**Describe the circumstances of the case:**

The patient is suffering from iron overload which can be a life threatening condition. Excess iron can result in organ damage and increased risk of cardiac complications (a significant number of transfused patients die from cardiac complications). The patient can be treated using chelation therapy to remove excess iron from the body. Accurate monitoring of liver iron concentration (LIC) on a regular basis during this process is strongly recommended. The short-term plan is for the patient to have one MRI scan to assess initial LIC. The long-term plan will depend on the results of the initial scan and following scans may be required.

**Clearly describe the service(s) being requested:**

FerriScan®, provided by Resonance Health in Perth, Australia, is the only FDA approved MRI system for measuring liver iron concentration. The MRI scan is done locally in Saskatchewan by a radiology centre that has been set up to use FerriScan®. The information from the patient’s scan is sent to Resonance Health corporate headquarters in Perth, Australia electronically and processed at a core laboratory in a quality controlled environment. The data analysis is carried out by specifically trained medical physicists at Resonance Health. The centralized laboratory for the data analysis enables provision of a high-quality, reproducible method to ensure results are accurate. The core laboratory operates under ISO 13485:2016 quality standards. The results from the patient’s scan in the form of a report are sent back to the radiology centre in Saskatchewan within two business days of the patient having the MRI scan.

**State – to the best of the specialist’s knowledge – that the service(s) are not available anywhere in Canada.**

FerriScan® R2-MRI is only available from Resonance Health. There is no availability of this service elsewhere in Canada or elsewhere in the world. The other options for assessing LIC are liver biopsy, analysis of serum ferritin levels, or T2\* MRI methods. The disadvantage of using liver biopsy instead of FerriScan® is that liver biopsy is risky, invasive and provides information on only a small sample of liver tissue in an organ that is often non-homogeneous. The disadvantage of using serum ferritin levels is that they do not provide accurate information about a patient’s iron stores because results are too variable and can be confounded by inflammation and infection. There are several T2\* methods claiming to measure LIC. The disadvantage of using these methods is that they do not have FDA approval and are unreliable for determining LIC providing results that vary significantly. Differences in results are caused by the model of 1.5 Tesla MRI scanner used, how data is collected and which calibration curves are used to evaluate the data.

**Where possible the name and location of the physician who is to provide the service.**

The Technical and Research Manager responsible for overseeing analysis of patient images is Dr Wenjie Pang ([wenjiep@resonancehealth.com](mailto:wenjiep@resonancehealth.com)).

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