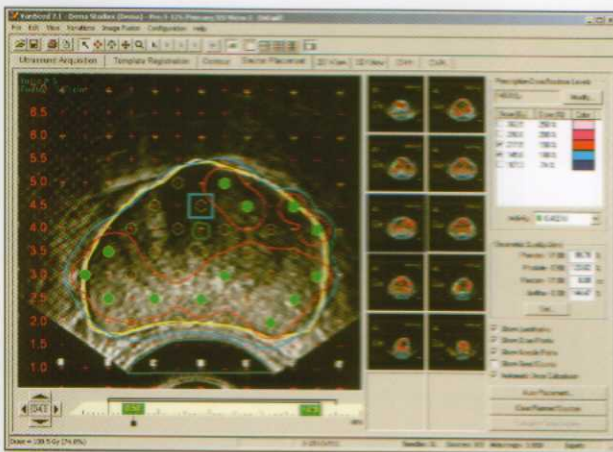


Contouring

VariSeed supports the entry of a group of contours in any image data set. Contours can have user-assigned default names, colors, and transparency. Dynamic contour interpolation allows you to enter as many contour slices as are necessary to define the outline. All contours on slices between entered slices are automatically interpolated, so you enter only the data necessary to adequately define the volume. Contours can be instantly extracted from solid line outlines on ultrasound images, and tools are provided for editing entered contours. In addition, you can easily make a new contour from an existing one, such as a target volume from a prostate volume, with the auto-margin tool, with the margin having a unique value on each major axis.



The Auto-margin Tool allows the user to specify independent margins in each of the six principle directions.



The optional Dose Optimization /Inverse Planning feature allows placing minimum and maximum dose constraints on any structure. VariSeed finds the needle and seed loading pattern which most closely matches your criteria.

Pre-Planning Flexibility

Efficient and easy to use, VariSeed provides a complete range of tools for quickly pre-planning a seed placement. Seeds can be manually placed individually or as fully-loaded needles while isodose lines and Dosimetric Quality Alerts are updated instantly. Or, a plan can be created using one of our geometric placement patterns or optional Dose Optimization/Inverse Planning feature and used as is or quickly fine-tuned with a few manual adjustments. Once your plan is complete, you can print a Needle Loading Report to guide the manual needle loading process, or better yet, export the data directly to a third party automatic needle loader and let it complete the task.



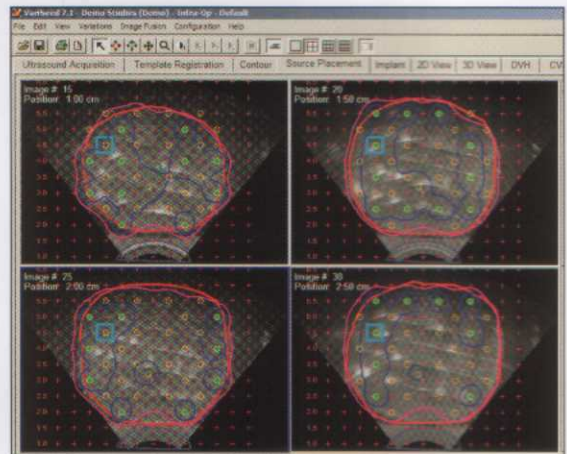
Outstanding Features User-defined source definitions and calculations.

Real Time Planning

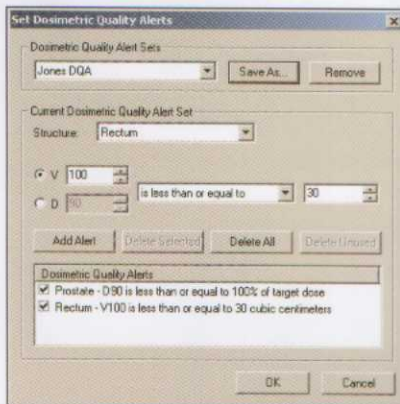
As seeds are located in **Implant View**, the pre-plan dose distribution is updated to reflect the implanted source positions. User-defined or pre-set **Dosimetric Quality Alerts** notify you when the implant is deviating from the intended plan.

In addition to the optional **Implant View** feature, the base package includes a peri-operative capability, whereby needles may be relocated to their observed transverse view location in a static displayed pre-plan image. In this mode, needles remain perpendicular to the template.

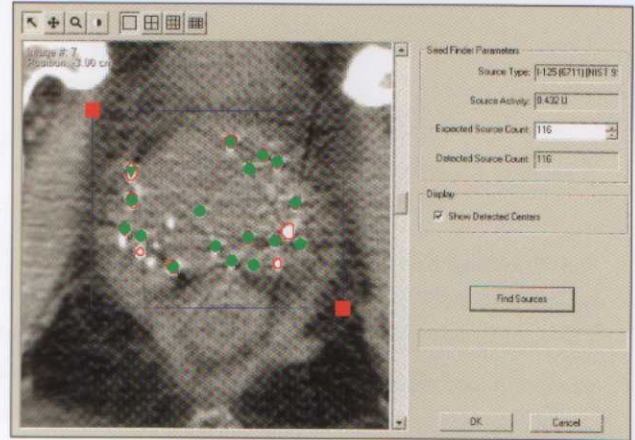
Multiple transverse section view with isodose lines and seed arrangement is easily reviewed for dose coverage.



The Dosimetric Quality Alerts feature available on the Implant tab has been added to the Source Placement tab and Source Identification tab. The performance for the DQA's has been improved, making updates instantaneous with changes to the plan or evaluation.



SeedFinder™ allows rapid and precise seed identification in CT studies. Further tools help the manual process of identifying any unresolved overlapping seeds. Once the seeds have been located, the finished plan is just seconds away.

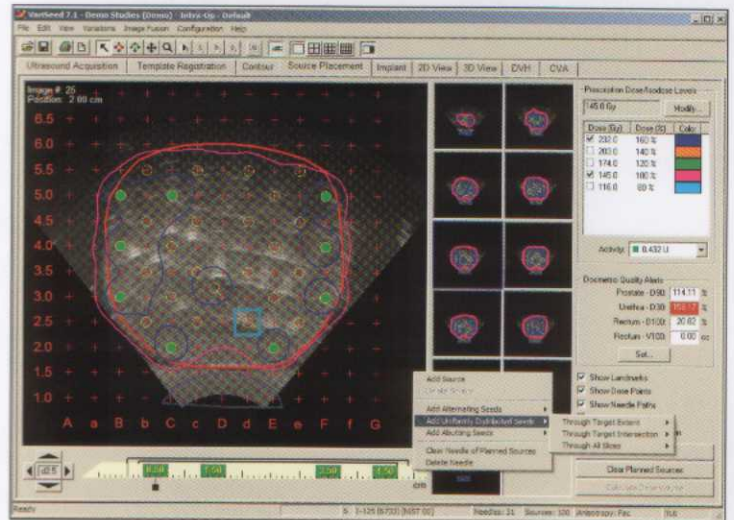


Efficient Post-Planning

The post-planning process has traditionally been a bottleneck for centers performing permanent seed implants. The incentive to perform the task, which is necessary to improve technique, is often not enough to overcome the volume of work required. With the SeedFinder™ option from VariSeed, however, this is no longer a problem. Seeds are automatically found in CT data volumes, and the plan is complete in just a couple of minutes!

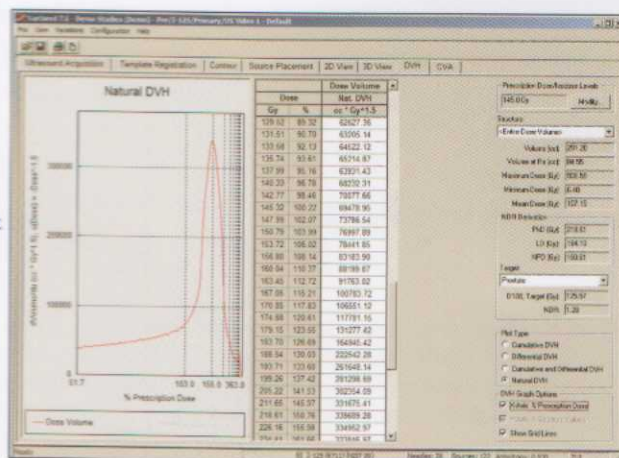
Plan Analysis

- Examine Point dose, D90, D100... values.
- Review multiple interactive orthogonal 2D views of images and dose distributions, with or without seed locations marked.
- Review 3D distributions with dose clouds or painted surface dose.
- Perform numeric analysis with Dose Volume Histograms (cumulative or differential) and contiguous volume analysis for any or all defined structures, or over the entire dose volume.
- Use Natural Dose Volume Histograms and the automatically derived Natural Dose Ratio to evaluate and score the implant.
- Specify Z-resolution of dose calculations for DVH, DQR, DQA and CVA reports.



The Longitudinal Needle Editor allows you to directly position sources along the extent of the needle and provides a comprehensive right-click menu for automatically loading the needle in a variety of ways.

The Natural Dose Volume Histogram can be calculated for the entire dose volume providing a target independent view of dose homogeneity and allowing for objective comparisons of different plans.



System Configurations¹ Customized prostate treatment planning systems.

Full Planning Systems

VariSeed planning systems are available with both standard and optional software features, so you can tailor the system to most closely match your individual needs. If you require added planning capability, additional planning stations are available at favorable pricing.

Standard Features

Standard features include a fast and accurate TG-43 calculation using either point or line source approximation as indicated by the user selection of whether to use none, constant, factors or function anisotropy correction. A Plan Export function provides for output in delimited tables for import into word processors or spreadsheets, DICOM RT output to other planning systems such as BrachyVision™ or Eclipse™ from Varian Medical Systems, and needle loading outputs for automated needle loading devices.

Additional standard features include:

- Patient database
- Plan variations
- Frame grabber for ultrasound import
- Contouring with dynamic interpolation
- Image enhancement
- Needle guide templates
- Needle editor
- Manual seed placement
- Place, manipulate and cut seeds in strands
- Real time dose calculation
- 2D orthogonal views
- Advanced 3D visualizations
- Differential, Cumulative and Natural Dose Volume Histograms
- Contiguous Volume Analysis
- User selectable reports
- User-defined data export, including DICOM RT export

- Password-protected module that allows source entry, editing, reporting and setting of source permissions

Special Features

- Nomograms for some turnkey system providers.
- Easy e-mail ordering of seeds for your plan (participating seed vendors only).

Optional Features

- DICOM data interface for data import
- Dose optimization and inverse planning
- SeedFinder™ automated seed extraction module
- Image Fusion for co-registration of any two 3D data sets
- Implant View™ for real time planning
- Twister™ 3D data acquisition module

Services

Installation

Systems are shipped pre-configured so you can normally accomplish cable connections and power on without complications. Telephone support is available to help you establish interfaces to ultrasound scanners, tracked steppers, and image networks. If you elect onsite training, our applications specialist will also help you with any installation problems you might have.

Training

Application training is included with every system. Two days of classroom training, including travel and accommodation, are standard. Further training support, such as attendance at first clinical application, and refresher classroom or on-site training, is available at extra cost.

¹This product includes software that is the property of Varian Medical Systems, Inc. (VMS) and other third parties. VMS has sole and exclusive ownership of all rights, title, interest in and to its brachytherapy software, and all modifications and enhancements thereof (including ownership of all trade secrets and copyrights pertaining thereto), subject only to the rights and privileges expressly granted by VMS or granted to VMS by third parties.

Other Configurations

Acquisition Workstation

If you intend to acquire data in multiple locations, and perform treatment planning at a central site, consider the Acquisition Workstation configuration. This product provides a reduced feature set for acquiring volume studies and contours, such as from a Urology practice, or a center for which you wish to provide treatment planning services. This feature set allows for transferring that data over a network, or by removable media, to a central VariSeed planning workstation for plan preparation and analysis.

Convenience Laptop

If you have a single workstation, you may wish to acquire a second to use for data acquisition at a remote site as well as parallel planning operations, and as an active spare in the event of hardware failure in the O/R. A convenience laptop system is available to licensed users at a favorable price.

Hot Spare Laptop

An even more economical method to ensure that a spare system is available in the event of hardware failure, a hot spare laptop is shipped with VariSeed software installed but not licensed. If needed, simply call our Help Desk and obtain a short term license to save the day!

Software Only

Software licenses are available for customers who have hardware that matches our specification.

Support

Toll free access to our applications specialists to address your concerns is included with the warranty, and available in subsequent periods. Three levels of support are available:

Silver: Help Desk support and software updates for functionality originally purchased. This is available exclusively for Software-only customers.

Gold: Includes Silver coverage plus loaner hardware to cover failed hardware components while they are being repaired. Repair costs, if not covered by manufacturer's warranty, are extra.

Platinum: Total coverage, including Gold service features, plus full hardware repair/replacement service, training credits, and guaranteed PC hardware replacement on a three-year cycle.

Note: In some international markets, Gold Service only is offered.

Hardware Specifications²

Note: If you prefer, a tower computer configuration is also available as listed below, but most users prefer the O/R certified laptop configuration for real time use.

Laptop Configuration

- Laptop PC with Pentium IV® Processor 1.6Ghz*
- 256 MB RAM
- 20 GB Hard Drive
- 24/10/24 CD-RW
- 32 MB Graphics Controller
- 15" Active Matrix Display
- Video Frame Grabber
- Ethernet Card
- Microsoft® Windows Operating Systems
- Color Printer

*Tested to Medical Safety Standard IEC 601-1 (EN 60601-1-1). The laptop is classified as Type B equipment and as non-medical information technology.

Tower PC Configuration

- Pentium IV® 1.8Ghz
- 512MB PC800 Rambus® Memory
- 20 GB Hard Drive
- 16 x 10 x 40 CD-RW
- 32MB Graphics Controller
- Video Frame Grabber
- Ethernet Card
- Microsoft® Windows Operating System
- 17" Flat Panel Monitor
- Color Printer

Option

- Digitizer tablet for data entry from films.

²Hardware specifications change frequently. We expect that any changes will exceed the specifications shown here, but please check for the latest specification at time of purchase.

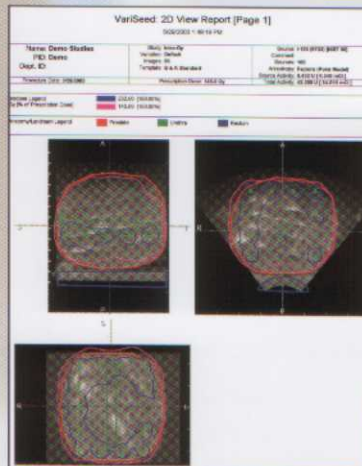
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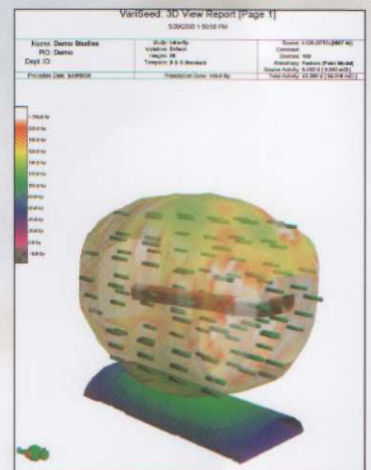
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Prostate Seed Implant Equipment and Services

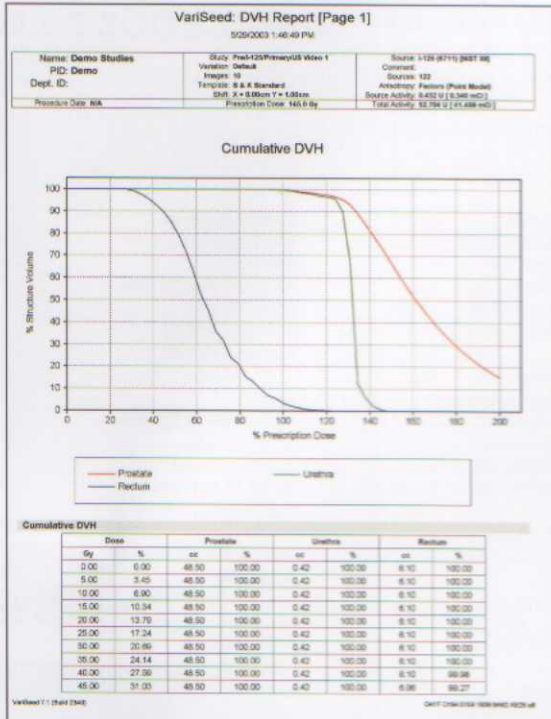
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The 2D and 3D View Reports provide for the visualization tools to be printed as well.



User-Defined Reports A wide collection of printed reports and graphical outputs.



The DVH report provides dose information for single or multiple structures.

VariSeed: Study Summary Report (Page 1)
5/29/2003 1:44:24 PM

Name: Demo Studies
PID: Demo
Dept. ID:

Study: Prost-123/Primary03 View 1
Version: Default
Image: 10
Template: S & K Standard
SPR: X = 0.05cm Y = 1.03cm
Prescription Dose: 145.0 Gy

Source: I-125 (8711) (847 Bq)
Comment:
Source: 123
Activity: 1000 (Pure Model) (0.800)
Source Activity: 0.432 U (0.348 mCi)
Total Activity: 33.794 U (41.499 mCi)

Study Type: Pre-Op

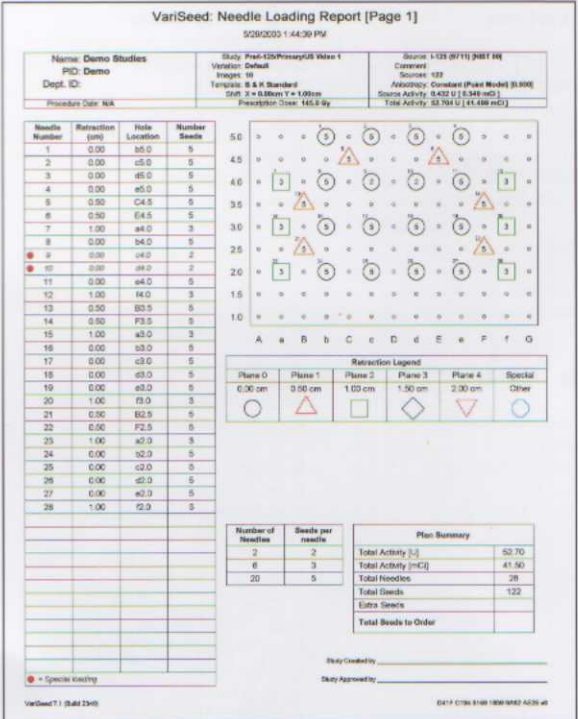
Dose information

Prostate:
Total Volume: 48.50 cc
V200: 0.00 cc (0.00%)
V150: 20.89 cc (43.25%)
V100: 47.89 cc (98.70%)
D90: 181.60 Gy (132.14%)
D80: 230.84 Gy (159.27%)
D71: 902.97 Gy (622.78%)

Urethra:
Total Volume: 0.42 cc
D90: 184.20 Gy (127.03%)
D80: 182.08 Gy (126.47%)
D70: 185.26 Gy (128.66%)

Rectum:
Total Volume: 6.10 cc
D30: 105.04 Gy (73.06%)

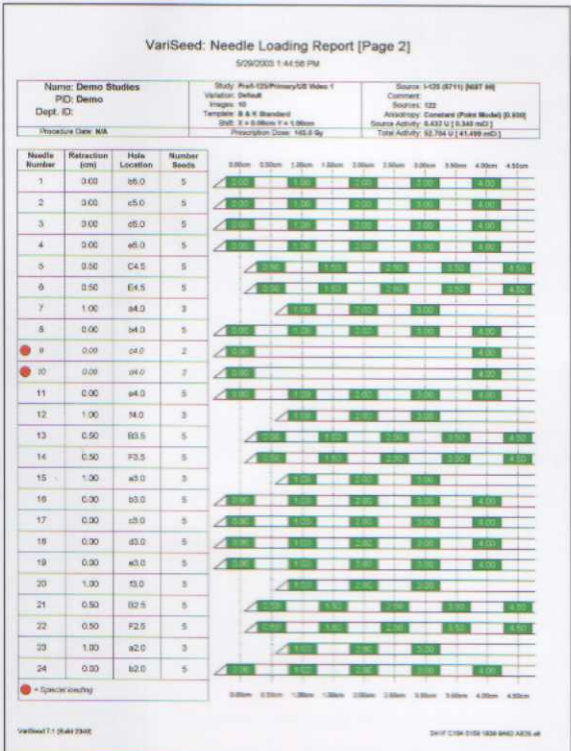
The Study Summary Report provides a snapshot review of the plan.



Per RTOG recommendations, the needle loading report provides accurate and easily read documentation used for the day of the implant.

Colored geometric shapes, plus the number of sources and needle number, provide a useful tool in following the implant procedure.

Red dots indicate a non-uniform needle loading. This document also provides for signature approvals and needle and source purchasing.



The Needle Loading Report provides a second verification sheet that graphically displays the needles, sources and loading.