REMM Prototype / Template for Adult Hospital Orders During a Radiation Emergency (Version: 06FEB2025)

Cautions

- Authored by REMM and RITN physicians, this set of orders is a prototype only.
- **Orders must be customized for each patient and incident.**
- Specific drugs are suggested for function only. Patients may not need any/every category of drug listed.
- No HHS, CDC, FDA, or other US government entity endorsement of specific drugs or drug doses is intended or implied by inclusion in this order set.
- Consult the notes at the end of this document for additional, key information.

Internal contamination (decorporation treatments)

- This **Adult Orders Prototype** lists only FDA-approved medications as radioisotope countermeasures.
- Some, but not all of these drugs are currently in the Strategic National Stockpile.
- Prescribers should consult the FDA drug label for complete prescribing information.
- Decorporation drugs should be used in children and pregnant women with great caution.
- The online version of REMM has additional recommendations about additional countermeasure drugs that may be considered.
- This prototype does **not** address threshold levels of internal contamination that would trigger initiation, continuation, or discontinuation of decorporation treatment.
- See REMM Countermeasures Caution and Comment, which discusses this issue.

Drug dosages

- All adult drug doses in this prototype are based on a 70 kg adult with normal renal and hepatic function.
- Appropriate dose adjustments should be made based on age, weight, drug-drug interactions, nutritional status, renal, and hepatic function.

Mass Casualty Emergency

- After a mass casualty Emergency, practitioners may encounter counterfeit drugs. This FDA website will provide information on avoiding and detecting counterfeit drugs and assist with reporting of suspected counterfeit medications.

- **Version date is noted in the header.** Before using an order set that has been previously printed for use offline, consult the online version of REMM to see if updates are available.
  This REMM web page has the most recent version of both the adult and pediatric templates.
  https://remm.hhs.gov/adultorderform.htm

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Table of contents:

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1. Administrative information

Name:_____

Unique Identifier: _____

Address:_____

Phone: _____

Spoken language: _____

Unaccompanied minor:_____

Date of Birth:_____

Age (years): _____

Gender:_____

Next of kin contact information (home phone, cell phone, email, or address):
_____

2. Allergies

No Known Drug Allergies (NKDA)

Allergies (drugs, foods)

If yes, specify: _____

3. Patient Symptoms

Fever (Yes/No) When began:_____

Nausea (Yes/No) When began:_____

Vomiting (Yes/No) When began:_____

Diarrhea (Yes/No) When began:_____

Other (describe):_____

4. Emergency care previously provided:

Did the patient receive any care related to this incident prior to admission (Yes/No):
Describe:_____

Did the patient receive any medications as part of this care (Yes/No):
Describe:_____

Specifically did the patient receive cytokines (Yes/No):
What was given and when (if known):_____

5. Initial Evaluation

Vital Signs:

BP_____Pulse_____Temp_____Oxygen_____

Height_____cm Weight_____kg

Patient Condition Assessment:

__ Good _ Fair _ Stable _ Guarded _ Critical

Abnormal Physical Findings:

_____

_____

6. Admission studies: Labs

__ CBC w/differential and platelet count

__ Comprehensive Metabolic Panel (CMP) / Chem 14

__ PT or INR/PTT/fibrinogen/TT

__ Urinalysis - Collection method: _____

__ Urine culture

__ Blood culture - Collection method:_____Sets:_____
Type of culture: Bacteria, fungal, aerobic, anaerobic

__ Wound cultures

__ Sputum culture

__ Nasal and rectal swabs (for colonization in burn patients)

__ Urine HCG (for all girls ≥10 years or post-menarche, whichever is earlier)

__ Serum HCG (for any girls ≥10 years or post-menarche, whichever is earlier)

__ See blood bank labs section, including Type and Screen or Cross Match

__ Thyroid Function Tests (Specify) _____

__ TSH

__ Free T4

__ Other Labs: _____

Serologies:
_____ Cytomegalovirus (CMV)
_____ Epstein Barr Virus (EBV)
_____ Toxoplasma

7. Blood bank

___ Type and cross match

___ Type and screen

8. Chest X-Ray/Imaging

__ PA/Lateral Urgency:_____

__ Portable Urgency:_____

__ Other imaging studies Specify:_____Urgency: _____

__ Other imaging studies Specify:_____Urgency: _____

9. Electrocardiogram

___ Electrocardiogram
___ STAT Electrocardiogram for chest pain, notify physician

10. Assessment:

NOTE: Body Chart for Recording Results of Radiation Survey and/or Burns can be found on last page of orders

Acute Radiation-related Admission Diagnoses:

a. **Radiation contamination?** Yes_____No_____

See REMM Body Chart (last page) to record whole body radiation survey.

__ External contamination with Isotope (Specify or unknown) _____

__ Internal contamination with Isotope (Specify or unknown) _____

___ Contamination suspected, Isotope uncertain

b. Radiation Exposure / Acute Radiation Syndrome (ARS)?

Yes_____No_____

- Estimated whole body dose from exposure_____(units of gray/Gy)
- See also **Radiation Dose Assessment Section** for additional radiation details and work-up

c. Suspected Organ Involvement:

- ____ Haematalogic
- ____ Dermatologic

- ___ Neurovascular
- ___ Gastrointestinal

Other potential complicating factors

___ Mass casualty incident

__ Other, Specify _____

Specific populations potentially requiring more customized management?

Yes_____No_____

___ Age > 65 y

__ Pregnant/Possibly pregnant and duration of pregnancy (weeks): _____

___ Immunosuppressed

___Other, Specify _____

- See REMM page about at-risk and special needs populations

11. Management

Discharge to outpatient – see separate outpatient care prototype (TBD)

Admit to inpatient: goals of care discussion: Yes/No DNR: Yes/No

Inpatient orders:

Repeat Vital Signs: Weight, Temp, Pulse, BP every _____ hours

Body weight every _____ days

Pulse Ox: frequency _____

Notify physician for:

Temperature _____> 38 ºC _____ Other:_____
SBP:____> 180, <100 _____ Other:_____
DBP:____> 100 < 50 _____ Other:_____
HR:_____>100 <50 _____ Other:_____

RR: _____ >30 <8 _____ Other: _____
O_2 saturation:____< 92% _____ Other: _____

Activity:

_____ Bed rest
_____ Ambulate in room only
_____Ambulate ad lib

Diet:

____Regular Diet _____ Liquids (full, clear) _____NPO
___ Advance as tolerated

___ Low microbial diet (for neutropenia)
___ Special dietary needs/requests:_____

___ Monitor I / O
Frequency _____

__**Use radiation precautions for urine and feces** for patients with internal radiation contamination.

12. Precautions

Infectious

___ Contact
___ Droplet
___ Airborne
___ Reverse Isolation/Neutropenic

Radiation precautions

- **For persons with** known or suspected external or internal contamination.
- **Persons with** exposure but NO contamination are NOT radioactive.
- **Patients with** exposure only do not need Radiation Precautions.

- **Precautions**: Single room, gown, mask, cap, boots, and gloves
- Use medical facility procedures for discarding all biological/physical/radioactive waste, including linens/towels/trash/personal protective equipment.
- Contact Radiation Safety Officer for additional instructions.
- Phone:_____ Pager: _____
- Place Radiation Safety Sign on door if patient has internal or external radioactive contamination; in accordance with hospital radiation safety protocol
- Notify pregnant staff that entry to room is prohibited if patient is/may be contaminated.
- Everyone entering room/area of contaminated patient must wear personal radiation dosimeter assigned by Radiation Safety.
- Use medical facility procedures for disposal of **radiation** waste, including linens/towels/trash/personal protective equipment.

- **See guidance**
  - 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings Healthcare Infection Control Practices Advisory Committee (HHS/CDC)

13. Placement of intravenous access:

peripheral IV_____; central line catheter _____

14. Standing labs / studies, if needed

__ CBC w/diff and platelets q__hours, x _ days,
Followed by q _____ until further orders

_ Comprehensive Metabolic Panel (CMP) / Chem 14 Followed by q____hours, x_____days
Followed by q_____until further orders

__ Other_____(specify test and frequency)

15. Transfusions

(May set institutional transfusion parameters, e.g.: PRBC transfusion for Hgb < (7 g/dl) and platelet count < 20000/microL unless otherwise specified by medical staff.)

For units or_____ml of packed red blood cells (~10-15 ml/kg)
For units or_____ml of platelets (~5-10 ml/kg)

Note:

- Use only leukoreduced AND irradiated products, if available, unless it is known **with certainty** that the patient was exposed to **whole body dose of radiation less than 100 cGy.**
- If radiation whole body dose is **not known** with certainty, leukoreduced AND irradiated products are preferred, if available.
- See REMM blood use page for additional information.

16. IV fluid management: (including requirements for burns, if present)
See REMM burn page for more details about fluid replacement.

__ IV Fluids:_____@_____cc/hr, with additive _____

__ IV Fluids:_____@_____cc/hr, with additive _____

17. __ Foley catheter management (specify) _____

___ Use radiation precautions for urine and feces for patients with internal radiation contamination.

18. Deep Venous Thrombosis (DVT) prophylaxis:

___ TED hose to Bilateral Lower-Extremities

___ Sequential Compression Devices (SCD)

___ Anticoagulation regimen _____

___ Other

Note: The potential benefit of any anticoagulation regimen (e.g. **heparin**) should be balanced against the risk of excessive bleeding in patients with severe thrombocytopenia or significant gastrointestinal toxicity.

19. Admit to:

__ Inpatient Service_____ Area_____

__ Team: _____ ICU_____

__ Hem/Onc:_____ Hematopoietic Stem Cell Transplantation: _____

__ Admitting Physician: _____ Pager: _____

__ Attending Physician: _____ Pager: _____

__ Other Physician: _____ Pager: _____

20.Diagnoses

Acute/Chronic Non-radiation Related Admission Diagnoses:

a. _____

b. _____

c. _____

d. _____

e. _____

Ongoing medications related to pre-existing conditions:

a. _____

b. _____

c. _____

d. _____

e. _____

21.Consultations: urgent yes or no (blank = N/A)

__ Intensive Care

__ Hematopoietic Stem Cell Transplantation

__ Mental Health / Psychiatry

__ Ophthalmology

__ Dermatology

__ Radiation Safety

__ Surgery:____General ___Trauma ____Burn_____Thoracic____Orthopedics

__ Hepatology

__ Pulmonary

__ Cardiology

___ ENT

___ Physical/occupational therapy

___Transfusion Medicine

___Radiation Oncology

___Endocrinology

___Palliative Care and Pain Service

___Gastroenterology

___Burn Team

____Infectious Disease

____Plastic Surgery

____Nephrology

____Social Services

___ Respiratory Therapy

___ Psychiatry

___ Nutritionist/Dietician

__ Medical Toxicology

___Other _____

22. Respiratory Therapy:

___ Use radiation precautions for personnel, equipment, and waste if patient has internal radiation contamination.

__ Room air __ Chest tube care (Specify)_____

__ Titrate oxygen supplementation for Oxygen saturation >_____%

__ Nebulizer treatment (Specify) _____

23. Wound care: (See also REMM burn page)

___ Decontaminate external wounds if there is external radiation contamination. See REMM radiation contaminated wound care recommendations.

___ Sterile dressing to wounds daily

___ Monitor waste

___ Use medical facility procedures for discarding biological/**radioactive**/physical waste and linens/towels/trash/personal protective equipment.

__ **Radiation precautions** (needed if patient has radiation contamination)

__ **Silvadene (Silver Sulfadiazine)** cream topically to burns (but not face) Specify location, frequency:_____

_ Other topical silver impregnated burn treatment (e.g. Acticoat, Restore) Specify medication, location, frequency:_____

__ Other burn treatment: (e.g., ReCell) Specify:_____

__ **Bacitracin** topically to burns/BID

___ Plastic Surgery Consultation

___ Other wound management per **Burn Team/Dermatology/Surgery**: Pager_____Phone _____

__ Consider referral to American Burn Association Burn Center

24. Orthopedic care:

___ Splint/brace/cast/crutches

___ Other orthopedic management procedure per orthopedics: Pager_____Phone _____

25. Radiation Dose Assessment

A. Biodosimetry and Bioassay assays

- Difference between Biodosimetry and Bioassay
- Define biodosimetry
- More about biodosimetry
- Dicentric chromosome assay

B. Biodosimetry assays for **radiation exposure**

- See REMM information on
  - **Dose Estimator for Exposure: 3 biodosimetry tools**
  - **Dose Reconstruction**
- **Estimated whole body dose from exposure: _____** (Gray)
  - Using which tool(s) _____

    e.g., vomiting, lymphocyte depletion kinetics, dicentric chromosome assay
    Note: if different assays give different results
- METREPOL Scores: Heme____GI____Neuro_____Cutaneous_____
- Response Category (RC score) _____
  Explain METREPOL
  Consider Response Category in clinical triage (Interactive tool for ARS)
- Date of exposure: _____
- Time of exposure: _____
- Location of patient at time of exposure:_____
- Estimated whole body/partial body dose, specify_____(dose)
- Dose unknown:_____

Dicentric Chromosome Assay Instructions:

- Draw extra green top tube and provide: date _____ time _____
- See REMM for location of approved US laboratories that perform this test.
- Send this tube **ON ICE** for outside lab study
  - To the attention of: _____
  - Name of lab:_____
  - Address of lab:_____

C. **Radiation bioassay** for evaluating/managing internal decontamination

- Collect ≥ 70 mL spot urine for_____(name of radioactive isotope)
- Directions for sample collection, labeling, packaging and shipping bioassay specimen to CDC bioassay lab:
  https://emergency.cdc.gov/radiation/labinfo.asp

Note: Consult senior radiation emergency medical managers for name and location of other laboratories that may become available to perform this test in a large mass casualty incident. Routine labs generally cannot perform this test, although in large emergencies, senior managers may announce special arrangements.

26. General Medications:

- Cytokines (If pt has not already received from first responders- see Neutropenia section below)
- Drug names are generally listed as follows **Generic** (**Brand**) names
- Some drugs with **bold blue font** have **DailyMed** web site hyperlinks with additional information.

For gastric acid suppression:

__ **Lansoprazole (Prevacid)** 15-30 mg PO daily

For radiation-induced nausea & vomiting:

__ **Ondansetron (Zofran)** 4-8 mg IV/PO q 8h PRN nausea/emesis

__ **Lorazepam (Ativan)** 0.5 mg – 1 mg PO q 6-8h PRN anxiety/insomnia/breakthrough nausea

__ **Prochlorperazine** 10 mg PO/IV/IM (if adequate platelets) q 6-8h PRN anxiety/insomnia/breakthrough nausea

See REMM bibliography on treatment of nausea and vomiting

For fever:

__ **Acetaminophen** 650 mg PO q 6 – 8h PRN temperature> 38 ºC

For diarrhea:

__ **Loperamide hydrochloride (Imodium)**:
- Recommended initial dose is 4 mg (2 capsules) followed by 2 mg (1 capsule) after each unformed stool.
- Daily dose should not exceed 16 mg (8 capsules)

___**Diphenoxylate hydrochloride with atropine sulfate** (**Lomotil**) tablet 2.5 mg
- 2 tablets PO up to 3 or 4 times/day, not to exceed 20 mg/24 hours
- Maintenance dose: smaller dose/ less frequent if responding

For rash and itching (unrelated to radiation exposure):

__ **Topical steroid**: _____ Medication Name
___Cream/lotion/ointment ___Strength ___ Frequency

__ **Diphenhydramine hydrochloride (Benadryl)** 25-50 mg PO q 4-6 hours for pruritis, not to exceed 300 mg/24 hours

For pain:

___ **Morphine sulphate**_____mg_____route_____frequency

___ **Other pain medication** (specify): name, dose, route, frequency

_____

For skin burns: (See also REMM burn page and wound care section)

Record burn area(s) on body diagram and % Body Surface Area affected
(See page 21 for body chart.)

Burn topical regimen _____

Replace body fluid _____

Other burn therapy _____

Consider referral to American Burn Association Burn Center: _____

For oral mucositis:

Mouth care regimen _____

27. Radioisotope decorporation or blocking agents:

- Note: Only FDA approved radiation countermeasures are listed in table below.
- See REMM Table for longer list of countermeasures which have been recommended by some experts but are not FDA approved as radiation countermeasures.

Medical Countermeasure	Administered for	Route of Administration	Dosage	Duration
Ca-DTPA[1] **Zn-DTPA**[1] See REMM's DTPA information. See FDA's Zn-DTPA drug label. See FDA's Ca-DTPA drug label.	Americium (Am-241)[1] Curium (Cm-244)[1] Plutonium (Pu-238 and Pu-239)[1]	**IV**[1]**:** Give once daily as a bolus or as a single infusion, i.e., do not fractionate the dose. DTPA is FDA-approved for intravenous Rx of known or suspected internal contamination with Am, Cm, and Pu only. **Nebulized inhalation**[1]**:** DTPA is FDA-approved for nebulized inhalation in adults only, and if the route of contamination is through inhalation.	**IV:** 1 g in 5 cc 5% dextrose in water (D5W) or 0.9% sodium chloride (normal saline, NS) slow IV push over 3-4 minutes OR 1 g in 100-250 cc D5W or NS as an infusion over 30 minutes **Nebulized inhalation:** 1 g in 1:1 dilution with sterile water or NS over 15-20 min	• Ca-DTPA for the first dose • Give Zn-DTPA for any follow-up doses (i.e., maintenance as indicated) • Duration of therapy depends on total body burden and response to treatment

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Medical Countermeasure	Administered for	Route of Administration	Dosage	Duration
Potassium iodide[1] See REMM's KI summary information. See FDA's KI information.	Iodine (I-131) (NOTE: for the prevention of the uptake of radioactive iodine released from a nuclear power plant meltdown)	**PO**	**Adults >40 years:** 130 mg/day (for projected thyroid exposure ≥500 cGy) **Adults 18-40 years:** 130 mg/day (for projected thyroid exposure ≥ 10 cGy) **Pregnant or lactating women** of **any age:** 130 mg/day (for projected thyroid exposure ≥ 5 cGy)	• Some incidents will require only a single dose of KI. • Incident managers may recommend additional doses if ongoing radioactive iodine ingestion or inhalation represents a continuing threat. • See REMM page about duration. • See FDA page about duration.
Prussian blue, insoluble[1] See REMM page on Prussian Blue See FDA's Prussian Blue drug label.	Cesium (Cs-137) Thallium (Tl-201)	**PO**	**Adults:** 3 g PO tid (See FDA package insert) OR 1 - 3 g PO tid with 100-200 mL water, up to 10-12 g/day (based on Goiânia accident data)	• Minimum 30 days course per FDA • Obtain bioassay and whole body counting to assess treatment of efficacy • Duration of therapy depends on total body burden and response to treatment

28. Neutropenia therapy ± antimicrobials

Neutropenia definition:
Total count of neutrophils + bands in the peripheral blood <1,000 /microL

- The drugs listed below have been approved by the FDA for the indication of acute exposure to myelosuppressive doses of radiation
- See **REMM cytokines page** for much more detailed information, especially potential need for dose alterations during large mass casualty incidents when medical countermeasures may be scarce.

Myeloid cytokines approved by the FDA for the indication of acute exposure to myelosuppressive doses of radiation

Cytokine	Adult dose
G-CSF or filgrastim (Neupogen drug label)	• 10 mcg/kg/day as a single daily subcutaneous injection in adults and children • Continue administration daily until absolute neutrophil count remains greater than 1,000/mm^3 (= 1.0 x 10^9 cells/L) for 3 consecutive (daily) CBCs or exceeds 10,000/mm^3 (= 10 x 10^9 cells/L) after a radiation- induced nadir. • See REMM cytokines page for more information about potential dose alterations **during large mass casualty incidents when medical countermeasures may be scarce.**
Neupogen Biosimilar: G-CSF: filgrastim-txid (Nypozi Drug Label)	• Administer 10 mcg/kg/day as a single daily subcutaneous injection in adults and children for the FDA-approved indication of acute exposure to myelosuppressive doses of radiation. • Continue daily administration until absolute neutrophil count remains greater than 1,000/mm3 (= 1.0 x 109 cells/L) for 3 consecutive (daily) CBCs or exceeds 10,000/mm3 (= 10 x 109 cells/L) after a radiation-induced nadir. • Vial sizes are 300 mcg and 480 mcg. For a 70 kg person, 2 vials of either size would be the appropriate dose. It would be reasonable to indicate a maximum dose like 960 mcg OR two vials per dose though this is not uniformly agreed upon. Note that if the appropriate dose requires administration of 2 vials, separate injection sites would be required. • See REMM cytokines page for more information about potential dose alterations **during large mass casualty incidents when medical countermeasures may be scarce.**

Pegylated G-CSF or pegfilgrastim (Neulasta drug label)	• Two doses, 6 mg each, administered subcutaneously one week apart. • A CBC should be obtained prior to administration of the second dose of Neulasta. Subject matter experts recommend not administering the second dose if absolute neutrophil count is greater than 5,000/mm^3 (= 5.0 x 10^9 cells/L). • See REMM cytokines page **for more information about potential dose alterations during large mass casualty incidents when medical countermeasures may be scarce.**
Pegylated G-CSF: Pegfilgrastim-cbqv (biosimilar to Neulasta) (Udenyca drug label) Pegfilgrastim-fpgk (Stimufend drug label) Pegfilgrastim-bmez (Ziextenzo drug label)	• Two doses, 6 mg each, administered subcutaneously one week apart. • A CBC should be obtained prior to administration of the second dose of Neulasta. Subject matter experts recommend not administering the second dose if absolute neutrophil count is greater than 5,000/mm^3 (= 5.0 x 10^9 cells/L). • See REMM cytokines page **for more information about potential dose alterations during large mass casualty incidents when medical countermeasures may be scarce.**
Pegylated G-CSF: Pegfilgrastim-fpgk (biosimilar to Neulasta) (Stimufend drug label)	• Two doses, 6 mg each, administered subcutaneously one week apart. • A CBC should be obtained prior to administration of the second dose of Neulasta. Subject matter experts recommend not administering the second dose if absolute neutrophil count is greater than 5,000/mm^3 (= 5.0 x 10^9 cells/L). • See REMM cytokines page **for more information about potential dose alterations during large mass casualty incidents when medical countermeasures may be scarce.**
GM-CSF or sargramostim (Leukine® drug label)	• A subcutaneous injection administered once daily as follows-- • 7 mcg/kg in adult and pediatric patients weighing greater than 40 kg • 10 mcg/kg in pediatric patients weighing 15 kg to 40 kg • 12 mcg/kg in pediatric patients weighing less than 15 kg • Continue administration of Leukine until absolute neutrophil count remains greater than 1,000/mm^3 (= 1.0 x 10^9 cells/ L) for 3 consecutive CBCs or exceeds 10,000/mm^3 (= 10 x 10^9 cells/L) after a radiation-induced nadir. • See **REMM cytokines page for more information about potential dose alterations during large mass casualty incidents when medical countermeasures may be scarce.**

Romiplostim (Nplate, drug label)	• 10 mcg/kg administered once as a subcutaneous injection. • Administer the dose as soon as possible after suspected or confirmed exposure to myelosuppressive doses of radiation • The FDA drug label says that for treatment of myelosuppressive doses of radiation: • "Administer romiplostim regardless of whether a complete blood count (CBC) can be obtained." • "Estimate a patient's absorbed whole body radiation dose (i.e., level of radiation exposure) based on information from public health authorities, biodosimetry if available, or clinical findings such as time to onset of vomiting or lymphocyte depletion kinetics." • See REMM cytokines page **for more information about potential dose alterations during large mass casualty incidents when medical countermeasures may be scarce.**

See Clinical Practice Guidelines for Myeloid Cytokines (for Adults)

- Smith TJ, Bohlke K, Lyman GH, Carson KR, Crawford J, Cross SJ, Goldberg JM, Khatcheressian JL, Leighl NB, Perkins CL, Somlo G, Wade JL, Wozniak AJ, Armitage JO. Recommendations for the Use of WBC Growth Factors: American Society of Clinical Oncology Clinical Practice Guideline Update. (2015 ASCO guideline) J Clin Oncol. 2015 Oct 1;33(28):3199-212. [PubMed Citation] (This 2015 ASCO guideline updates the 2006 myeloid cytokine guideline)
- NCCN Clinical Practice Guidelines in Oncology, Myeloid Growth Factors, Version 2.2016. See section entitled "NCCN Guidelines for Supportive Care" > "Myeloid Growth Factors". (Registration required.)
- Dainiak N, Gent RN, et al. First Global Consensus for Evidence-Based Management of the Hematopoietic Syndrome Resulting From Exposure to Ionizing Radiation. Disaster Med Public Health Prep. 2011 Oct;5(3):202-212. [PubMed Citation] (Full text)

For Antimicrobial prophylaxis (no fever) with neutropenia:

- For patients with neutropenia who have **NOT HAD NEUTROPENIC FEVER**.
- Use as appropriate for each patient.
- Drugs listed are examples only.

Anti-bacterial prophylaxis:

__ **Levofloxacin (Levaquin)** 500 mg PO/IV daily

Anti-viral prophylaxis (neutropenia without fever)

__ **Acyclovir (Zovirax)** 800 mg PO q12h, or
__ **Acyclovir (Zovirax)** 250 mg/m^2 IV q8h

Anti-fungal prophylaxis (neutropenia without fever)

__ **Fluconazole (Diflucan)** 400 mg PO/IV daily – beginning when absolute neutrophil Count (ANC) becomes < 1000

__ **Posaconazole (Noxafil)**
Extended release tablets – 300 mg oral– one tablet twice daily

day 1, then one tablet daily thereafter.
Suspension is 300 mg TID, then 300 mg once daily– beginning when Absolute Neutrophil Count (ANC) becomes < 1000.

___ **Micafungin** prophy – IV 50-100 mg once daily; RX (off label) 100 mg daily

___ **Caspofungin** Rx 70 mg on d1, then 50 mg daily; Prophy (off label) 50 mg IV daily.

___ **Abelcet** Rx (off label) 5 mg/kg daily

___ **Ambisome** Rx (off label) 5 mg/kg IV daily

___ **Cresemba** (isavuconazonium sulfate) prophy; (off label) IV,oral: 372 mg (200 mg isavuconazole) q8 for 6 doses; maintenance 372 mg once daily

___ **Cresemba** Rx for mucor of aspergillos same regimen as above

___ **Voriconazole** prophy (off label) IV 4 mg/kg twice daily, oral 200 mg twice daily; Rx (off label) 6 mgkg IV twice daily for 2 doses then 4 mg/kg twice daily

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For treatment of neutropenia AND fever (defined as T>38 ºC while neutropenic)

Anti-microbial work-up and therapy

__ Blood cultures (frequency) ___ Urinalysis w/culture

__ Sputum culture + sensitivity ____Chest x-ray

__ **Cefepime (Maxipime)** 2gm IV q 8h

__ **Vancomycin (Vancocin)** 1gm IV q 12h
Consider if: suspected catheter-related infection, skin or soft tissue infection, pneumonia or hemodynamic instability.

Consider trough level before 4th dose.

Antifungal therapy

Consider one of the following if: fever >72 hours on antibacterial therapy, evidence of fungal infection or hemodynamic instability.

__ **Fluconazole (Diflucan)** 400 mg PO/IV daily – beginning when absolute neutrophil Count (ANC) becomes < 1000

__ **Posaconazole (Noxafil)**
Extended release tablets – 300 mg oral– one tablet twice daily day 1, then one tablet daily thereafter.
Suspension is 300 mg TID, then 300 mg once daily– beginning when Absolute Neutrophil Count (ANC) becomes < 1000.

___ **Micafungin** prophy – IV 50-100 mg once daily; RX (off label) 100 mg daily

___ **Caspofungin** Rx 70 mg on d1, then 50 mg daily; Prophy (off label) 50 mg IV daily.

__ **Abelcet** Rx (off label) 5 mg/kg daily

__ **Ambisome** Rx (off label) 5 mg/kg IV daily

__ **Cresemba** (isavuconazonium sulfate) prophy; (off label) IV,oral: 372 mg (200 mg isavuconazole) q8 for 6 doses; maintenance 372 mg once daily

__ **Cresemba** Rx for mucor of aspergillos same regimen as above

__ **Voriconazole** prophy (off label) IV 4 mg/kg twice daily, oral 200 mg twice daily; Rx (off label) 6 mgkg IV twice daily for 2 doses then 4 mg/kg twice daily

See REMM page about peer-reviewed Fever and Neutropenia Guidelines

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NOTES

1. FDA approved for this indication

Body Chart for Recording Results of Radiation Survey and/or Burns