

Medtronic

Getting Started >

Early Detection, Improved Outcomes >

Implementation Support

CHANGING THE MODEL

Today's model of disjointed care isn't working in the fight against lung cancer. Survival rates haven't changed dramatically in more than 45 years.^{1,2}

We can guide you through the steps to create a comprehensive Lung Health program.

Together we can redefine the patient journey and change the stats.

Become a Lung Health Leader

Step 1

Align

Commit to a Lung Health initiative by partnering with Medtronic.

Step 2

Plan

Get the right tools, technology, and training so you're ready to move fast.



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EARLY DETECTION, STEEL S

Innovative technology and services designed to address aspects of the entire lung health continuum of care.

From patient identification and management, to improving biopsies and optimizing surgical treatment, Medtronic advances lung cancer care across the entire continuum. By identifying and treating patients earlier, our goal is to create a stage shift that transforms lung cancer from a terminal illness into a manageable and potentially curable condition.

Lung cancer patients currently diagnosed at stages III/IV

74%

A lung cancer patient's average survival rate at 5 years is

21%

When diagnosed early and resected within one month, a lung cancer patient's survival jumps to

92%

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ONGOING EXPERT SUPPORT

A partnership to help you make the most of your Lung Health program.

Medtronic is uniquely positioned to help you implement and grow your lung health program. With our vast array of experience and data, we'll help you:

- Expand your reach to create new opportunities
- Improve operational efficiencies
- Host unique learning experiences
- Keep everything running smoothly with world-class field support and technical services

"An Incidental Nodule Program is a safety net for patients. It improves the health and well-being of the community and saves lives."

—Dr. William Mayfield, Chief Surgical Officer, WellStar Health System



LUNG CANCER CAN BE A MANAGED CONDITION

LungGPS™ Patient Management Platform

It's time to give lung nodule patients a better chance at survival. The LungGPS™ platform is designed to identify lung nodules earlier and streamline the lung cancer care continuum for potentially better outcomes. Together, we can transform lung cancer from a terminal illness into a manageable and potentially curable condition.

SEE HOW IT WORKS

"I am constantly amazed by the amount of cancers we have captured to date with the software." — Ainsleigh Brown, Incidental Lung Nodule Nurse Navigator

25%

of actionable incidental nodules are malignant.⁵

More than

70%

of incidental nodules go unaddressed.⁶

3X

costlier to treat stage IV lung cancer than stage I lung cancer.^{3,†}

THE FIRST ALL-IN-ONE SOFTWARE SOLUTION

The LungGPS™ patient management platform is a comprehensive, integrated platform to identify and monitor lung nodule patients, manage workflows, and streamline thoracic tumor board collaboration.



DynaCAD[™] Lung

Implement an automated system that helps track nodule progress with imaging tools that can automatically assign Lung-RADS*** categories.



Lung Cancer Screening Manager

The LungGPS[™] platform can be integrated with your existing EMR system to help track patients eligible for lung cancer screening.



Incidental Lung Nodule Manager

Helps you identify patients with lung nodules and compare scans over time, prompts you to follow up on each patient's treatment, and aggregates important information.



Multidisciplinary Team Orchestrator (tumor board)

Easily create and manage multidisciplinary reporting to create alignment, ensuring continuity to improve patient outcomes and treatment capabilities. **ILLUMISITE™ Platform**

Innovative Tools

THIS IS HOW YOU BIOPSY WITH CONFIDENCE

The ILLUMISITE™ Platform

Fluoroscopic navigation technology corrects for CT-to-body divergence by visually enhancing nodules, and allowing alignment during the procedure. This enables you to be in the correct location prior to biopsy.

Continuous guidance helps maintain alignment — even after the locatable guide is removed, giving you confidence throughout the biopsy to sample multi-directionally. You can even reach nodules outside the airways with the Cross Country transbronchial access tool. $^{11-13}$



SEE IT IN ACTION

Using fluoroscopic navigation technology resulted in a nearly

POINT INCREASE† in diagnostic yields.8

95%

SUCCESS RATE[†]

of virtual target overlapping actual lesion using fluoroscopic navigation technology.

INNOVATIVE TOOLS FOR OPTIMIZED PROCEDURES

Sensing Catheters

A sensor coil embedded in the distal tip generates continuous positional data, so you can maintain alignment on the target, even after the locatable guide is removed. Get more details.







CrossCountry™ Transbronchial Access Tool

Gain access to lung nodules outside an airway, which can account for more than 50% of nodules.¹⁴ See it in action.

Arcpoint[™] Pulmonary Needle

The braided sheath's trackability and maneuverability offers ease of sampling. The needle maximizes flexibility, with an optional stylet for rigidity. Get a closer look.

GenCut[™] Core Biopsy System

Using a proprietary blade design, this tool obtains core tissue samples for molecular genetic analysis and enables continuous sampling. Get a closer look.

SuperLock™ Nitinol Coil Fiducial Markers

Markers conform to the anatomy's contours and enable nodule localizing during stereotactic body radiation therapy (SBRT/XBRT). Get more details.

CRITICAL MOMENTS REQUIRE CONSISTENT **PERFORMANCE**

Signia™ Smart Stapling System

Compared to Ethicon^{™*} powered stapling with GST technology, Signia[™] powered stapler with Tri-Staple[™] 2.0 technology delivers better staple formation — in average, thick, and extra thick tissue. 15,16,†



STRONGER STAPLE LINES 15-17,†,‡

EXPLORE SIGNIA™

[†] Preclinical results may not correlate with clinical performance in humans.

[‡] Compared to Ethicon powered stapler with GST technology.

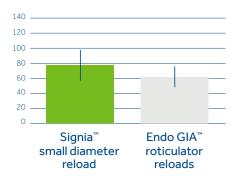
A NARROWER PROFILE

FOR BROADER POSSIBILITIES

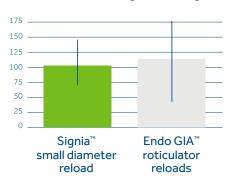
8 mm Signia™ Small Diameter Reload

When paired with the Signia[™] stapler, the white Signia[™] small diameter reload provides a comparable leak pressure to the tan Tri-Staple™ reload.

GI Burst Strength (mm Hg)18,†



Vessel Burst Strength (mm Hg)18,†



†Preclinical results may not correlate with clinical performance.

‡Compared to the Ethicon Echelon Flex^{TM*} powered vascular stapler with advanced placement tip.

§Compared to the Echelon Flex™* powered vascular stapler 35 mm white 2.5 mm cartridge reloads.

 Ω Preclinical results may not correlate with clinical performance in humans.

††Tested using the Endo GIA™ handle with Signia™ small diameter 30 mm grey 2.0 mm reload versus Ethicon Echelon Flex^{TM*} powered vascular stapler with 35 mm white 2.5 mm reload.

Compared to the Echelon Flex™ PVS, the Signia[™] small diameter reload delivers:



less dead space between the point of articulation and the jaws19,‡

PRECISION MEETS **VERSATILITY**

Tri-Staple[™] **Technology**

Superior staple line strength and leak resistance^{23,24,†,‡} compared to Ethicon Echelon Flex^{™*}



Less stress

Tri-Staple™ technology generates less stress on tissue during compression and clamping. 25,26,§,Ω



Greater perfusion

The graduated compression profile of the Tri-Staple[™] technology design allows greater perfusion to the staple line. 27,§



Superior performance

Provides superior performance in variable thicknesses. 23,26,28-30,†,††,‡‡

- † Bench test results may not necessarily be indicative of clinical performance.
- ‡ Staple line strength: Endo GIATM tan reload vs. Echelon Flex^{TM*} white reload and Endo GIATM purple reload vs. Echelon^{TM*} green, gold, and blue reloads. Leak resistance: In-vitro synthetic leak comparison: Endo GIA™ purple reload vs. Echelon™* blue and gold.
- § Compared to flat-faced cartridges with single-height staples.
- Ω Compared to Echelon Flex^{TM*} green reloads analysis comparing different stapler designs, performance and impact on tissues under compression using 2-D finite element analysis.
- †† Preclinical results may not correlate with clinical performance in humans.
- ‡‡ Compared to Ethicon Echelon Flex™*.



Signia Stapling System Signia Small Diameter Reload Tri-Staple Technology LigaSure Maryland Jaw Thoracic Sealer/Divider EleVision Relation Helosom EleVision Helosom Reload Tri-Staple Technology LigaSure Maryland Jaw Thoracic Sealer/Divider EleVision Helosom Reload Tri-Staple Technology Reload Re

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ADVANCED TECHNOLOGY **FOR MORE EFFICIENT PROCEDURES**



LigaSure[™] Maryland Jaw Thoracic Sealer/Divider

The first minimally invasive LigaSure™ device designed for VATS procedures that can seal pulmonary veins and arteries up to and including 7 mm. 31,†

Optimized for the pulmonary vasculature

- Narrowed jaw specifications for performance on pulmonary vessels³²⁻³⁶
- 30 cm shaft to provide a reach similar to other VATS tools³²⁻³⁶
- Proprietary nano-coating to reduce sticking, 37,38,‡ eschar buildup, 38,39,§ and cleanings^{40,41} compared to devices without nano-coating^Ω

† As of March 23, 2018, based on indications for use for laparoscopic LigaSure™ devices.

‡ Compared to legacy LigaSure™ device. Tissue sticking to device jaws instances measured over 110 seals per device (ForceTriad™ energy platform). LF1930T is only compatible with the Valleylab™ FT10 energy platform.

§ Eschar buildup assessed using optical imaging analysis after 60 seal and divide cycles.

 Ω Cleaning effectiveness assessed after each of two cleaning cycles.

†† 19 of 21 surgeons surveyed after use agreed when compared to their currently preferred method.

Designed for an efficient OR^{42,††}

The multifunctional LigaSure[™] Maryland Jaw thoracic device may reduce procedure time and instrument³⁵ exchanges to enable more efficient procedures.43

GET MORE DETAILS

Signia Stapling System Signia Small Diameter Reload Tri-Staple Technology LigaSure Maryland Jaw Thoracic Sealer/Divider EleVision Relation AK System Touch Surgery Enterprise

LOOK TO THE **FUTURE OF** MINIMALLY **INVASIVE SURGERY**

EleVision™ IR Platform[†]

The EleVision[™] IR platform enables objective perfusion assessments during and after surgery.44

- Uses an innovative laser technology in conjunction with indocyanine green (ICG) for imaging with 4K technology
- Produces simultaneous white light and infrared (IR) fluorescence images, merging them in real time
- Provides real-time qualitative and quantitative measurement of IR intensity^{44,45,‡}





CLEAR VISION **MAKES ALL THE** DIFFERENCE

EleVision™ 4K System

- Improves image resolution and color separation which may reduce time in the OR and could contribute to a decrease of surgical errors 46,†,‡
- Offers a more consistent image across the screen than other 4K visualization systems^{47,§,Ω}
- Laparoscopic mode 1 provides edge enhancement, which sharpens anatomical lines and may aid in the visual assessment of structures $^{47,\Omega,\dagger\dagger}$
- Has an optical zoom feature that enables a full-screen 4K image free of the degradation caused by digital zoom#
- Provides a higher resolution to enable visualization of finer details and may increase surgical precision^{47,§§}

† Includes 4K laparoscope, 4K camera head, 4K control unit, and 4K monitor for 8MP and BT.2020 output.

‡ Mean performance time for HD and 4K groups were 558.3 and 310.4, respectively. Mean number of repetitions (a measurement of proficiency) for HD and 4K were 152.1 and 127.4, respectively. 4K decreased the mean number of errors from 50.2 for HD down to 1.2. Study performed on an MIS box trainer and not in a clinical setting.

§ Preclinical evaluation. 8 surgeons rated the image consistency of the EleVision™ 4K system, SBIS Pixa™* 4K, and Olympus Visera™* 4K, at an average of 5.3, 3, and 4.5, respectively. 9 surgeons rated the image consistency the EleVision **M 4K system, Olympus Visera 4K***, and Stryker 1688*** at an average of 4.4, 1.7, and 4.0, respectively.

 Ω Based on preclinical or animal studies. Results may not correlate to performance in humans.

†† Based on a survey. 6 out of 6 surgeons agreed that more edge enhancement provided more visual information of anatomical structures.

Full-screen image achieved through optical zoom instead of digital zoom.

§§ As compared to the Stryker 1688™*. Measurement taken at 40 mm and 70 mm distances with 1951 USAF resolution test chart. At 40mm, EleVision™ 4K and Stryker 1688™* measured at 10.08 lp/mm and 8.0 lp/mm, respectively. At 70 mm, EleVision **M** 4K and Stryker 1688**** measured at 6.35lp/mm and 5.66lp/mm, respectively.





UNLOCK THE POWER OF **SURGICAL VIDEO**

Touch Surgery[™] **Enterprise**

Studies show that surgical video analysis can improve surgeon performance.48 And yet, the technology to record, access, and analyze surgical videos has fallen behind that growing consensus.

Now, Medtronic offers Touch Surgery™ Enterprise, an easy-to-use video management and analytics platform that connects your OR to the cloud so you can:

- Seamlessly record and upload your video
- Securely grow your library
- Uncover new insights to improve surgeon performance

GET MORE DETAILS



ASSESS POTENTIAL, INSIDE AND OUT

The first step in launching a comprehensive Lung Health program is assessing your market. Together, we'll leverage this data to build a strategy, request resources, and get approval.

Within the walls

We'll run a report to identify patients who've had an incidental lung nodule and may need follow-up care.

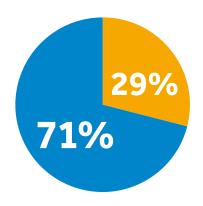
Incidental nodule follow-up⁶



Followed



Not followed

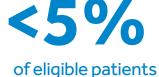


Outside the walls

We'll collect data about the high-risk population in your area to identify patients who may qualify for lung cancer screening. According to the US Preventive Services Task Force, the new screening guidelines are estimated to increase the lung cancer screening patient pool by 81%.⁴⁹

Patient eligibility:

- 50-80 years old
- Currently smokes or quit in last 15 years
- Has a 20 pack-year smoking history



of eligible patients receive screenings⁵⁰

Market Assessment >

Program Development Plan >

Care Pathways >

Training and Education >

BUILDING YOUR LUNG HEALTH PROGRAM, TOGETHER

1. Program assessment

Use your own data to guide you in quantifying opportunities, driving referral volume and potentially increasing ENB procedures.

2. Program launch

Foster alignment on the program's vision and goals. Unite stakeholders to share the vision, secure formal commitment, and provide direction.

3. Business review and program execution

Assess progress on activities to date, complete a gap analysis, and determine next steps. Develop strategic marketing ideas to elevate recognition, boost your reputation, and promote your program.



Market Assessment >

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GIVE PATIENTS THE RIGHT CARE, RIGHT NOW

Medtronic Lung Health Services + LungGPS™ Platform.

After you've identified lung cancer patients, timely access to treatment is critical. We can help you redefine the patient journey with an evidence-based, consistent approach — from presentation to diagnosis to therapy to survivorship. This can help shorten the time to treatment from months to days.

Multidisciplinary team

The team starts with a nurse navigator as the patient's primary point of contact, and can include pulmonologists, oncologists, radiologists, surgeons, clinical research nurses, and social workers.

Lung-specific tumor board

To help ensure patients get optimized care, the multidisciplinary team meets weekly to review each patient's history and collaboratively determine treatment plans.

Lung nodule clinic

Create a designated Lung Nodule Clinic to provide immediate follow-up treatment and streamline care by allowing patients to see multiple physicians in one visit. Market Assessment >

Program Development Plan >

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GET ON THE PATH TO **PROFICIENCY**

Take multidisciplinary learning to the next level.

Access helpful, easy-to-use Lung Health technologies and training to give your team the necessary tools to implement impactful changes.

- Resources to help navigate financial and operational challenges
- In-depth walkthroughs of critical Lung Health products and services
- Materials to help you and your hospital implement value-based healthcare initiatives



References

- Siegel RL, Miller KD, Fuchs HE, Jemal A. Cancer Statistics, 2021. CA Cancer J Clin. 2021;71(1):7-33. doi:10.3322/ caac.21654.
- Carbone PP, Frost JK, Feinstein AR, et al. Lung Cancer: Perspectives and Prospects. Ann Intern Med.1970;73:1003-1024. [Epub ahead of print 13 March 2020]. doi:10.7326/0003-4819-73-6-1003.
- 3. Gildea TR, DaCosta Byfield S, Hogarth DK, Wilson DS, Quinn CC. A retrospective analysis of delays in the diagnosis of lung cancer and associated costs. Clinicoecon Outcomes Res. 2017;9:261–269.
- 4. Henschke Cl, Yankelevitz DF, Libby DM, Pasmantier MW, Smith JP, Miettinen OS. Survival of patients with stage I lung cancer detected on CT screening. N Engl J Med. 2006;355(17):1763-1771.
- Tanner NT, Aggarwal J, Gould MK, et al. Management of Pulmonary Nodules by Community Pulmonologists: A Multicenter Observational Study. Chest. 2015;148(6):1405-1414. doi:10.1378/chest.15-0630.
- Blagev DP, Lloyd JF, Conner K, et al. Follow-up of incidental pulmonary nodules and the radiology report. J Am Coll Radiol. 2014;11(4):378-383. doi:10.1016/j.jacr.2013.08.003.
- 7. Bhadra K, Mattingley J, Pritchett M. Electromagnetic navigation bronchoscopy with advanced fluoroscopy based localization and intraprocedural local registration for the evaluation of peripheral pulmonary nodules. Paper presented at: CHEST Annual Meeting; October 23, 2019; New Orleans, LA.
- Aboudara M, Roller L, Rickman O, et al. Improved diagnostic yield for lung nodules with digital tomosynthesiscorrected navigational bronchoscopy: Initial experience with a novel adjunct. Respirology. 2019 July 2. doi:10.1111/resp.13609.
- 9. Based on internal report #DGR00512 for the ILLUMISITE™ platform. March 2018.
- Based on internal test report #DGR00596, rev A, column J, Medtronic's Summative Survey Results Report; 16 physicians surveyed. March 2019.
- 11. Based on internal report #DLD00032 for the ILLUMISITE™ platform. May 2019.
- 12. Based on internal report #DVR0022, A chronic, GLP study to evaluate the usability and safety of the coring tool in a porcine model. September 2014.
- 13. Based on internal report #DLD00027, CrossCountry™ access tool usability study report. April 2015
- Folch E, Khandhar S, et al. Electromagnetic navigation bronchoscopy for peripheral pulmonary lesions: oneyear results of the prospective, multicenter NAVIGATE study. J Thorac Oncol. 2019; 14(3): 445-458.
- 15. Based on internal test report #PCG-028, Signia+ stapling system competitive claims. March 27, 2017.
- Based on internal test report #PCG-032, Comparison of undercrimped staple measurements between Medtronic and Ethicon powered stapling platforms. May 10, 2018.
- 17. Based on internal test report #RE00147607, 4.5 mm round staple pull-apart analysis report.
- 18. Based on internal report #RE00014682 and #RE00254013, Small diameter reload summative usability. June 19–20, 22, 2017
- 19. Based on report #RE00142825, Image creation for Signia™ small diameter reload. March 26, 2019.
- 20. Based on internal report #RE00014682, Small diameter reload summative usability. June 19-20, 22, 2017.
- 21. Based on internal report #RE00209946, Vessel tension analysis: Signia™ small diameter reload vs. Echelon™ PVS. Sept. 17, 2019.
- 22. Based on internal report #RE00190239, Signia™ small diameter reload chronic study statistical analysis. March 26, 2019.
- 23. Based on internal test report #PCG-001, Tyvek pull-apart test comparing Echelon™ and Tri-Staple™ technology. March 2011.
- 24. Based on internal test report #PCG-002, In-vitro leak comparison. March 8, 2011.
- 25. Based on internal test report #PCG-007 rev 1, Perfusion into Clamped Media. Sept. 2, 2011.
- 26. Based on internal test report #PCG-018, 2-D FEA of linear staplers. November 2012.
- 27. Based on internal test report #2128-002-2, Final analysis of staple-line vascularity using MicroCT. July 2015.
- 28. Based on internal test report #PCG-004, Undercrimp comparisons in increasing pads of foam between Echelon™ and Tri-Staple™ technology. January 2012.

- 29. Based on internal test report #PCG-006, Staple formation comparison between Medtronic EGIA60AXT and Ethicon ECR60G in an ex-vivo tissue model. January 2012.
- 30. Based on internal test report #PCG-019, Comparative test of Endo GIA" stapler using black reloads with Tri-Staple" technology and Ethicon Echelon Flex" black reloads. June 2014.
- Based on internal report #RE00147462, Pulmonary sealing claims for the LigaSure™ LF1930T device (memo).
 March 2018
- 32. Based on internal report #RE00138840, LIG-45 memo, device length recommendation, thoracic (LF1930T). Feb.
- 33. Based on internal test report #RE00125866, Jaw force and gap range burst pressure evaluation of EB4 thoracic Maryland device (LF1930T); conducted on bovine tissue. Nov. 2017.
- 34. Based on internal test report #RE00134865, Burst pressure verification of pulmonary bovine veins using the LigaSure™ LF1930T device. Jan. 2018.
- 35. Based on internal test report #RE00122515, Verification of the LigaSure™ LF1930T device in a GLP chronic hemostasis canine study on pulmonary vasculature. Jan. 2018.
- 36. Based on internal test report #RE00128442, GLP acute pulmonary vasculature hemostasis verification study of the LigaSure™ LF1930T device in hounds. Dec. 2017.
- 37. Based on internal test report #RE00140529 rev A, LigaSure™ Maryland device, nano-coated (LF19XX) tissue testing (memo). March 2018.
- 38. Based on internal test report #RE00073194, Tissue sticking comparison of the Ethicon G2[™], Voyant[™] 5 mm Fusion, LigaSure[™] LF1737, and LigaSure[™] LF1937 devices conducted on porcine tissue using the ForceTriad[™] energy platform. Jan. 2017.
- 39. Based on internal report #RE00147462, Pulmonary sealing claims for the LigaSure™ LF1930T device (memo).

 March 2018.
- 40. Based on internal report #R0047634_A, Comparison of various competitor devices versus the Sonicision™ device and LiqaSure™ LF1637 and LF1737 devices; acute porcine study. Nov.–Dec. 2013.
- 41. Based on internal test report #RE00071599, LF19XX MJC marketing claims testing conducted on porcine tissue, Feb. 2017.
- Based on internal test report #RE00100005, Marketing validation of LF1930T: LigaSure™ Maryland jaw thoracic vessel sealer/divider, Houston and Lexington, MA; independent surgeon feedback collected during porcine labs. Jan. 2018.
- 43. Okada M, Miyata Y, Takamochi K, Tsutani Y, Oh S, Suzuki K. Prospective feasibility study of sealing pulmonary vessels with energy in lung surgery. J Thorac Cardiovasc Surg. 2019;157(1):388-395. doi:10.1016/j.jtcvs.2018.02.113.
- 44. Bigdeli AK, Gazyakan E, Schmidt VJ, Hernekamp FJ, Harhaus L, Henzler T. Indocyanine green fluorescence for free-flap perfusion imaging revisited: advanced decision making by virtual perfusion reality in Visionsense™ fusion imaging angiography. Surg Innov. 2016;23(3):249–260.
- 45. Based on internal test report #00452, Summary of bench testing performance data on VS3-IR system with camera, endoscope-IR and MMS-IR. March 2020. Medtronic data on file.
- 46. Abdelrahman M, Belramman A, Salem R, Patel B. Acquiring basic and advanced laparoscopic skills in novices using two-dimensional (2D), three-dimensional (3D), and ultra-high definition(4K) vision systems: A randomized control study. Int J Surg. 2018;53: 333–338.
- 47. Based on internal test report #RE00286187, EleVisionTM 4K system Preclinical and Benchtop Evaluation. August 2020.
- 48. Green JL, Suresh V, Bittar P, Ledbetter L, Mithani SK, Allori A. The Utilization of Video Technology in Surgical Education: A Systematic Review. J Surg Res. 2019;235:171-180.
- 49. Henderson LM, Rivera MP, Basch E. Broadened Eligibility for Lung Cancer Screening: Challenges and Uncertainty for Implementation and Equity. JAMA. 2021;325(10):939–941. doi:10.1001/jama.2020.26422.
- Triplette M, Thayer JH, Pipavath SN, Crothers K. Poor uptake of lung cancer screening: opportunities for improvement. J Am Coll Radiol. 2019; 16: 446–50.

LungGPS is commercialized in partnership with Philips.

Important: Please refer to the package insert for complete instructions, contraindications, warnings and precautions.

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