Personal protective equipment.

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Biosafety, Preventive Conservation and Risk Management for the Preservation of Heritage and Health Protection of the Professionals Who Work in It

Thayane Vicente Vam de Berg*

*Universidade Federal do Estado do Rio de Janeiro (UNIRIO)

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Abstract
It is well known that the professional categories of archivists, museologists, librarians and conservators-restorers are exposed daily in the exercise of their work activities to various risks caused by biological agents. For this reason, it is indispensable and necessary to incorporate scientific practices in the areas of preventive conservation and biosafety, as a way to avoid irreparable damage to the health of professionals, particularly at this time, due to the aggressiveness of virus SARS-CoV-2, which shows even more the vulnerability to which they are exposed. This article aims to inform, guide, stimulate and sensitize professionals working in archives, libraries, museums and documentation centers about the application of the best procedures from preventive conservation, risk management and biosafety to protect their health and preservation of documents. To this end, a research based on a bibliographic survey on the topics previously mentioned and virus SARS-CoV-2 was carried out, associating them with the objective of improving documentary safeguard actions.

Keywords
Biosafety; preventive conservation; risk management; virus SARS-CoV-2.

Resumen
Es sabido que las categorías profesionales de archiveros, museólogos, bibliotecarios y conservadores-restauradores están expuestos diariamente en el ejercicio de sus actividades laborales a diversos riesgos causados por agentes biológicos. Por esta razón, es indispensable y necesario incorporar prácticas científicas en las áreas de conservación preventiva y bioseguridad, como una forma de evitar daños irreparables a la salud de los profesionales, particularmente en este momento, debido a la agresividad de virus SARS-CoV-2, que muestra aún más la vulnerabilidad a la que están expuestos. Este artículo tiene como objetivo informar, guiar, estimular y sensibilizar a los profesionales que trabajan en archivos, bibliotecas, museos y centros de documentación sobre la aplicación de los mejores procedimientos de conservación preventiva, gestión de riesgos y bioseguridad para la protección de su salud y preservación de documentos. Con este fin, se realizó una investigación basada en una recopilación bibliográfica sobre los temas mencionados anteriormente y virus SARS-CoV-2, asociándolos con el objetivo de mejorar las acciones de salvaguarda documentales.

Palabras clave
Bioseguridad; conservación preventiva; gestión de riesgos; virus SARS-CoV-2.

Insalubrity and presence of biological agents in document storage environments

The collections kept in archival, bibliographic and museological institutions have a wide variety of supports, and in general there is the presence of organic materials in their composition, which are a source of nutrients for biological agents. In other words, in the collections custody environments,[1] there has always been a risk to the health of the professional who deals with the documentary heritage, due primarily to the presence of these biological agents, among which the following stand out: microorganisms (fungi, bacteria, viruses); insects (cockroaches, moths, borers, termites, lice); rodents.

This situation in several institutions responsible for custody of documents is being widely perceived and discussed, due to the emergence of yet another biological risk factor: virus SARS-CoV-2, which is aggravated by the fact that it is a virus with a very high lethality rate and can persist for days on the most varied types of documentary support[2] (Van Doremalen, 2020; Kampf *et al.*, 2020; REALM Project, 2020).

Laboratory research shows the persistence of the SARS-CoV-2 virus on the surface of the paper for up to six days (REALM Project, 2020), and on other materials for up to nine days (Kampf et al., 2020), but it is known that "the virus permanence depends on environmental conditions temperature, humidity and lighting. For this reason, their behavior abroad may be very different from that produced in the laboratory" (Sánchez, 2020).

REFERENCE SOURCE	Virus SARS-CoV-2 PERSISTENCE TIME ON SURFACES							
	Steel	Plastic	Paper	Metal	Aerosols	Glass	Ceramics	Wood
Van Doremalen *et al*, 2020[3]	3 days	3 days	1 a 3 days	X	3h	X	X	X
Kampf, G. *et al*, 2020	4 days	9 days	4 a 5 days	5 days	X	5 days	5 days	4 days
REALM Project, 2020[4]	X	6 days*	6 days*	X	X	X	X	X

Table 1. Virus SARS-CoV-2 persistence time on surfaces. *Elaborated by the author based on research by Van Doremalen (2020), Kampf et al. (2020) and REALM Project (2020).*

Although transmission by surfaces is considered to be potentially less than transmission by droplets or aerosols, and levels of virus SARS-CoV-2 vary according to the temperature, humidity and light of the environment, in general, research recommends the constant disinfection of surfaces, and draw attention to the probability of the virus spreading through contaminated surfaces or materials (Riddell *et al.*, 2020).

[1] Associated with these attacks caused by biological agents, and enhancing the damage caused to documents and the health of those who manipulate them, other extrinsic factors that intensify the unhealthiness in the work environment and cause deterioration in documentary heritage can also be inserted, such as: environmental pollution (chemical agents) and variations in temperature, relative humidity and luminosity (environmental/physical agents), which cause climatic uncontrolling in the document storage environment, and also damage caused by human beings, like improper handling (human agent).

[2] Although the virus SARS-CoV-2 has the ability to persist in the supports, so far there is no evidence that the coronavirus causes damage to documents, however, as contaminated surfaces or materials can contribute to its dissemination, it is important to call attention to the adoption of measures and changes in human behavior to avoid contamination of people, as the damage to health can be significant, even leading to death (See Vam De Berg, 2020a and 2020b).

[3] In this experiment "the viruses were applied to copper, cardboard, stainless steel and plastic, kept at 21 to 23 °C and with a relative humidity of 40 % for 7 days" (Van Doremalen *et al.*, 2020) . The viral load decreases over time.

[4] Results of test 4 of the REALM Project. The research of the REALM Project aims to investigate the persistence time of the SARS-CoV-2 virus in materials found in archives, museums and libraries. The tests were performed on papers of various types and plastics (polyester, polypropylene, polyethylene). The materials were "maintained at standard room temperature (68 °F to 75 °F) and relative humidity conditions (30 to 50 percent)". Available in: <https://www.webjunction.org/news/webjunction/test4-results.html> [accessed on 7 September 2020].

Thus it is evident that it is necessary to reflect on biosafety, preventive conservation and risk management in the institutions that deal with documentary heritage. The pandemic caused paradigm changes not only in social dynamics, but also in the work environment, showing that it is necessary to evaluate systems, routines, adapt protocols and learn lessons from the experienced situation, in order to convert a problematic situation into an opportunity for improvement and transformation positive (UNESCO, 2020). Therefore, it is necessary to combine existing and developed knowledge on the aspects of preventive conservation, risk management, biosafety, recent discoveries and best practices in combating the virus and all other problems that already exist in collections custody environments.

Preventive conservation and risk management for document preservation

Among the main pathogenicities[5] triggered by the handling of documents and affecting the health of archivist workers, museologists, librarians and conservators-restorers, we can highlight: respiratory, ophthalmic and skin diseases caused by fungi, bacteria, viruses, dust, such as rhinitis, dermatitis (skin allergies), allergic conjunctivitis, fungus on nails or skin, allergic cough, hives, among many others.

In addition to the diseases caused in humans, there are several types of deterioration caused in the collections, and among the main bacteria and fungi found in archival and bibliographic institutions we can highlight the following:

	Type of deterioration				
Bacterium	**Support degradation**	**Stains**	**Acidification**	**Deterioration of fibers**	**Discoloration**
Acinetobacter	X				
Bacillus		X	X	X	
Cellvibrio			X		X
Lactobacillus			X		
Micrococcus			X		X
Pseudomona		X	X		X
Streptococcus	X		X		
Staphylococcus	X		X		
Fungi					
Alternaria	X	X			
Aspergillus	X	X	X		
Chaetomium		X	X		
Cladosporium		X	X		X
Fusarium		X		X	X
Mucor		X	X		
Penicillium	X	X	X		
Rhizopus		X	X		
Sporotrichum		X			
Trichoderma		X		X	
Verticillium		X		X	

Table 2. Main contaminating bacteria and fungi present in the archive and library environments. *Elaborated by the author and based on the research by Vaillant, 2013: 48.*

[5] "Pathogenicity is the potential capacity of certain species of microorganisms and other types of biological contaminants to cause an infectious process" (Vaillant Callol, 2013: 75, *apud* Piatkin, Krivosheim, 1968).

From the research carried out by Vaillant (2013: 48), it can be seen that professionals who deal with documentary heritage are susceptible to having contact with an immense variety of pathogens that in addition to deteriorating[6] documentation can cause damage to health of who manipulates them. For this reason, actions aimed at safeguarding documents must be understood as an intertwined set, in which one action depends on the performance of another so that the whole is benefited. Thus, one of the solutions is to adopt the precepts of risk management in collections.

"Risk can be defined as the chance that something will occur causing a negative impact on our objectives. Whenever we think about risk, we have to take into account both its chance of occurring and its expected impact" (ICCROM y CCI, 2016: 11).[7] Another key understanding about risk management is that there are several layers that act as wrappings, that is, to think of the initial layer that adequately protects and conditions each support, up to the subsequent levels, which are: the furniture, the storage space, custody, the institution and its surroundings (location), as all these levels can and should act as barriers to protect the collection (ICCROM y CCI, 2016).

In addition, the collection may be exposed to risks considered rare, common or cumulative, and is the incidence of these that degrade the heritage. The situation experienced because of the pandemic forced the institutions to close suddenly, and in this way, contact with the documentation was paralyzed and the storage areas closed for a long period. In institutions where preservation conditions are controlled in person, this inspection has been compromised, which can trigger "gradual and cumulative processes of chemical, physical or biological degradation" (ICCROM y CCI, 2016: 12). Analyzing the situation from the point of view of risk management, it can be classified as a rare event, but the consequences of the sudden closure of the institutions and the paralysis of actions control of the preservation conditions of the collection were compromised, and it will be with the reopening (gradual, safe and with well-defined protocols) of these spaces that it will be possible to measure the magnitude of the risks that affected the documentation.[8]

Thus, in addition to the risk management in collections, which aims to reflect on the protection of assets from the macro to the micro level, the practices arising from preventive conservation must also be adopted, so that in fact the preservation of the collection is carried.

Preventive conservation aims, since the adoption of preventive measures, to avoid restoration procedures and to safeguard the materials in the best possible conditions, mitigating the damages, promoting actions that stabilize and delay the degradation process. Thus, some of the actions that can be implemented to protect the collection are:

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[6] This deterioration of documentary heritage, in part arises because of intrinsic factors, that when associated with extrinsic factors, in particular the temperature and relative humidity of the air, they attract biological agents, which can proliferate and trigger infestation processes in the collections, which in more serious situations cause their destruction very quickly. Such a situation, when it is not interrupted, becomes a dangerous cycle that triggers problems in the collection and in the health of workers.

[7] In the case of equity safeguard institutions, ten risks were identified main ones are: physical strength, dissociation, inadequate relative humidity and temperature, luminosity (UV light), pollutants, pests, water, fire, criminals (for example, theft) (ICCROM y CCI, 2016).

[8] These risks must be identified, analyzed, evaluated, treated and monitored. Its magnitude and priority level must be taken into account to define the sequence of action in each situation, identifying the most susceptible damages, those that already exist and those that are likely to occur. "It is important to remember that risk management is an ongoing process. We must continue to monitor the risks and adjust the treatment actions and measures adopted as necessary to ensure that the negative impacts on our objectives are effectively minimized in the short, medium and long term" (ICCROM y CCI, 2016: 16).

a) Monitoring, cleaning and disinfecting environments and equipment. This includes actions such as:

1. Use sterilizers or air purifiers in the environment, to eliminate or attenuate impurities and microorganisms suspended in the air. The use of such equipment in closed environments is essential to reduce the incidence of virus particles.
2. Carry out constant inspection or inspection in the documentation storage area and in the common work areas, regarding the presence of pollution, microorganisms, insects and rodents, so that there is environmental monitoring and effective control of the stability and preservation of documents. In the case of documents with signs of infestation, they must be isolated from the rest of the documentation to receive proper treatment.
3. Perform periodic pest control (preferably, at least twice a year) for extermination and control. Insects are also vectors and transmitters of diseases, in the case of cockroaches, for example, they potentiate allergic reactions. In addition to observing the reproduction periods of insects.
4. Routinely clean furniture.
5. Carry out routine cleaning procedures for environments and use products with scientific evidence of disinfectants against bacteria, viruses and fungi, observing the benefits and risks in the use of each product.[9] It is also noteworthy that the documents should not be submitted to disinfection for the disposal of the SARS-CoV-2 virus, because so far, all products that eliminate it, may cause damage to the collection, for this reason the institutions have adopted the establishment quarantine period of documentation. Some products used to disinfect the environment are: 70 % ethyl alcohol and bleach.
6. After cleaning the rooms, ensure that ventilation occurs to evaporate the substances used. "This operation will be carried out mainly for the safety and health of workers, but also for the correct conservation of cultural heritage, since the accumulation of VOCs in closed spaces results in damage" (Instituto del Patrimonio Cultural de España, 2020: 05).
7. Do not sweep surfaces in order to avoid the dispersion of microorganisms by dust particles. When necessary, use the wet sweeping technique (with the cloth very well wrung, to avoid the maximum increase in the relative humidity of the air in the place). The floor must be cleaned with disinfectant products, in the appropriate proportions, so as not to cause damage to people's health and documents.
8. Clean the air conditioning filters regularly.
9. Establish checklist and cleaning schedules, with fixed dates and times, to ensure an effective frequency of disinfecting surfaces, objects and environments.

[9] A recent discovery made by researchers at the Federal University of Minas de Gerais (UFMG) can revolutionize and have an immense impact in combating coronavirus and other viruses, fungi and bacteria. It is the use of niobium as a substance capable of disinfecting surfaces and providing greater protection for people for a period of up to 24 hours. Although this substance cannot be applied directly to documents, its potential use for cleaning and disinfecting environments, equipment and application to human skin presents itself as a possible alternative in protecting health (UFMG, 2020). This discovery in the area of chemistry and nanotechnology seems to be promising, but it still needs to be analyzed and deepened in order to verify the possibilities of use or not in archives, museums and libraries.

10. Maintain contact and dialogue with the cleaning team.

- The actions of cleaning professionals are extremely relevant to ensure the healthiness of the environments.
- The cleaning team must be trained with courses and lectures to carry out specific activities in the areas of custody of the collection.
- The professionals responsible for cleaning can detect and communicate to those responsible for the documentation about traces of infestation, infiltrations and leaks in the storage area of the collection.
- Preferably try to maintain as responsible for the cleaning of the guard areas, the same cleaning staff, as this will provide a highly trained team to carry out this specific activity.

11. Establish and adopt protocols/standards[10] cleaning for storage areas of documentation that meet the criteria of preservation of collections, such as:

- Never water directly floor in the storage area.
- Standardize the cleaning sequence in the environments (define which side and area to start, in order to avoid forgetfulness).
- Do not use substances that emit gases or vapors that are harmful to the documents and the health of professionals. If its use is essential, ensure that ventilation will be carried out for its dispersion, as well as taking all due care.
- Do not leave damp cloths or buckets with liquids inside the storage areas.
- Communicate and guide the team responsible for cleaning up the existence of such rules.

Routine cleaning of the work environment reduces the potential risks of contamination and spread of various pathogens, including the coronavirus (virus SARS-CoV-2).

Still with regard to monitoring and cleaning, it is worth noting that, regardless of the cleaning service, professionals can perform the disinfection of the equipment and materials they use (ICOM, 2020). And, due to the virus SARS-CoV-2 risk, it is essential to constantly maintain the cleanliness of the environments and regular disinfection (preferably daily) of surfaces that are constantly touched and tend to be potentially contaminated, such as: door handles, handrails, telephones, keyboards, mouse, light and air switches, backrests, benches, and other objects and equipment for routine use or contact. In this procedure, clean cloths with disinfectant products should always be used.

b) Packaging and storage of documentation. Diagnose and evaluate the best materials for packaging also taking into account the period of persistence of virus SARS-CoV-2 in these wrappings.

[10] It is valid to consult technical regulations issued by the health or hospital area and to adapt them to the specificities of the collections custody environments.

c) Organization of documentation, with the application of document management in the collection, this includes correct use of the instruments for managing and researching the collection, such as: the tables of temporality and classification of documents; inventories; catalogs; etcetera.

d) Quarantine of documents:

1. The collected documents must not be placed of immediately in the storage area, where other sanitized documents are already present. It is recommended that those be placed in another space, preferably aimed at preventive conservation, in which the material will be quarantined for later cleaning;
2. The quarantine period for documents should be defined and updated, based on the monitoring of the most recent scientific discoveries, to check the possibility of increasing or decreasing the period established by the area responsible for the collection.[11] The establishment of a deadline aims to ensure that the material is no longer contaminated with virus SARS-CoV-2, at the time of further handling;
3. The quarantine stage aims to avoid contamination of documents that are already treated in the storage area, since there may be infestation of insects or microorganisms (fungi, bacteria, viruses) in the transferred or collected documentation. As well as protecting the health of professionals and researchers from possible microorganisms, such as the coronavirus (virus SARS-CoV-2).
4. The packaging of the collected documents must be identified with a label informing the date of beginning and ending of the quarantine (Barreto *et al.*, 2020).
5. In case of request for access to the document, the quarantine situation must be informed to the researcher or user. If it is not possible to make the source available digitally, the individual must be offered all personal protective equipment, and the use of these must be mandatory.
6. The sanitizing table, the surfaces of equipment and other instruments used must be cleaned with 70% alcohol (Barreto *et al.*, 2020).

Cleaning is essential to increase the life of the document. This action decreases and stops the infestation by rodents, insects, fungi, viruses, and prevents the accumulation of dust. It is not recommended to disinfect documents, as chemicals can cause irreversible damage. Therefore, the ideal is to quarantine documents.

The adoption of preventive conservation practices, while promoting the safeguarding of documentation, also prevents damage to the health of people who have contact with such documents.

[11] The deadline for quarantining paper documents in some institutions was: nine days - Facultad de Información y Comunicación, Universidad de La República Uruguay (Barreto *et al.*, 2020); Archivo General de La Nación, Peru (2020/4); 14 days - National Library of Spain (Hernampérez, 2020).

All of these measures aim to: avoid the proliferation of biological agents that cause damage, both to documents and to the health of professionals; ensure greater durability of documents; and ensure the citizen's to access information, as only with the correct preservation of documents that this right is guaranteed. In addition, is the preventive actions that safeguard and enable this documentation to be preserved and accessed in the future.

It is perceived that the association between management of risks in collections and the realization of preventive conservation practices is essential, since the combination of these bring numerous benefits to the protection of historical, artistic and cultural heritage.[12]

Biosafety to protect the health of professional archivists, librarians, museologists and conservators-restorers

The topic of biosafety[13] has been widely discussed and renewed in the area of health since the 1970s. Most publications on the subject are normative or manuals aimed at health professionals and address issues such as: the risk classification of biological agents; waste management; and measures adopted to protect the health and safety of workers, ranging from the adoption of good practices to the organization of the environment, for example: hand hygiene, use of personal protective equipment, disinfection of the environment and objects, prevent, minimize or eliminate risks.

This is an extremely important issue that should be addressed in greater depth not only by health professionals, but also by other professionals, such as archivists, librarians, museologists and restorative-conservators, since they also deal with materials that can be attacked by biological agents that damage the health of those who handle them.

Due to the fact that there is already an in-depth discussion, even if guided by fundamentals for another area, it is possible to incorporate and readjust it to the reality of other fields of knowledge by making the necessary appropriations and considerations, but already thinking about producing specific norms for the reality of professionals who safeguard documentary heritage. Due to the possibility of seriously affecting the health of those who have direct contact with these microorganisms, it is essential that professionals adopt biosafety actions and standards in the work environment. Being extremely important and indispensable the use of personal protective equipment (PPE's) for the protection of the health of the professional who deals with the documentation, which are: caps; gloves (preferably nitrile[14]); mask (N95); glasses (preferably with a peripheral seal); lab coat (preferably long-sleeved); face shield (face shield type); closed footwear. When using personal protective equipment, the professional must be aware that from that moment on, he must not touch the mask, face or any other part of the body.

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[12] Other issues that also need to be considered together for the protection and preservation of documentation are: making users aware and this can be done with heritage education actions so that people realize the importance of safeguarding documentary heritage; offer courses, workshops, exhibitions; to constantly train professionals working in these spaces so that they are always informed of the best practices and scientific discoveries that assist in preventive conservation; Promote interdisciplinarity with other areas of knowledge, such as chemistry, for example, as it helps in understanding the chemical composition of materials; develop risk control and safeguard plans in emergency situations.

[13] Biosafety is in its broad concept: "the set of knowledge aimed at prevention, minimization or elimination of risks inherent to research, production, teaching, technological development and service provision activities, which can compromise the health of men, animals, plants and the environment or the quality of the work developed" (FIOCRUZ, 2005:11).

[14] The nitrile glove has three layers of protection.

The use and removal of such equipment must be correct, the gloves, for example, must follow the following sequence: *1)* keep your hands clean when putting on the gloves; *2)* at the time of removal, remove the first glove with your dominant hand, pulling it externally by the wrist and turning it inside out. With the help of the glove removed from the first hand, pull the glove of the other hand also by the wrist, turning it inside out; *3)* wash your hands after removing the gloves.

For the use and removal of the mask correctly, you must have clean hands to put or remove the elastic attached to the ear or head. Furthermore, the face of the mask should never be touched. To prevent fogging of goggles it is necessary to wash them with detergent or glycerin soap; as well as adjusting the nasal clip. If this does not solve the problem, an alternative is to paste the mask with a micropore tape, on the nose area.

After use, disposable PPE's should not be reused, but disposed of in the trash. And preferably spraying chlorine or alcohol 70% on the discarded PPE's, to avoid contamination of the cleaning team, at the time of removing the garbage. Non-disposable PPE, on the other hand, must not be reused before the correct disinfection, which can be carried out with water and neutral detergent or disinfectant substance that does not damage the equipment and does not cause contact dermatitis.

Such standards and guidelines are important because the incorrect use of PPE's can cause contamination of other surfaces or people.

Adoption of new practices to minimize the impacts and risks of virus SARS-CoV-2 contamination by professionals working in document protection institutions

According to a survey conducted by ICOM (2020), 94.7 % of museums in the world stopped their activities because of the pandemic. Given this scenario, it is necessary to reflect on: what are the impacts of the pandemic on the collections with the sudden closure of institutions? How can we continue to develop the social function of heritage institutions in the face of this new difficulty? How safeguard citizens' right to access information, the transparency of public acts, the production of knowledge, memory and history? How to face and manage the collections in times of pandemic? How to control, minimize and stop the forms of virus infection? How to protect professionals working in heritage institutions?

Faced with these questions, some alternatives and discoveries are emerging and prepare us to face the situation that imposed itself, such as: following World Health Organization (WHO) recommendations; identify the best practices carried out in heritage institutions; analyze the wide range of knowledge generated by the most diverse areas of knowledge and, when possible, apply them in our area; develop protocols and procedures in the face of new challenges; when it is possible to offer and prioritize remote service (online); reflect on changes in architecture or design of spaces (Isometric Studio, 2020) and furniture layout, in order to allow greater air circulation and avoid close contact between people.

Even with the emergence of a vaccine and the expected eradication of the virus SARS-CoV-2, some of the measures implemented in its fight can be thought of as something to be definitively inserted into the daily life of heritage institutions, in particular the knowledge of biosafety. This associated with preventive conservation and risk management can provide greater security for collections and professional archivists, museologists, librarians and conservators-restorers. This

critical moment of the world pandemic, show the risks to which these categories have always been exposed, due to direct contact with documents that may contain the presence of microorganisms (biological or pathogenic agents) in their supports that potentiate and activate the risks of respiratory, ophthalmic and skin diseases caused by fungi, bacteria, viruses, dust residues and insect droppings. This situation reveals and reinforces the importance of understanding, adopting and implementing such health and safety care in the performance of work activities.

From what has been exposed, it is possible to infer that the emergence of virus SARS-CoV-2 only evidenced an existing danger, thus drawing greater attention from professionals to the issue of good work practices, and the need to comply with criteria and requirements that minimize risks and enable health protection. It is based on this concern that the themes of preventive conservation, risk management and biosafety have been debated.

The adoption of individual health-related measures, in addition to protecting the individual himself, also has a direct impact on respect and care for other employees in the workplace, so while the virus SARS-CoV-2pandemic lasts, the recommendations of the World Health Organization in relation to social distance and individual and collective protection must be followed (WHO, 2020). Virus SARS-CoV-2 can be transmitted through secretions such as: saliva droplets; sneeze; cough, or touch and contact with contaminated surfaces or objects (WHO, 2020). For this reason, it is necessary practical actions and basic hygiene measures can save lives and prevent the spread of the coronavirus, such as: cleaning your hands; use of respiratory cough and sneeze etiquette; social isolation; and use of masks in environments; don't touch the face before cleaning yours hands.

Thinking about the protection of the professional who works in the preservation of the collection, some recommendations should be incorporated into daily work, such as:

1. During working hours, when using the documentation, the handling must be with clean hands or gloves;
2. Place basins or rugs with 70 % chlorine or alcohol at the entrance to the sectors to disinfect the shoes before entering the work environment.
3. Provide 70 % alcohol for hand disinfection next to the entrance door.
4. Always keep your hands clean and, when necessary, wear gloves.
5. Do not share personal items, such as pens, pencils, glasses, etcetera.
6. Keep areas ventilated.
7. Although some research on the propagation of virus SARS-CoV-2 recommends keeping the windows open, one should be aware that in those environments, this action may cause other types of damage to the documentation, such as: insect infestation, accumulation of residues dust and increased relative humidity and temperature. However, if you decide to keep the windows open, one option is to seal them with the installation of mosquito nets or TNT (non-woven fabric), which must be inspected and changed periodically.
8. Develop cleaning/disinfection protocols; inspection; risk management; borrowing documents; among others.

It should be noted that, according to the WHO (2020), social isolation measures are still recognized as the most effective way to combat the spread of the pandemic. Thus, it is necessary to raise awareness about the importance of adopting measures that do not spread the coronavirus (SARS-CoV-2 virus), minimize daily risks and promote quality of health and well-being.

Partial considerations

The pandemic scenario caused by virus SARS-CoV-2 highlights the need for institutions to have collections risk management plans, so that in emergency situations, the professionals responsible for the collections know how to act and what measures to take to avoid irreversible damage. Possibly, the situation experienced with the pandemic and the closure of institutions for such a long period was not thinked in most equity risk management guides, and this imposes the need to update these publications, with the identification of other problems beyond those that already existed. It is clear that is a need to reflect on issues such as: maintaining cleanliness in guard areas; the need to establish greater control over cleaning and disinfection protocols; ways to minimize the biological risks in the guard areas that do not have climate control; how to guarantee the security of collections; etcetera.

From what has been exposed, it is understood that biosafety, preventive conservation and risk management are key parts for the protection of collections and the people who manipulate them. Thus, related to biosafety are individual care that has an impact on the collective, such as wearing a mask, breathing etiquette, hand hygiene and cleaning environment; and related to preventive conservation and risk management, actions that focus on the macro and micro levels that guarantee the stability of the collections.

It is also worth noting that the virus SARS-CoV-2 pandemic impacts the analysis of risk management for assets, a topic that is deeply relevant in this discussion. Therefore, the previously highlighted areas of knowledge will need, to a certain extent, review their literature and offer new answers and alternatives, which, while guaranteeing document preservation, may also reduce the magnitude of the risks of transmission of this virus in the collections custody environments. As an example, some of the subjects that can be discussed and studied are: climate control in the areas where collections are kept;[15] packaging materials;[16] conservation treatments;[17] chemical substances effective against the coronavirus, but inert to the materials/supports;[18] biosafety and health;[19] alternatives to avoid the loss and access to information and knowledge;[20]among others. In this sense, research and the establishment of interdisciplinary partnerships with other areas of knowledge are essential. It is necessary to "transform the threat of virus SARS-CoV-2 into an opportunity for greater support for documentary heritage" (UNESCO, 2020) and also to reflect, encourage research and realize that it is vital to establish norms that highlight the importance of the issue related to care with the safety and health of professionals.

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[15] It is essential to find alternatives that solve the issue of circulation of ventilation to prevent the spread of the coronavirus in collections.

[16] Diagnose and evaluate the best materials for packaging also taking into account the period of persistence of COVID-19 in these envelopes.

[17] Adoption or renewal of conservation practices that corroborate or generate new knowledge.

[18] Need to get closer to other scientific areas, such as Chemistry, Biology.

[19] Mandatory use of existing personal protective equipment, as well as research and adoption of new PPE's that have scientifically proven protection capabilities.

[20] Ensure that citizens have access to the memory, history and transparency of information.

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