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Managing and Preventing Water Damage to Critical Records

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Accidents, severe weather, and natural disasters can result in extensive water damage to important documents, such as health records and analog X-ray films. For example, hurricanes, heavy rains, broken water pipes, and even an overflowing floor drain can cause unexpected damage to records stored in a basement or storage room. Water damage also can be an unexpected side effect of firefighting efforts or the result of a construction project.

When a medical or dental practice faces a loss, such as water-damaged records and analog X-ray films, they should take certain steps. First, they should report the loss to the practice's insurance carriers (general liability and property). Second, they should check the records to determine the extent of the damage. Are the records/films completely destroyed, or are some of them only partially destroyed? Could the records potentially be restored? The extent of the damage will determine the next steps.

Partially Destroyed Records

Moisture in any form and paper don't mix; when exposed to water, paper begins to deteriorate. The same deterioration occurs with analog X-ray film jackets, but the process is slower. Moisture infiltrates the paper's cell structure, followed by swelling and discoloration. This creates an environment that will permit the growth of mold and bacteria on the surface of the paper or film jackets. The growth of mold and bacteria can spread from folder to folder.

Water-damaged records and analog X-ray films can potentially be restored. Although the complete restoration of water-soaked documents often is expensive, it might be wise to attempt to salvage them. However, this process has to begin as quickly as possible because of deterioration. Analog X-ray film is a delicate material and requires careful handling. Ideally, the film should be stored in cool conditions (50°F–64°F) and dry conditions (no more than

50 percent humidity). The film should be protected from sudden changes in temperature and humidity, external lighting, and processing chemicals and their fumes.

In warm weather, mold growth might appear within 48 hours. Mold also can be expected to appear in poorly ventilated areas within the same timeframe. Therefore, reducing high humidity and temperature and venting the areas as soon as feasible is imperative. Water-soaked materials must be kept as cool as possible with good air circulation. Failure to do so could lead to a higher recovery/restoration cost.

As soon as possible, obtain the services of a restoration company to restore the practice's damaged records. Because the restoration company will be working with protected health information, the practice and restoration company should have a HIPAA business associate agreement (BAA) in place.

The restoration company will place the materials into commercial freezers. Once frozen, the materials are moved to a freeze-drying chamber. Air within the freeze-drying chamber is removed through a vacuum process, and the temperature is lowered. The moisture in the materials is converted to a vapor state and removed from the chamber. The temperature in the freeze-drying chamber is gradually increased over time, and any residual moisture is removed.

Freezing, followed by vacuum freeze drying, is one of the most effective methods of removing water from paper records and analog X-ray films. This method has been used in the recovery of books, manuscripts, leather, maps, historical and collectible items, and textiles. Wet analog X-ray films should not be removed from their jackets; instead, they should be placed in a freezer as soon as possible to halt the degradation process and prevent serious damage.

If water damage has resulted from firefighting measures, cooperation with the fire marshal and health and safety officials is vital for a realistic appraisal of the feasibility of a safe salvage effort. Fire safety officers will decide when a building is safe to enter. In these instances, salvage operations are planned so that the environment of water-damaged areas can be stabilized and controlled both before and during the removal of the records and analog X-ray films.

Completely Destroyed Records

When records and analog X-ray files are completely destroyed, the challenge to the practice will be twofold. First, the destroyed records and films will need appropriate disposal. Second, the practice will have to construct new records from information it can assemble.

Damaged records must be completely destroyed to protect patient confidentiality and comply with HIPAA regulations. The records should be dried and then shredded if possible. Do not discard intact records or analog X-ray films. As noted previously, mold may develop so it's best to try to keep the area where records or analog X-ray films are stored cool and dry at a recommended temperature of 70°F and a relative humidity of 30–50 percent.

If no air conditioning exists where items are stored and mold is not evident yet, circulate air with fans until the wet records and analog X-ray films can be placed in a freezer or a vendor can assist with clean-up. Dehumidifiers can also help in this process.

The practice should keep a log of all records that are destroyed (similar to planned record destruction). This log should include the following:

- Name
- Date of birth
- Social security number
- Dates of first and last visit
- General problems
- Procedures performed in the office
- Documentation of what was destroyed, how it was destroyed, and the date of destruction

The practice can reconstruct records by pulling together information from other available systems and files. The practice also should send notification letters to patients whose records were damaged to advise them of the situation. In the letters, enclose a health/dental history form and request that each patient complete the form to the best of their ability. A copy of the notification letter should be filed in the patient's reconstructed health/dental record.

Once each record is rebuilt, it should include clear documentation explaining that it was reconstructed. This documentation should include at least the following:

- The date the chart was reconstructed
- The reason for reconstruction
- Sources of information for reconstruction
- Efforts made to obtain other information (if applicable)
- A statement that, as a result of reconstruction, the information contained in the chart as of the reconstruction date is considered inexact

Medicare and other insurance carriers may expect to be notified that patient records have been lost. These organizations expect the healthcare provider to provide health record documentation to support patient claims. If a health record is destroyed, these organizations may want the practice to sign a form that attests to the unexpected loss of the health record.

For payment purposes, the Centers for Medicare & Medicaid Services (CMS) specifies these requirements for documentation in case of loss: (1) date, (2) information lost, and (3) event causing the loss, which must be specified in each health record. The provider also must have (1) a list of patient health records lost, (2) a description of the recovery efforts, and (3) the outcome from the efforts.

In cases in which the healthcare provider is unable to provide documentation because the needed health record was completely destroyed as a result of disaster, CMS will accept a Disaster Attestation Letter. If the health record is partially destroyed as a result of disaster, the healthcare provider should submit the portion of the health record that was not destroyed with a Disaster Attestation Letter.

Additionally, if CMS requests health records for any reason, the documentation of the recovery efforts and loss must be sent. Any practice subject to Comprehensive Error Rate Testing (CERT) or Payment Error Rate Measurement (PERM) review can request administrative relief through CMS.

Prevention

Addressing potential water damage might not seem like an urgent priority. However, without appropriate precautions, important records, analog X-ray films, and other materials might be compromised or destroyed.

To prevent water damage, consider whether the office is at risk of flooding. For example, the practice should ask a local emergency management agency if its office is located in a known floodplain or if it's subject to flooding from a nearby river, creek, lake, bay, or ocean. The Federal Emergency Management Agency as well as the practice's local municipality may have online maps that show areas of potential exposure.

Then the elevation of the office in relation to local rivers, creeks, bays, lakes, and the ocean should be determined. Further, it is appropriate to evaluate the practice's storage space at least twice a year, although a quarterly examination is more ideal. More frequent inspections are appropriate when weather is unusually harsh, no matter the season. Weather extremes expose the vulnerabilities of buildings much more quickly.

Routine prevention steps include storing records at the highest level possible inside the office and stacking records and analog X-ray films off the floor. Use shelving units if possible, and position them as high off the floor and mounted to the wall when possible. Keep in mind that storing records too high can pose potential injury concerns for staff members. Additionally, the practice might need a sturdy fiberglass step stool or step ladder for staff members to safely access these records.

Plastic tarps or plastic sheeting can be placed in rolls over the stored records and then unrolled when a storm approaches to protect against rain and roof damage. If damage does occur, plastic tarps or plastic sheeting (4–6 mm thick) should be heavy enough to hang while fans are being used to ventilate the space. Additionally, any paper should be removed from the lower drawers of desks and file cabinets and put in plastic bags or containers and placed on top of the units. If a severe storm is coming, retrieve any lower boxes from the basement.

Healthcare providers who maintain paper records also should consider storing copies of administrative records (financial, insurance, patient scheduling, patient lists) offsite in a secure

area. Additionally, practices may consider storing and maintaining surrogates or digital scans of X-ray films and paper records in a secure offsite location.

Healthcare practices also should have an emergency response plan that outlines the immediate actions to be taken if water damages paper records and/or analog X-ray films. (See a sample response plan in the appendix of this article).

Finally, the practice should develop a system of routine record destruction so that only the records necessary to keep are retained. This will limit the clutter in storage areas and reduce the number of records exposed to the risk of water damage. For more information and guidance, see MedPro's *Record Retention* guideline.

In Summary

Each office practice should (a) implement prevention strategies to safeguard health/dental records and analog X-ray films, (b) have an emergency response plan in case of water damage to records, (c) create a system of routine record destruction, and (d) consider document restoration as part of emergency preparedness and disaster planning. For additional helpful resources, visit the National Archives website for salvage procedures.

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Appendix. Sample Emergency Response Plan for Water Damaged Files

Before a water leak, flooding, or water damage occurs:

- Educate all providers and staff members about the emergency response plan and each component part.
- Install weather apps on your mobile phone to receive weather alerts and warnings.
- Identify the water line shut-off valves in your practice and their locations. Know before a water leak occurs which valves control what areas.
- Make sure everyone on your staff knows the locations of the water line shut-off valves. They also should know how to shut off valves. Some may be quarter-turn valves and some may be twist valves. To turn quarter-turn valves to the off position, move the handle perpendicular to the water line. To turn a twist valve off, turn the valve in a clockwise motion until it stops.
- Identify all emergency equipment (water vacuums and hoses, electric sump pumps, squeegees, brooms, fans and floor blowers, rolls of plastic, plastic garbage cans, a nonconductive fiberglass step ladder, and wet floor signs) and where these items are stored.
- Identify any floor drains that can be plugged, and have emergency drain plugs available onsite and easily accessible. Emergency drain plugs have a large rubber stopper that can be expanded by tightening the top nut attached to the plug. In addition to the emergency plugs, have several sets of heavy duty rubber gloves with extended cuffs and safety glasses available to protect against sewage water exposure.
- If the practice has automatic fire sprinklers, identify the sprinkler system zone shut-off valves and determine who is authorized to shut off the water flow. The local fire department probably mandates that it has responsibility to shut off the sprinkler system following a fire.
- Identify the electrical circuits within your practice so that if water is flowing onto electrical equipment it can be easily and quickly shut off. This should only be undertaken if it can be done safely.

- If you have racks of files or analog X-ray films, position plastic sheeting
- (4–6 mm thick) over the top of the racks (measure the length and sides to provide protection) that can be easily dropped down over the files to protect against water threats. Files also can be relocated out of the area by using a line of staff members or volunteers.
- Make sure all emergency response activities are undertaken with staff safety in mind.
- Have a list of emergency contacts (cellphone numbers, including a 24/7 plumbing service) available that is updated on a regular basis in case of a water emergency. In some areas, the local fire department can provide dewatering services and minor cleanup, and this should be investigated before an emergency occurs.

When you detect water damage or water damage is anticipated due to flooding or severe storms:

- Alert others to the incident or potential incident (internal announcement if applicable, or by text message or phone call).
- Call 911 if the local fire department can provide dewatering services or help stop a leak or divert water away from critical property.
- Shut off the flow of water if you can perform that task safely.
- If water is flowing into or over any electrical device or circuit, shut off the electric if it can be done safely by shutting off circuit breakers.
- Deploy plastic sheeting over racks that are being affected by water.
- Divert water with plastic rolls or use plastic trash cans to catch flowing water.
- Assemble staff and emergency equipment in the area of the emergency.
- Begin dewatering operations and alert your emergency plumber.