

Medicines in Museum Collections

Risks and Benefits

Medicines in museum collections understandably cause concern. Medicines may contain toxic substances like arsenic and mercury, or controlled substances like opium and cannabis. They potentially can damage skin and eyes on contact, harm internal organs if their vapors are inhaled, and explode. Moreover, because diluents tend to evaporate, the active ingredients in medicines become more potent over time and thus capable of causing greater harm.

Yet despite these risks, many museums recognize the importance of preserving medicines. They not only shed light on the history of medicine as a profession, but also on the material history of health and wellness. James Edmondson, Chief Curator of the Dittrick Medical History Center and Museum of Case Western Reserve University, explains why his museum has a policy to retain medicines: "It is our hope that some researcher somewhere will want to study them." This has recently been the case at the Henry Ford Museum, where a team of chemists analyzing patent medicines found them to be less harmful and more beneficial (containing potassium, calcium, and iron) than typically thought.

Evaluation

Careful evaluation of the medicines in a collection should be undertaken before a decision to retain or dispose of them is made. While wearing plastic gloves and a smock or lab coat, inspect all medicines for signs of chemical reaction, such as frothing or the formation of precipitate. This may indicate that the medicine is unstable and requires special attention.

It is imperative that an inventory be taken of all medicines and drugs in a museum collection. This inventory should include: the name of the substance, information on its label, type of container, condition of the container, and indications of instability. To supplement the information from labels (and to help identify a medicine without a label), research the substances in the latest edition of *The Merck Manual* or Robert E. Gosselin's *Clinical Toxicology of Commercial Products* (1984). For early medicines, it may be necessary to consult old pharmacopeias and medical dictionaries. Local retired pharmacists may be able to help as well. If an unknown medicine is significant enough to warrant the cost, look into having it professionally analyzed by a laboratory.

The National Park Service recommends using the inventory to divide medicines into four categories: 1) over-the-counter preparations that are non-toxic and are not controlled substances; 2) non-controlled drugs that would require a physician's prescription today; 3) controlled substances as defined by the Controlled Substances Act (1970); and 4) medicines that may pose a hazard because of their instability or level of deterioration. Medicines in the latter two categories are candidates for deaccessioning, as are any medicines that cannot be identified.

Notify authorities if you discover controlled substances in your collection, and follow their instructions regarding the proper disposal of the medicines. Alternatively, it may be possible to secure permission to keep the now-illegal medicines. However, before you pursue this option, thoroughly contemplate the liability retaining such medicines would pose to your museum.

Disposal

Under most circumstances, a museum should dispose of medicines that are defined as controlled substances, medicines that cannot be stabilized (as determined by a conservator), and medicines that are dangerously corrosive or explosive.

Never wash a medicine down the sink or throw it in the trash. To dispose of a controlled substance, contact local authorities or the Drug Enforcement Administration (DEA) for assistance. Otherwise, call your local waste authority or a waste specialist company. Request that the medicine's original container be returned to you. Be sure that it has been washed thoroughly before placing it back in your collection. This may require the help of a conservator.

Additionally, some recommend keeping a sample of disposed medicines. However, as Ramunas Kondratas, former curator of the medical collection at the National Museum of American History, points out, often there is no need to retain a sample. Many of the most hazardous substances, like sulfuric acid, are very common and easily synthesized.

Caring for Medicines

Medicines that are retained in the collection should be regularly inspected for evidence of instability. Safety policies pertaining specifically to the medicine collection should be devised. These policies should detail how the medicines are to be handled, labeled, stored, and displayed. Staff, for example, should be required to wear gloves while handling medicine collections, and to wash their hands after handling. Hazardous medicines should be clearly labeled. Proper handling procedures should be present on all paper and/or electronic records.

Storage

Controlled and toxic substances should be kept in a locked cabinet or drug safe. Medicines should be stored upright in archival boxes with padding between them. Consider placing each medicine bottle in a polyethylene bag in case of leakage. The ideal environment for storing medicines is darkness, a temperature of 18° C or lower, and a relative humidity of 50% to 60%.

Display

Medicines on exhibit should be displayed in properly secured cases. Neil Cockerline, Director of Preservation Services and Conservator at the Midwest Art Conservation Center, recalls coming across a bottle of strychnine in an open medicine cabinet inside a small house museum. Such situations must be avoided. You may even want to go as far as alarming medicines on display or patrolling the exhibit space, depending on the substance.

Research

If you expect your medical collection will be of interest to researchers, you will want to develop procedures to allow researchers to safely access your collection. All researchers should be trained on proper handling techniques. If you find that researchers are frequently requesting to see the collection, you may want to consider measures to reduce handling of the artifacts. Curators of the University of Western Ontario Medical Artifact Collection, for example, have photographed all of the medicines in the collection, and made those photographs available online.

Sources

- Cockerline, Neil. "Handling and Exhibiting of Potentially Hazardous Artifacts in Museum Collections." Webinar, Connecting to Collections Care, September 21, 2011.
<http://www.connectingtocollections.org/community-webinar-dangerous-collections/>
- Cockerline, Neil, and Melinda Markell. "The Handling and Exhibiting of Potentially Hazardous Artifacts in Museum Collections." *AASLH Technical Leaflet*, no. 248 (2009).
<http://www.connectingtocollections.org/community-webinar-dangerous-collections/>
- Diefenbach, Andrew, et. al. "Examination of a Selection of Patent Medicines and Nostrums at the Henry Ford Museum via Energy Dispersive X-ray Fluorescence Spectrometry." In *Chemistry of Food, Food Supplements, and Food Contact Materials*, edited by Mark A. Benvenuto, et. al., 87-97. Washington, DC: American Chemical Society, 2014.
<http://pubs.acs.org/doi/abs/10.1021/bk-2014-1159.ch007>
- Hamilton, Michelle A., and Shelley McKellar. "Learning through Objects: Development of the UWO Medical Artifact Collection as a Teaching and Research Resource." *Canadian Bulletin of Medical History* 23 (2006): 219-43.
<http://instruct.uwo.ca/history/493/research/CBMH%20Learning%20through%20Objects.pdf>
- Kondratas, Ramunas. "The Preservation and Disposition of Hazardous Substances and Controlled Drugs in Museum Collections." *Caduceus* 7, no. 2 (1991): 55-62.
<https://archive.org/stream/caduceusmuse721991unse#page/54/mode/2up>
- Museum of the Royal Pharmaceutical Society. "Historical Pharmacy Collections: Care and Safety Issues." <http://www.rpharms.com/museum-pdfs/health-and-safety.pdf>
- National Park Service. "Curatorial Health and Safety." In *Museum Handbook, Part 1: Museum Collections*. <http://www.nps.gov/museum/publications/MHi/CHAP11.pdf>
- . "Hazardous Materials In Your Collection." *Conserve O Gram* 2/10 (August 1998).
<http://www.nps.gov/museum/publications/conserveogram/02-10.pdf>