UNC HEALTH	Procedure Name	**Investigational Drug Services Inventory Control and Temperature Monitoring**
	SOP #	**IDS SOP-05**
	Date this Version Effective	**01 Jul 2020**
	Responsible for Content	**IDS Manager**

I. Description

This SOP describes inventory control processes. Ordering, accountability, storage, temperature monitoring, and processes for control of investigational product (IP) when temperature excursions happen are also described.

II. Rationale

Clear workflow process for inventory management ensure that IP is appropriately received, stored, transferred, and accounted for at each step along the way.

The goal of this SOP is to create standard processes and consistency in inventory control processes and temperature monitoring.

III. Procedure

A. IP Inventory

1. IP labeled “Investigational Drug: Limited by Federal Law to Investigational Use” will not be used as regular pharmacy stock.
2. UNC Investigational Drug Services (IDS) will not provide IP supplied for a clinical use to a laboratory for non-clinical use unless the sponsor and/or IND holder authorize the release of that IP. If verbal authorization is obtained from a sponsor, written documentation shall be completed and retained.

B. Ordering IP

1. IP is typically obtained from the National Cancer Institute (NCI), pharmaceutical industry, study sponsor, or wholesaler.
    a. Ordering process should be discussed with IDS at least several weeks in advance of the need to order IP.
    b. If requested to order IP by the primary investigator (PI), IDS will verify protocol approval by IRB prior to ordering IP.
    c. Protocol inventory must be received in IDS before study activation can take place. Exceptions will only be made for those protocols that require patient registration prior to shipment of inventory by the sponsor or supplier.
2. If the sponsor supplies IP for the study, they shall supply sufficient IP to enroll patients, but not more than sufficient inventory for six months’ duration of the trial at our institution. Please see UNC IDS SOP-13 for additional details.
3. IDS can order IP provided by NCI only after the study has received full approval from both the IRB and NCI.
    a. IDS will place an order through NCI’s system once a study is activated and IDS is allowed to order IP (often only after patients are already enrolled/randomized).

4. When the initial supply is sent automatically from the sponsor, if requested in advance IDS will notify the study team when IP is available on site.
5. IDS will be responsible for ordering and reordering all drug supplies for research protocols with inventory managed by IDS. IDS will not order or reorder inventory that is managed outside of IDS (i.e. a sponsor utilizing an electronic system that automatically generates orders).
    a. If IDS is to be responsible for managing inventory levels, this must be communicated to and confirmed by IDS in advance of study startup.
    b. IDS reserves the right to refuse to be responsible for managing inventory levels.
    c. If IDS agrees to manage inventory levels, this will be done through a par and re-order level system. IDS will work with the study team to determine what inventory levels to use as par and re-order points. No other inventory management methods will be used and IDS will not proactively anticipate patient volume or use any other method for predicting need for study medication.
    d. If par and re-order levels prove to be insufficient to keep enough stock on hand, IDS will work with the study team to revise the par and re-order levels.
    e. At any time, study teams may request a revision of the par and re-order levels.
6. In rare scenarios, including investigator-initiated trials (IITs) and when the sponsor will reimburse the wholesale acquisition cost, IDS will order commercially available IP from a wholesaler.
    a. Purchases are based on package size and the study will be charged for the entire package size ordered at the time of purchase plus a small percentage of the purchase cost as a processing fee.
    b. Unused IP at study closure cannot be returned for a refund.

C. Vestigo Accountability

1. Drug accountability of receipt, inventory transfer, dispense, and returns are all recorded and kept in Vestigo. IDS will perpetually maintain inventory stored in both central and satellite locations within Vestigo.
2. Used vials and their remainders will not be accounted separately in Vestigo. All used vials are immediately destroyed, including their remnants, immediately after use. For more detail on destruction of IP, please see UNC IDS SOP-08.
3. Elements of drug accountability records (DARs) include, but are not limited to: institution name, primary investigator name, protocol title and number, agent name, agent strength, agent formulation, dispensing location, recorder initials and date, transactions, lot number, and quantity on hand.
4. Accountability will be maintained for IP supplied by the sponsor or procured by IDS. No accountability will be completed for non-study-supplied commercial agents, standard of care medications, or other medications involved in a study not maintained or dispensed by IDS.
5. No sponsor-based forms will be utilized for drug accountability.
6. Satellite DARs will be maintained at each location where IP is stored other than the central location, refer to UNC IDS SOP-03 for additional details.
7. Some studies may request double accountability. IDS should not be assumed to be performing double accountability for all studies. If double accountability is requested for a protocol, the sponsor or study team must make this clear to IDS in writing prior to study opening.

a. IDS will only agree to perform double accountability in cases where a compelling argument, in the view of IDS, can be made why double accountability is necessary.

b. If double accountability is performed, two individuals will check accountability. As accountability is different than dispensing, different individuals may be involved in these processes.

a. Double accountability does not have to be completed by two pharmacists and a pharmacist does not have to be the second check for accountability.

D. Storage of IP

1. IP will be stored in a secure manner with sufficient back up procedures to address and maintain proper storage of IP in an emergency such as a power outage. Please refer to UNC IDS SOP-01 for additional details.

E. Temperature Monitoring

1. IDS will monitor temperature conditions in all storage locations continuously. Data from temperature monitoring will be maintained by IDS in an accessible format.
2. IDS will not utilize sponsor-provided temperature logs/data capture systems.
3. Official recorded temperatures will be recorded from devices which have been calibrated. The calibration documents can be made available upon request. Frequency of calibration will be determined by IDS but calibrations will not be allowed to expire.
4. IDS will use only our own temperature monitoring equipment and will not accept or operate temperature monitoring equipment provided by sponsors or study teams.
5. IP temperatures will be maintained in compliance with standard temperature ranges as defined by United States Pharmacopeia (USP) standards within USP Standard 33-NF28 Sections 10.30.10, 10.30.40, 10.30.60 and according to USP <1079>.
    a. Any temperatures recorded in Fahrenheit will be converted to Celsius.
    b. Though temperature data will be measured to tenths or hundredths of degrees, official recorded temperatures will be rounded to the nearest whole Celsius degree.
    c. Room temperature: temperature prevailing in a working area, 20°C – 25°C with excursions permitted between 15°C – 30°C.
    d. Refrigerated temperature: 2°C – 8°C.
    e. Freezer temperature: -25°C – -10°C.
    f. Ultra-low freezer temperature: -90°C – -60°C (the standard temperature ranges for ultra-low freezer temperatures are not included in the USP Standard 33-NF28 or USP <1079>).
    g. Any request to comply with temperature conditions or temperature limits other than the above standard ranges will be denied unless the request is supported by robust data to justify the request. This determination will be made at the discretion of the IDS manager.
6. IDS will notify the sponsor of temperature excursions.
    a. Deviations of less than ±5°C from room temperature (20°C – 25°C) that are maintained for 24 hours or less will not be reported to the sponsor; only deviations of >5°C maintained for at least 30 minutes, or excursions of less than ±5°C for greater than 24

hours contiguously will be considered a reportable temperature excursion and reported to the sponsor.

b. For refrigerated and frozen medications, excursions will be considered reportable and reported if a temperature deviation of ±1°C or greater is sustained for a contiguous time period of 30 minutes or longer. Excursions from refrigerated or frozen temperatures of less than 1°C for any period of time or excursions of any magnitude of less than 30 minutes will not be reported.

c. If a refrigerator or freezer malfunctions causing temperatures to exceed the acceptable range, IDS will transfer IP to a similar working, monitored unit. The temperature and condition of the malfunctioning unit will be observed prior to returning IP to that unit.

d. In the event of a temperature excursion, IP in question will be quarantined in the appropriate storage conditions until the IP is deemed acceptable for use by the sponsor and/or sponsor representative. The quarantined inventory will be separated from other IP and clearly marked as not for patient use.

e. Relevant temperature data will accompany any notification of excursion in order to support decision making regarding the viability of any affected IP.

f. Monitors, sponsors, or the study team are expected to respond to temperature excursion notifications within two business days.

g. IDS will use their own temperature excursion reporting form. Sponsor-provided forms for reporting temperature excursions will not be utilized.

7. IDS will maintain an on-call response to temperature alarms.

8. IDS will monitor temperature during any IDS controlled or initiated shipping or transfer that leaves the interior of our buildings. If the transfer of IP occurs between two locations where the transfer path does not exit a UNC-controlled facility, temperature will not be monitored. Refer to UNC IDS SOP-07 for additional details.

9. IDS will not monitor the temperature of IP after it has been dispensed and picked up by a study team, research patient, or their representative.

10. Laboratory specimens and food are not permitted in IDS refrigerators or freezers.

F. Study Specific Time Points

1. IDS will not duplicate source documentation information such as nursing infusion start and stop times that are recorded elsewhere (Epic, etc.).

2. For study-specific time points and documentation not collected in source documentation work, IDS will work with the sponsor to identify an acceptable place to document the information.

IV. Original Procedure Date and Revisions

31 Jan 2020, 25 Mar 2020, 15 Jun 2020 – DRAFTS

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