



MEDxConnect Gets the Job Done Easier & Faster

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User Interface Overview

MEDxConnect is designed to support the demanding job of reading exams and producing reports in a busy multi-tasking environment. The automatic processing provided by the MEDxConnect workflow together with the efficient user interface makes the radiologist's job easier and faster. The system is designed to boost productivity and to help radiologists deliver better patient care. Our customers report productivity improvements ranging from 18% to 30%.

The focal point of the MEDxConnect user interface is the virtual worklist. The virtual worklist organizes and presents orders for efficient reading. Action commands are optimized to support typical reading scenarios and exceptions as well.

The full power of the MEDxConnect workflow processing is delivered implicitly via the virtual worklist. The worklist contains only orders that have been assigned to the logged-in radiologist. The assigned orders may have studies originating from the local PACS or any remote site. Any order appearing on the worklist is ready for immediate reading. The radiologist saves time by doing all the work from all the sites on one work station.

The orders are sorted and color coded in priority order, with stat orders displayed on top in red. The radiologist can go right to the work at hand to begin immediately.

The radiologist can log-in to any supported workstation at any site and still see the same personalized worklist. Optionally, the radiologist can also see what orders other radiologists are working on, or what reports they have completed.

Each order appearing on the worklist has already been automatically researched by the MEDxConnect workflow to find all relevant historical studies and reports. Configurable policies allow these studies to be copied from the source archive and pre-positioned into the PACS or viewer cache for immediate viewing. By easily seeing the relevant comprehensive history, the radiologist is enabled to make the most informed diagnosis. Our customers remark that MEDxConnect makes them better doctors.

Collaboration with other radiologists is quickly accomplished by simultaneously viewing the same studies, regardless of location. An order may be reassigned to another radiologist if required. Helpful notes and comments can be attached to an order. Easy collaboration improves the work quality of the entire medical team.

Automatic work sharing can also improve the overall output of the radiologic team. Time sensitive work sharing can be used to ensure service level agreements are consistently met. If a stat order remains unclaimed after a certain time period for example, it can be automatically reassigned to other radiologists. Better response times improve patient care in cases like this.



The Virtual Worklist

The virtual worklist is the central focus of the user interface. The My Worklist tab presents all orders assigned to the radiologist. Orders are assigned to radiologists based on eligibility and work assignment policies. A personalized worklist is generated for each radiologist. Radiologists don't need to waste time searching through orders not assigned to them.

Each order displays a procedure description, patient name, exam date, accession number, physician, facility where the exam originated, and if the order is claimed, the name of the claiming radiologist, the claim timestamp, and the claiming workstation.



Depending on the assignment policy, an order may be assigned to more than one radiologist. It will appear on the worklist of each radiologist to whom it was assigned. Any order appearing on the worklist is ready to be "claimed". When a radiologist claims an order, the order is marked claimed on every other worklist where it appears. The claiming radiologist's name is also displayed. A claimed order is distinguished by a different color.

An order will only appear on the worklist if it is ready for reading. The primary study must have been verified, and copies of all required images pre-positioned in the reading PACS for immediate viewing.

Orders from the local site or remote sites can appear on the worklist. If the order is from a remote site, MEDxConnect will have already done the work to copy the study from the remote originating PACS and to preload it into the reading PACS. Any necessary transformations are automatically handled during this pre-positioning operation. Differences in DICOM format, procedure codes, and hanging protocols are mapped. Duplicate medical record numbers are detected and differentiated. The studies loaded into the reading PACS are stored in temporary storage and will be eventually flushed out. MEDxConnect enhances performance by pre-positioning remote studies and reports but these are copies, so the original content of all remote archives remains undisturbed. The capability to read remote studies on the Radiologist's local workstation is a great convenience and saves time. It also enables work sharing policies across sites.

Orders can be sorted by priority, with stat orders appearing at the top of the list. If an order has been claimed by another assigned radiologist, the order will appear with a lighter color. An order already claimed can still be selected for viewing. If the order has not already been pre-positioned, the radiologist can initiate a "manual get" to move a copy of the study to his reading PACS. This capability enables Radiologists to consult by viewing the same studies in real time.

A radiologist can reassign an order appearing on the worklist to another radiologist. In this case, the order will appear on the worklist of the radiologist to whom it was reassigned, as an order available to be claimed. This feature is useful to override the default assignment policies when there is a need for a specific radiologist to read the study.

There may be cases where a single order contains multiple primary studies. This may be the primary order or a historical order. MEDxConnect handles these cases, showing the single order on the worklist, but displaying all the studies when the order is opened.



Claiming an Order

When the user claims an order, an overview panel is opened to display additional information about the study. MEDxConnect will also orchestrate the dictation system to start and the PACS viewer to display the images. The dictation system client occupies a portion of the screen.

The overview panel has tabs to show order details and notes attached to the order, scanned documents attached to the order, historical studies and reports judged to be relevant to the exam, associated and related orders, and any current report for the exam. It's also possible to open this overview panel, without actually claiming the order, by clicking on the detail button on any order in the workload.



The historical studies and reports are discovered when the MEDxConnect workflow performs a search of all archives. This search is usually done as a pre-requisite step well in advance of the order appearing on the workload. Relevancy is determined by configurable rules. Patient name, patient identifier, procedure codes and other data may be evaluated by the rules.

By the time the order is claimed, the priors have already been copied and pre-positioned into the reading PACS for immediate viewing. It's possible to set a policy to limit the number of relevant priors that are pre-positioned. Any remaining priors that have not been pre-positioned are listed in the overview panel with the option to fetch them on demand. Relevant reports are also listed in the overview panel. Reports are fetched on demand.

If the prior study is from a remote site, MEDxConnect performs any necessary transformations during the pre-position operation. Differences in DICOM format, procedure codes, and hanging protocols are mapped. Duplicate medical record numbers are detected and differentiated. Copies of prior studies loaded into the reading PACS are stored in temporary storage and will be eventually flushed out. The automatic discovery, pre-positioning, and presentation of relevant priors is a great productivity aid to radiologists, saving time and improving patient care by assembling all relevant information for immediate viewing.

Working with a Claimed Order

Claiming an order opens the overview panel for that order. The details tab shows patient information and any notes that have been attached to the order by a technician or other radiologist. The scanned tab lists any documents that have been scanned and attached to the order. The historical tab lists the relevant prior studies and reports that have been discovered for this order. Studies are categorized into those that have been pre-positioned in the local PACS and those that require a manual fetch. The associated tab shows associated and related orders. The report tab shows the report for the order.

Orders for the same patient can be associated for a common dictation. Each associated order will be archived with the same report. A radiologist may associate one order with another order for more efficient handling. This is useful when one order contains all the images, but there is a second order with zero images that was generated for billing purposes. Associated orders are subsequently treated as a single order.



Related orders are also shown under the associated tab. Orders are related if they are for the same patient and facility and they meet certain configurable criteria established by the administrator. For example, examines scheduled on the same day may be automatically identified as related. The radiologist has the option to associate the related orders by picking them from a list.

A claimed order can be unclaimed. An unclaimed order is released and made available to other assigned radiologists. The color indicating claimed status on all worklists is reverted back to the color to indicate availability for claiming. A claimed order can also be suspended, allowing the radiologist to retain the claim on the order, but permitting another study to be claimed and read. If a dictation is in progress, it can be saved or discarded. Suspended orders can be unsuspended to resume the interpretation. Saved dictations are resumed.

The radiologist may use features in the viewer to add annotations to the DICOM images. The annotated image is captured as a new image and added to the DICOM set. When this occurs, MEDxConnect will automatically update the archival location of the original image with the new annotated image.

Dictating the Report

After reviewing the primary study, the prior studies, and prior reports, the radiologist will dictate the report. Typically, a modern voice to text system is used. The report is captured by the dictation system and the radiologist “signs” the report to finalize it. The dictation client is closed, the image viewer is closed, and the virtual worklist is re-displayed. The completed order is removed from the My Worklist tab and reappears on the Finalized Tab after MEDxConnect receives the report.

Reviewing Finalized Orders

The Finalized Tab lists all the orders that have been completed by all the radiologists. Viewing filters can be applied to reduce the orders listed. Any order can be selected for viewing. If the selected order has not been pre-positioned on the local PACS, a manual get can be performed to enable viewing. This feature is useful for post report consultation.

A finalized order can be selected for the purpose of attaching an addendum to the report. To attach an addendum, the order is moved back to the active worklist, marked claimed, and opened, which activates the viewer and dictation client again. The radiologist can then dictate an addendum to the report. If the study has not been pre-positioned into the local PACS, a get manual operation can be used to fetch it.

Benefits to the Radiologist

The MEDxConnect user interface delivers all the power of the MEDxConnect workflow to the radiologist to make the interpretation job faster and easier. The features described above, have all been designed with productivity in mind.

Radiologists can get the job done faster because the work assignments are personalized, organized, and presented in a way to support the rapid multi-tasking environment in which many radiologists work. Radiologists can work at their location and workstation of choice. All relevant information is collected and presented to quickly inform the diagnosis, leading to better patient care. Easy collaboration and work sharing enable continuing education, also contributing to better patient care.