Clinical Imaging Steering Committee
2020 Strategic Priorities

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1) **Innovative clinical trials that incorporate imaging as an integral biomarker. Prioritization will be given to trials that use imaging as:**

   a) A tool to select, stratify, and monitor response to precision medicine-based therapies, including immunotherapies (immune checkpoint blockades and T-cell based therapies)

   b) A predictive biomarker for side effects/toxicity profiling

   c) A tool to differentiate response from pseudo-progression or true tumor progression

   d) an early biomarker of response and surrogate for established endpoints

   e) Imaging as a tool to assess biodistribution of a targeted agent/companion diagnostic

2) **Explore methods to improve and standardize qualitative and quantitative imaging research approaches**. **Areas of improvement include:**

   a) Defining/standardizing MRI and/or PET imaging metrics in measuring therapeutic outcome of novel agent combinations

   b) Improving repeatability/reproducibility of imaging findings

   c) Optimization of imaging acquisition techniques and post-processing

3) **Develop clinical trials that employ imaging to inform cancer management. Examples of trials include:**

   a) Trials that employ imaging as a means for cancer detection and characterization.

   b) Trials that employ imaging as a surveillance technique to identify cancer recurrence or to assess the phenotypic transformation of lesions

   c) Trials that employ imaging to guide response adaptive trials

   d) Trials to alter or adapt patient management can be exploratory or definitive, the latter of which could include a comparator arm not using imaging to inform/adapt therapy. Collection of data on quality of life, resource utilization, quantitative imaging and

outcomes is encouraged as a trial component to provide meaningful patient-centered and societal outcomes

4) **Assess imaging response criteria and promotion of imaging endpoints beyond RECIST, investigating if imaging during/after completion of therapy can serve as surrogate marker for ultimate patient outcome e.g., PFS, OS)**

    a) Redefine RANO (2.0)

    b) Define response evaluation in bone
    c) Assess volumetric based tumor burden quantitation

    d) Test automated methods that are accurate, precise, and convenient in the clinical workflow

5) **Assess/evaluate molecular mechanism(s) for quantitative functional imaging**

    a) Test improved physiologic (functional and molecular) imaging methods

        i) Focus on metabolomic, perfusion and diffusion techniques

    b) Seek the biological basis of imaging phenotypes with imaging-pathology correlations

        i) Genomic correlates

        ii) Proteomic correlates

        iii) Metabolomic correlates

6) **Strategies for collecting, analyzing, and standardizing Big Data and Radiomics features**

7) **Strategies for lowering radiation dose from imaging studies in clinical trials**