April 23, 2025

Annalise-AI
Haylee Bosshard
Regulatory Affairs Manager
Level P, 24 Campbell St
Sydney, NSW 2000
Australia

Re: K250831
Trade/Device Name: Annalise Enterprise
Regulation Number: 21 CFR 892.2080
Regulation Name: Radiological Ccomputer aided triage and notification software
Regulatory Class: Class II
Product Code: QFM, QAS
Dated: April 17, 2025
Received: April 17, 2025

Dear Haylee Bosshard:

We have reviewed your section 510(k) premarket notification of intent to market the device referenced above and have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (the Act) that do not require approval of a premarket approval application (PMA). You may, therefore, market the device, subject to the general controls provisions of the Act. Although this letter refers to your product as a device, please be aware that some cleared products may instead be combination products. The 510(k) Premarket Notification Database available at https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfpmn/pmn.cfm identifies combination product submissions. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration. Please note: CDRH does not evaluate information related to contract liability warranties. We remind you, however, that device labeling must be truthful and not misleading.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 898. In addition, FDA may publish further announcements concerning your device in the Federal Register.

Additional information about changes that may require a new premarket notification are provided in the FDA guidance documents entitled "Deciding When to Submit a 510(k) for a Change to an Existing Device"

(https://www.fda.gov/media/99812/download) and "Deciding When to Submit a 510(k) for a Software Change to an Existing Device" (https://www.fda.gov/media/99785/download).

Your device is also subject to, among other requirements, the Quality System (QS) regulation (21 CFR Part 820), which includes, but is not limited to, 21 CFR 820.30, Design controls; 21 CFR 820.90, Nonconforming product; and 21 CFR 820.100, Corrective and preventive action. Please note that regardless of whether a change requires premarket review, the QS regulation requires device manufacturers to review and approve changes to device design and production (21 CFR 820.30 and 21 CFR 820.70) and document changes and approvals in the device master record (21 CFR 820.181).

Please be advised that FDA's issuance of a substantial equivalence determination does not mean that FDA has made a determination that your device complies with other requirements of the Act or any Federal statutes and regulations administered by other Federal agencies. You must comply with all the Act's requirements, including, but not limited to: registration and listing (21 CFR Part 807); labeling (21 CFR Part 801); medical device reporting (reporting of medical device-related adverse events) (21 CFR Part 803) for devices or postmarketing safety reporting (21 CFR Part 4, Subpart B) for combination products (see https://www.fda.gov/combination-products/guidance-regulatory-information/postmarketing-safety-reporting-combination-products); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820) for devices or current good manufacturing practices (21 CFR Part 4, Subpart A) for combination products; and, if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR Parts 1000-1050.

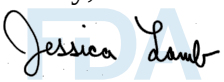
All medical devices, including Class I and unclassified devices and combination product device constituent parts are required to be in compliance with the final Unique Device Identification System rule ("UDI Rule"). The UDI Rule requires, among other things, that a device bear a unique device identifier (UDI) on its label and package (21 CFR 801.20(a)) unless an exception or alternative applies (21 CFR 801.20(b)) and that the dates on the device label be formatted in accordance with 21 CFR 801.18. The UDI Rule (21 CFR 830.300(a) and 830.320(b)) also requires that certain information be submitted to the Global Unique Device Identification Database (GUDID) (21 CFR Part 830 Subpart E). For additional information on these requirements, please see the UDI System webpage at https://www.fda.gov/medical-devices/device-advice-comprehensive-regulatory-assistance/unique-device-identification-system-udi-system.

Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21 CFR 807.97). For questions regarding the reporting of adverse events under the MDR regulation (21 CFR Part 803), please go to https://www.fda.gov/medical-devices/medical-device-safety/medical-device-reporting-mdr-how-report-medical-device-problems.

For comprehensive regulatory information about medical devices and radiation-emitting products, including information about labeling regulations, please see Device Advice (https://www.fda.gov/medical-devices/device-advice-comprehensive-regulatory-assistance) and CDRH Learn (https://www.fda.gov/training-and-continuing-education/cdrh-learn). Additionally, you may contact the Division of Industry and Consumer Education (DICE) to ask a question about a specific regulatory topic. See the DICE website (https://www.fda.gov/medical-devices/device-advice-comprehensive-regulatory-

assistance/contact-us-division-industry-and-consumer-education-dice) for more information or contact DICE by email (DICE@fda.hhs.gov) or phone (1-800-638-2041 or 301-796-7100).

Sincerely,



Jessica Lamb, Ph.D.
Assistant Director
Imaging Software Team
DHT8B: Division of Radiological Imaging Devices and Electronic Products
OHT8: Office of Radiological Health
Office of Product Evaluation and Quality
Center for Devices and Radiological Health

Enclosure

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Food and Drug Administration

Indications for Use

Form Approved: OMB No. 0910-0120
Expiration Date: 07/31/2026
See PRA Statement below.

Submission Number *(if known)*

K250831

Device Name

Annalise Enterprise

Indications for Use *(Describe)*

Intended context:
Annalise Enterprise is a device designed to be used in the medical care environment to aid in triage and prioritization of studies with features suggestive of the following findings:
• pleural effusion* [1]
• pneumoperitoneum* [2]
• pneumothorax
• tension pneumothorax
• vertebral compression fracture* [3]

*See additional information below.

The device analyzes studies using an artificial intelligence algorithm to identify findings. It makes study-level output available to an order and imaging management system for worklist prioritization or triage.
The device is not intended to direct attention to specific portions of an image and only provides notification for suspected findings.
Its results are not intended:
• to be used on a standalone basis for clinical decision making
• to rule out specific findings, or otherwise preclude clinical assessment of chest X-ray studies

Intended modality:
Annalise Enterprise identifies suspected findings in digitized (CR) or digital (DX) chest X-ray studies.

Intended user:
The device is intended to be used by trained clinicians who are qualified to interpret chest X-ray studies as part of their scope of practice.

Intended patient population:
The intended population is patients who are 22 years or older.

Additional information:
The following additional information relates to the findings listed above:

[1] Pleural effusion
• specificity may be reduced in the presence of scarring and/or pleural thickening
• standalone performance evaluation was performed on a dataset that included supine and erect positioning
• use of this device with prone positioning may result in differences in performance

[2] Pneumoperitoneum
• standalone performance evaluation was performed on a dataset that included supine and erect

positioning where most cases were of unilateral right-sided and bilateral pneumoperitoneum
• use of this device with prone positioning and for unilateral left-sided pneumoperitoneum may result in differences in performance

[3] Vertebral compression fracture
• intended for prioritization or triage of worklists of Bone Health and Fracture Liaison Service program clinicians
• standalone performance evaluation was performed on a dataset that included only erect positioning
• use of this device with supine positioning may result in differences in performance

Type of Use *(Select one or both, as applicable)*

☒ Prescription Use (Part 21 CFR 801 Subpart D) ☐ Over-The-Counter Use (21 CFR 801 Subpart C)

CONTINUE ON A SEPARATE PAGE IF NEEDED.

This section applies only to requirements of the Paperwork Reduction Act of 1995.

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K250831

510(k) Summary

I. SUBMITTER

Company Name	Annalise-AI
Address	Level P, 24 Campbell Street Sydney, NSW 2000 Australia
Phone Number	+61 1800-958487
Contact Person	Haylee Bosshard
Date Prepared	April 23, 2025

II. SUBJECT DEVICE

Manufacturer Name	Annalise-AI
Device Name	Annalise Enterprise
Classification Name	Radiological computer aided triage and notification software (21CFR892.2080)
Regulatory Class	II
Product Code	QFM, QAS*

III. PREDICATE DEVICE

Manufacturer Name	Annalise-AI
Device Name	Annalise Enterprise CXR Triage Trauma
510(k) reference	K222179
Classification Name	Radiological computer aided triage and notification software (21CFR892.2080)
Regulatory Class	II
Product Code	QFM, QAS*

This predicate has not been subject to a design-related recall. No reference devices were used in this submission.

* Note that product code QAS only applies to clinical condition of interest: pneumoperitoneum. All other conditions are submitted under product code QFM.

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IV. DEVICE DESCRIPTION

Annalise Enterprise is a software workflow tool which uses an artificial intelligence (AI) algorithm to identify suspected findings on chest X-ray studies in the medical care environment. The findings identified by the device include pneumothorax, tension pneumothorax, pleural effusion, pneumoperitoneum and vertebral compression fracture.

Radiological findings are identified by the device using an AI algorithm – a convolutional neural network trained using deep-learning techniques. Images used to train the algorithm were sourced from datasets that included a range of equipment manufacturers including. This dataset, which contained over 750,000 chest X-ray imaging studies, was labelled by trained radiologists regarding the presence of the findings of interest.

The performance of the device's AI algorithm was validated in a standalone performance evaluation, in which the case-level output from the device was compared with a reference standard ('ground truth'). This was determined by two ground truthers, with a third truther used in the event of disagreement. All truthers were US board-certified radiologists.

The device interfaces with image and order management systems (such as PACS/RIS) to obtain chest X-ray studies for processing by the AI algorithm. Following processing, if any of the clinical findings of interest are identified in the study, the device provides a notification to the image and order management system for prioritization of that study in the worklist. This enables users to review the studies containing features suggestive of these clinical findings earlier than in the standard clinical workflow. It is important to note that the device will never decrease a study's existing priority in the worklist. This ensures that worklist items will never have their priorities downgraded based on AI results.

The device workflow is performed parallel to and in conjunction with the standard clinical workflow for interpretation of chest X-ray studies. The device is intended to aid in prioritization and triage of radiological medical images only.

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V. INDICATIONS FOR USE

The Indications for Use statement is as follows:

Intended context	*Annalise Enterprise is a device designed to be used in the medical care environment to aid in triage and prioritization of studies with features suggestive of the following findings:* • *pleural effusion*[1] • *pneumoperitoneum*[2] • *pneumothorax* • *tension pneumothorax* • *vertebral compression fracture*[3] *See Additional Information below.* *The device analyzes studies using an artificial intelligence algorithm to identify findings. It makes study-level output available to an order and imaging management system for worklist prioritization or triage.* *The device is not intended to direct attention to specific portions of an image and only provides notification for suspected findings.* *Its results are not intended:* • *to be used on a standalone basis for clinical decision making* • *to rule out specific findings, or otherwise preclude clinical assessment of chest X-ray studies*
Intended modality	*Annalise Enterprise identifies suspected findings in digitized (CR) or digital (DX) chest X-ray studies.*
Intended user	*The device is intended to be used by trained clinicians who are qualified to interpret chest X-ray studies as part of their scope of practice.*
Intended patient population	*The intended population is patients who are 22 years or older.*
Additional information	*The following additional information relates to the findings listed above:* [1] *Pleural Effusion* • *specificity may be reduced in the presence of scarring and/or pleural thickening* • *standalone performance evaluation was performed on a dataset that included supine and erect positioning* • *use of this device with prone positioning may result in differences in performance* [2] *Pneumoperitoneum*

- *standalone performance evaluation was performed on a dataset that included supine and erect positioning where most cases were of unilateral right-sided and bilateral pneumoperitoneum*
- *use of this device with prone positioning and for unilateral left-sided pneumoperitoneum may result in differences in performance*

[3] *Vertebral Compression Fracture*

- *intended for prioritization or triage of worklists of Bone Health and Fracture Liaison Service program clinicians*
- *standalone performance evaluation was performed on a dataset that included only erect positioning*
- *use of this device with supine positioning may result in differences in performance*

The Indications for Use statement of the subject device differs to the predicate device only in the clinical conditions of interest, however a standalone performance evaluation was conducted and demonstrated that the device is as safe and effective for its intended use. Both the subject and predicate device are intended for use to assist with worklist triage by providing notifications of suspected findings and their associated priority.

VI. COMPARISON OF TECHNOLOGICAL CHARACTERISTICS WITH THE PREDICATE DEVICE

The subject device was evaluated and compared to the predicate device with respect to the following characteristics:

1. Indications for Use
2. Target population
3. Anatomical site and modality
4. Intended user and clinical use environment
5. Technical method for notification and prioritization
6. Device input and radiological image protocol
7. Device output and means of notification to user
8. System components
9. Location where results are received
10. Prioritization relationship to standard of care workflow
11. AI models and performance of algorithm.

The following characteristics showed a difference between the subject and predicate devices. The different characteristics include:

1. Set of findings and algorithm
2. AI models and performance of algorithm

All differences were technological characteristic differences that do not raise different questions of safety and effectiveness. Furthermore, we have provided a standalone performance study for this submission to evaluate these differences and establish substantial equivalence.

VII. PERFORMANCE DATA

The following performance data have been provided to support evaluation of substantial equivalence.

A. Software Verification and Validation Testing

Software verification and validation testing was conducted, and documentation was provided as recommended by FDA's Guidance for Industry and FDA Staff, "Content of Premarket Submissions for Device Software Functions - *Guidance for Industry and Food and Drug Administration Staff*", June, 2023.

B. Performance Testing

Performance of the subject device was assessed in four performance studies to satisfy requirements set forth in the special controls per 21CFR892.2080. These included standalone performance and triage effectiveness evaluations.

Standalone performance was assessed via a retrospective, anonymized study of adult patient, DICOM-compliant chest X-ray cases. The test dataset used during the standalone performance evaluation was previously acquired (K213941, K222268 and K222179) and independent from the training dataset used in model development. The standalone performance study was conducted on four independently assessed cohorts which equated to a total dataset of 3,252 cases collected consecutively from four US hospital network sites.

The performance testing datasets included representation across subgroups for patient demographics (gender [female: 44.7-59.0%, male: 41.0-55.3], age [mean: 62.2-67.4 years, min: 22, max: 99-105], ethnicity [Hispanic: 6.5-8.3%, Unavailable: 2.6-6.5%], race [White/Caucasian: 80.3-84.9%, Other: 12.9-17.4%, Unavailable: 2.2-3.9%]), co-existing findings or abnormalities and technical parameters (imaging equipment make, model). The datasets included Agfa, Carestream, Fujifilm, GE Healthcare, Kodak, Konica Minolta, McKesson, Philips, Siemens, Varian X-ray scanners for the pivotal study.

To determine the ground truth, each deidentified case was annotated in a blinded fashion by at least two ABR-certified and protocol-trained radiologists who interpret chest X-ray as part of regular clinical practice (ground truthers), with consensus determined by two ground truthers and a third ground truther in the event of disagreement. The key results of the study are summarized in the table below.

Finding	Product Code	AUC (95% CI)
Pneumothorax	QFM	0.984 (0.976, 0.990)
Tension pneumothorax	QFM	0.989 (0.984, 0.994)
Pneumoperitoneum	QAS	0.987 (0.976, 0.994)
Pleural effusion	QFM	0.977 (0.969, 0.984)
Vertebral compression fracture	QFM	0.972 (0.960, 0.982)

Finding	Operating Point	Sensitivity % (Se) (95% CI)	Specificity % (Sp) (95% CI)
Pneumothorax	0.200	97.1 (95.5,98.6)	88.2 (85.4,90.8)
	0.250	96.2 (94.3,98.1)	91.9 (89.5,94.1)
	0.300	95.0 (92.8,97.1)	94.1 (91.9,95.9)
	0.350	93.1 (90.7,95.5)	95.6 (93.7,97.2)
	0.400	90.7 (88.0,93.3)	96.7 (95.0,98.2)
Tension pneumothorax	0.225	96.0 (92.0,99.2)	94.0 (92.3,95.6)
	0.250	95.2 (91.2,98.4)	94.6 (93.1,96.2)
	0.300	93.6 (88.8,97.6)	95.6 (94.1,96.9)
	0.350	89.6 (84.0,94.4)	96.6 (95.3,97.8)
	0.400	87.2 (80.8,92.8)	97.5 (96.4,98.6)
Pneumoperitoneum	0.250	96.2 (92.4,99.0)	87.9 (83.2,92.1)
	0.300	94.3 (89.5,98.1)	90.5 (86.3,94.2)
	0.350	92.4 (86.7,97.1)	93.7 (90.0,96.8)
	0.400	91.4 (85.7,96.2)	95.8 (92.6,98.4)
	0.450	87.6 (81.0,93.3)	98.4 (96.3,100.0)
Pleural effusion	0.380	96.7 (95.0,98.1)	86.8 (83.6,89.5)
	0.425	94.4 (92.3,96.5)	89.5 (86.8,92.1)
	0.450	92.9 (90.7,95.0)	91.3 (88.6,93.7)
	0.475	89.8 (87.1,92.3)	93.7 (91.5,95.9)
	0.500	87.6 (84.6,90.5)	95.5 (93.5,97.0)
Vertebral compression fracture	0.460	93.4 (90.1,96.0)	85.8 (82.1,89.6)
	0.500	92.6 (89.3,95.6)	90.9 (87.7,93.7)
	0.550	87.1 (83.1,90.8)	94.7 (91.8,96.9)

The results demonstrate the subject device establishes effective triage within a clinician's queue based on high sensitivity and specificity. Further, these results are substantially equivalent to those of the predicate device.

Triage effectiveness (turn-around time) was assessed by an internal bench study using a dataset of n=303 cases positive for any of the findings eligible for prioritization. These cases were collected from multiple data sources spanning a variety of geographical locations, patient demographics and technical characteristics. The results demonstrated a triage turn-around time of 42.3 (95% CI: 41.2, 43.4) seconds, which is substantially equivalent to the total performance time published for the predicate device.

Therefore, the subject device has been shown to satisfy the performance requirements per 21CFR892.2080, for 'Radiological computer aided triage and notification software', by providing clinically effective triage for non-contrast brain CT studies containing features suggestive of clinical findings of interest. This data demonstrates the subject device is safe and effective for its intended use, and thereby supports substantial equivalence.

VIII. CONCLUSIONS

The subject device and the predicate device are both software only packages, devices intended to assist with worklist triage by providing notification of findings. The subject and predicate devices utilize the same principles of operation and work in parallel to the current standard of care workflow.

Both the subject and predicate devices use an artificial intelligence algorithm to identify findings in images and require the same inputs (DICOM image data) and provide the same outputs (prioritization for a medical worklist).

The technological differences between the subject and predicate devices do not raise new questions of safety and effectiveness.

Standalone performance testing and the comparison of technological characteristics with the predicate devices shows that the subject device:

- performs as intended,
- is safe and effective for its intended use, and
- is therefore substantially equivalent to the predicate device.