Background: 8 key facts about carbon ion therapy at Mayo Clinic

- 1. Mayo Clinic is announcing plans to make carbon ion therapy available on its campus in Jacksonville, Florida. Carbon ion therapy will be part of the recently announced integrated oncology facility on the Jacksonville campus. The \$233-million integrated oncology facility will include chemotherapy, standard radiation, proton beam therapy and carbon ion therapy. This integrated oncology facility will be the only one of its kind in North America.
- 2. The establishment of a carbon ion therapy program at Mayo Clinic is part of ongoing efforts to use heavy particle therapies for cancer treatment. It is a result of a long-time collaboration with Hitachi.
- 3. Carbon ion therapy belongs to a family of particle therapies which include protons, helium and other ions. Carbon ions have a mass 12 times the weight and size of proton ions and are much more destructive to cancer cells and tumors.
- 4. There may be some types of cancer that are resistant to proton beam therapy that may be more effectively treated with carbon ion therapy. Like proton therapy, carbon therapy has the potential to destroy cancer cells within a tumor without damaging the surrounding tissue.
- 5. Carbon ion therapy is not FDA approved. Working with Hitachi, Mayo Clinic will undertake a robust scientific evaluation and analysis of the capability of this technology and identify which cancers would be most appropriate for treatment. Mayo Clinic will work with Hitachi to obtain FDA approval of this technology.
- 6. Mayo Clinic also will work with Hitachi to identify other opportunities to use this technology to best treat patients.
- 7. Proton beam therapy will be available at the Mayo Clinic Jacksonville campus in 2025, and we anticipate carbon ion therapy will be available after that time.
- 8. An outdated form of carbon ion therapy was developed in the United States and used from a research standpoint until it was discontinued in the early 1990s, even though it was shown to have promise. The scientific and published data from Europe and Asia indicate this technology is worthy of study in the United States.