
CDC IMMIGRATION REQUIREMENT UPDATE:

ALL U.S. PANEL PHYSICIAN SITES REQUIRED TO

USE DIGITAL RADIOGRAPHY FOR CHEST RADIOGRAPHS

OF APPLICANTS FOR U.S. IMMIGRATION

BY OCTOBER 1, 2014

**U.S. Department of Health and Human Services
Centers for Disease Control and Prevention
National Center for Emerging and Zoonotic Infectious Diseases**

Division of Global Migration and Quarantine

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This update applies to chest imaging of persons overseas applying for U.S. immigration status and nonimmigrants who are required to have an overseas medical examination, hereafter referred to as applicants.

The update provides notice to all panel physician sites, 1 year in advance of the implementation date, to allow sufficient time to comply with digital radiography requirements.

The Culture and Directly Observed Tuberculosis Technical Instructions (<http://www.cdc.gov/immigrantrefugeehealth/exams/ti/panel/tuberculosis-panel-technical-instructions.html>) define the indications for chest radiography during the overseas medical screening examination. Currently, panel physician sites may perform plain chest radiographs using either analog or digital radiography. Digital radiography includes both computed radiography (CR) and direct digital radiography (DDR). While digital radiography systems are initially more expensive than analog systems, long-term savings are realized due to absence of film and processing costs and faster applicant imaging times. Compared with analog radiography, digital radiography generally produces better image quality due to fewer technical requirements. It offers more consistent image labeling and easier image comparison, and allows physicians to easily optimize, store and send chest radiographs. In addition, if DDR systems are used properly, DDR delivers lower radiation doses during exposure. These features improve diagnostic interpretation and increase applicant safety.

Therefore, as of October 1, 2014, all U.S. panel sites must use digital radiography (CR or DDR) to obtain plain chest radiographs. This means that all applicants applying to enter the United States who are required to have a chest radiograph, must undergo digital radiography, as of October 1, 2014. Digitized analog images are not digital images and are not acceptable.

Panel sites should be mindful of the following requirements as they purchase or upgrade digital radiography systems, and have these requirements in place by October 1, 2014:

- Images must be interpreted on a high-resolution screen. The workstation screens used by technologists are not adequate for image interpretation and should never be used for diagnosis.
- Images should not be interpreted from laser-printed films, as the quality of printing varies greatly and film format cannot be optimized.
- All of the applicant's chest images obtained by the panel radiology site must be burned onto the CD-R (Compact Disc-Recordable) and the CD-R must be given to the applicant. With this requirement, chest radiograph images given to the applicant may no longer be printed onto laser or other types of film.
- Just as panel physicians must store completed Department of State (DS) forms for 1 year after the examination, digital radiography images must be archived at the radiology facility for at least 1 year from the radiograph date.

CD-R Requirements

These requirements currently apply to panel sites with existing digital radiography systems and will apply to all panel sites by October 1, 2014:

For panel site radiology facilities:

- The chest radiograph images burned onto the CD-R must be Digital Imaging and Communication in Medicine (DICOM)-standard and uncompressed. An average uncompressed chest image contains 10-15 MB of raw data.
- Rewritable (CD-RW) CDs are not acceptable.
- Each CD-R image should display identifying data (at a minimum, applicant's name, radiology facility name, and date of chest radiograph exposure) to allow the receiving health department or office to ensure correct applicant and image identity. Do not burn "anonymized" images onto the CD-R.
- Each CD-R must contain only one applicant's images. Each family member should have his or her own unique CD-R.
- Each CD-R must contain a DICOM viewer to allow the receiving health department to access and optimize the images.
- The CD-R should be placed in an envelope (or jewel case) and the envelope marked with the same identifying data (at a minimum, applicant's name, radiology facility name, and date of chest radiograph exposure) as the CD-R image. When multiple images of the applicant are on the CD-R, all image dates should be listed on the envelope.
- If the DS-3030 Form indicates the applicant has an abnormal chest radiograph suggestive of tuberculosis, the radiology facility should send the CD-R directly to the panel physician. In this situation, the applicant should not transport the CD-R to the panel physician.

For panel physicians:

- Each applicant who has had a chest radiograph overseas, even an applicant with no TB classification, must bring the image into the United States on a CD-R.
- The CD-R envelope should not be stapled to the applicant's DS Forms or other paperwork.
- The CD-R envelope or jewel case should be given to the applicant, with instructions to bring it into the United States and keep it secure for any follow-up medical evaluation. Instruct the applicant that the CD-R should not be given to Customs and Border Protection (CBP) at the U.S. port of entry.

For receiving U.S. health departments and other receiving offices:

- CD-Rs can be viewed in health departments or offices with analog (conventional film-screen) radiography systems or with no radiography systems.
- CD-R images should be accompanied by a DICOM viewer on the CD, which allows the receiver to open and optimize the image's raw data. If no viewer accompanies the image or if the accompanying viewer does not function on a particular computer, the receiver can download and use free viewers, such as ezDICOM, Sante, or ImageJ, a public domain Java image processing and analysis program for uncompressed images. Other viewers are available and mention of these products does not imply endorsement by CDC/DGMQ.
- As images obtained overseas have already been officially interpreted, they can be viewed for comparison on personal computers, if needed.