CLINICAL RESEARCH - USE OF DRY ICE

PROCEDURE ©

DOCUMENT SUMMARY/KEY POINTS

- The purpose of this procedure is to ensure the safe use of dry ice by clinical research personnel.
- The procedure must be followed by all personnel using dry ice for clinical research.

CHANGE SUMMARY

- Not applicable – New Sydney Children's Hospitals Network Procedure.

READ ACKNOWLEDGEMENT

- Training/Assessment Required – Personnel using dry ice for clinical research.

This document reflects what is currently regarded as safe practice. However, as in any clinical situation, there may be factors which cannot be covered by a single set of guidelines. This document does not replace the need for the application of clinical judgement to each individual presentation.

Approved by:	SCHN Policy, Procedure and Guideline Committee	
Date Effective:	1st March 2019	**Review Period**: 3 years
Team Leader:	Clinical Trials Program Manager	**Area/Dept**: Kids Research Institute

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Purpose/Scope

The purpose of this procedure is to ensure the safe use of dry ice by clinical research personnel.

The procedure must be followed by all personnel involved in the conduct of clinical research involving the use of dry ice.

Background

Dry ice is the solid version of carbon dioxide. It has a temperature of -78.5^{o} C and unlike wet (water) ice; it does not melt, but reverts to a gas releasing carbon dioxide vapour via sublimation. Dry ice is commonly used as a cooling agent for preserving bio specimens intended for use as part of clinical research during transfer.

SCHN has supplies of dry ice available in various locations for clinical research use, including in the Clinical Research Centre, Kid's Research.

Equipment and Supplies

- Dry Ice
- Insulated Gloves
- Goggles
- Lab coat or gown
- Scoop
- Transfer Container e.g. Styrofoam esky

Procedure

Incorrect handling of dry ice can pose a risk to the user and others through the potential for the extreme cold to cause cold burns/frost bite and for outgassing to cause hypercapnia (abnormally elevated carbon dioxide levels in the blood) due to inappropriate ventilation in storage locations.

All clinical research personnel are required to receive training/assessment prior to any use of dry ice, documented in accordance with SCHN Procedure –Clinical Research - Personnel Qualifications and Training Records [DRAFT]. Safe Work Practice(s) are posted in the area(s) where dry ice is located for easy-reference by users.

Clinical research personnel may require additional certification and/or training to transport dangerous materials via air transportation in accordance with the IATA Dangerous Goods Regulations (DGR).

Use of Dry Ice

- Don PPE including lab coat or gown, insulating gloves, goggles and enclosed footwear;
- Access and review the applicable SDS, noting any precautions;
- **Note:** Dry ice must be stored and handled in well-ventilated area(s) at all times;
- Ensure that an insulated container is used to avoid risk of evaporation.
- **Note:** Dry ice must not be stored in a completely airtight container, as this could cause the container to expand or explode during outgassing. All transfer/storage containers should be vented periodically to avoid carbon dioxide build up.
- Open the lid of the dry ice storage vessel and use the scoop provided to collect the volume of dry ice required;
- Return the scoop and ensure the lid of the dry ice storage vessel is closed;
- **Note:** Any unused or excess dry ice can be decanted back into the dry ice storage vessel; Dry ice must not be disposed of in a sink, toilet or other drain/waste receptacle.
- Complete the Log located next to dry ice vessel with the details of your usage (if required);
- Discard any waste in the appropriate waste receptacle(s) (if applicable);
- Ensure that any transfer container(s) containing dry ice are packaged appropriately and collected in a timely manner (as applicable);
- **Note:** Transfer containers containing dry ice must not be stored in refrigerators and/or freezers at any time.
- The user is responsible for notifying Reception and/or Courier personnel that the transfer container(s) contains dry ice to ensure handling in accordance with the SDS;
- The user is responsible for the safe handling, storage and transfer of the transfer container whilst it is on SCHN premises, from the time of preparation to dispatch.

Appendices

BOC SDS for Solid Carbon Dioxide

Abbreviations and Definitions

C	Celsius
DGRs	Dangerous Goods Regulations
IATA	International Air Transport Association
NSW	New South Wales

PD	Policy Directive
PPE	Personal Protective Equipment
SCHN	Sydney Children's Hospitals Network
SDS	Safety Data Sheet

Related Documents

1. NSW Health PD2017_026 - Clinical and Related Waste Management for Health Services - http://www1.health.nsw.gov.au/pds/ActivePDSDocuments/PD2017_026.pdf
2. NSW Health PD2017_013 - Infection Prevention and Control Policy - http://www1.health.nsw.gov.au/pds/ActivePDSDocuments/PD2017_013.pdf
3. NSW Health PD2007_052 - Sharps Injuries - Prevention in the NSW Public Health System - http://www1.health.nsw.gov.au/pds/ActivePDSDocuments/PD2007_052.pdf
4. SCHN Policy – Clinical Research [DRAFT]
5. SCHN Policy – Clinical Research - Use of Laboratory Facilities [DRAFT]
6. SCHN Policy 2014-9061 - Sharps Injuries - Prevention in the NSW Public Health System - http://webapps.schn.health.nsw.gov.au/epolicy/policy/3295
7. SCHN Policy 2015-9070 – Waste Management - http://webapps.schn.health.nsw.gov.au/epolicy/policy/3649/
8. SCHN Practice Guideline 2016-9029 - Personal Protective Equipment for Infection Control - http://webapps.schn.health.nsw.gov.au/epolicy/policy/2609
9. SCHN Procedure – Clinical Research - Bio Specimen Collection, Processing and Shipping [DRAFT]
10. SCHN Procedure – Clinical Research - Equipment and Supplies - Maintenance and Calibration [DRAFT]
11. SCHN Procedure - Clinical Research – Personnel Qualifications and Training Records [DRAFT]
12. SCHN Procedure - Clinical Research – Personnel Roles and Responsibilities
13. SCHN Procedure – Clinical Research - Record Keeping [DRAFT]