

De-identifying Images

ShowCase provides you with tools to help de-identify DICOM images to use in teaching files and research studies. It is important to employ such tools to comply with the Privacy Standards in the Health Insurance Portability and Accountability Act of 1996 (HIPAA) that became effective April 15, 2003.

To remove patient identifying information burned into an image

You can erase rectangular areas of an image to the background color. Annotations & erasures apply to all frames in a clip. Note that modifying some image formats (16 bit palette color or monochrome I and II) will convert the images to RGB format when they are saved.

- In an Edit Window, click on the “Annotation” tab and then click on the “Erase Rect” button.
- Hold down the left mouse button and drag the mouse to draw the rectangle to erase. The color of the rectangle will be the color of the point in the image that is under the upper left corner of the rectangle.
- You can use the keyboard arrow keys to “nudge” the rectangle up/down or right/left. You can also resize a selected rectangle using the grab handles on the corners of the rectangle.
- You can draw multiple erase rectangles on an image.

Copy Erase Rectangles to multiple images

The patient name is often in the same place for all images in a series. You do not have to erase each image separately. First add erase rectangles to one of the images in the series window as described above. Then select all of the images in the series window that you wish to erase (Ctrl-A selects ALL images). Click on the Copy Erase Rectangles button. Once all images are erased, you can still go back and adjust the rectangles on any individual image. Once the images are Saved the rectangles will be permanently burned into the images.

To erase the identifying information in image headers

Sometimes customers are not aware that patient names, patient numbers, birth dates and other identifying information is written into the DICOM header information of all images. This is good for transferring vital clinical information, but the data should be removed when the file is transferred to an anonymous teaching file or research database.

ShowCase can remove most of the identifying information, while leaving information that might be needed for clinical research.

To de-identify the image headers do a “Save Series As...” from the ShowCase File Menu.

- The ‘File Menu: Save Series As...’ option allows you to save the series under a new patient name. The Save As dialog allows you to change the patient name, patient number, accession number, study description and series number.
- You can add a ‘series description’ to identify your new image series if you want to.

Save As a New Series

Save Destination C: TEST IMAGES

Patient Last Name Study467

Patient First Name Valve

Patient Number av45-set3

Accession Number

Study ID 12345

Study Description Pediatric Heart

Series Number 1

Series Description Good example images

De-identify recommended DICOM fields

Leave physician names in headers

Save

Cancel

- To remove patient identification information, check the “De-identify recommended DICOM fields” checkbox. See the table below for a list of elements removed.
- By default, the study's physician information is left in the header (elements shown shaded gray in the table below). Make sure the box "Leave physician names in headers" is not checked if you want this information removed.
 - * Note that **Height** and **Weight** are not removed due to research needs.
 - * Note that **Birth date** and time are removed but ShowCase will calculate (if missing) **Patient Age** for research purposes. Age is calculated in years for patients greater than 3 years old, months for patients greater than 3 months old and days for patients less than 3 months old. Ages are capped at 79 years as an added privacy measure.
 - * **Study Date** is changed to the current date (after age is calculated).

Deleted Elements

DICOM Element Name	DICOM Group	DICOM Element
PatientBirthDateElement	0x0010	0x0030
PatientBirthTimeElement	0x0010	0x0032
OtherPatientIDsElement	0x0010	0x1000
OtherPtNameElement	0x0010	0x1001
PtAddressElement	0x0010	0x1040
PtMothersNameElement	0x0010	0x1060
PtMilitaryRankElement	0x0010	0x1080
PtMilitaryBranchElement	0x0010	0x1081
PtRecordLocatorElement	0x0010	0x1090
PtTelephoneElement	0x0010	0x2154
PtOccupationElement	0x0010	0x2180
PtHistoryElement	0x0010	0x21B0
PtCommentsElement	0x0010	0x4000
StudyIDElement	0x0020	0x0010
RefPhysElement	0x0008	0x0090
RefPhysAddrElement	0x0008	0x0092
RefPhysTeleElement	0x0008	0x0094
PhysicianOfRecordElement	0x0008	0x1048
PerformingPhysicianElement	0x0008	0x1050
ReadingPhysicianElement	0x0008	0x1060
OperatorsNameElement	0x0008	0x1070

WARNING: Using the ShowCase “de-identify” checkbox does not guarantee that all patient identification is removed from the image.

- If the imaging equipment manufacturer encodes identifying information in DICOM elements that are not part of the DICOM standard - “private elements”, ShowCase will not know about them. You can read the DICOM elements in an image using the ShowCase “DICOM Information” tab after you double-click an image. This listing shows all of the DICOM elements in the image header.
- You need to decide the level of security you need for your images. ShowCase does not, for example remove the institution and equipment descriptions, which might be used by a knowledgeable person to map the image to a specific patient. If you really need 100% assurance that the patient cannot be traced, you should probably save the image in a non-DICOM format such as a bitmap or AVI file so that NO header information is available. Select the images and click the Export button to export images as AVI files (clips) and BMP files (static images).