Radiation Exposure: Diagnose and Manage Acute Radiation Syndrome (ARS)

EVALUATE FOR ACUTE RADIATION SYNDROME (ARS)
- **What is ARS?**
  - ARS synonyms: Acute Radiation Syndrome, Acute Radiation Sickness
  - Is ARS the result of a radiological or nuclear incident?
  - More about ARS

LOOK FOR SIGNS OF ARS
- Perform targeted physical examination

ESTIMATE DOSE FROM EXPOSURE
USE ANY CLINICAL DATA AVAILABLE (INTERACTIVE TOOLS)
- Lymphocyte division kinetics
- Time to onset of vomiting
- Prodomal symptoms
- Chromosome analysis (dicentrics)

DOSE RECONSTRUCTION BY PATIENT LOCATION
- Match patient location to exposure map

BEGIN ASSESSMENT & MANAGEMENT
- Assess/manage 4 sub-syndromes of ARS:
  - hematologic, gastrointestinal, cutaneous, neurovascular
- Does patient need outpatient or inpatient management? (Response category tool)
- Plan for evolution of ARS over time
- Expect heterogeneity of signs/symptoms
- Consider using template for hospital orders

SPECIAL ISSUES
- Manage ARS with scarce resources (e.g., after nuclear detonation)
- Consider white cell cytokines to mitigate neutropenia if dose > 2 gray
- Consider multi-organ dysfunction and multi-organ failure syndromes of ARS
- Consider hematopoietic stem cell transplant for severe ARS

DECEASED
- Decedents with exposure only and no contamination require no special radiation precautions
- Register deecedent in incident database

SURVIVORS
- Discharge with appropriate follow-up instructions
- Register patient in incident database
- Radiation follow-up considerations
  - Whole-body dose
  - Immune status
  - Risk of cancer
  - Risk of specific organ dysfunction

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