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iRSM: A Living Laboratory for Head and Neck Reconstruction and Rehabilitation

The Institute for Reconstructive Sciences in Medicine (iRSM) provides a spectrum of surgical reconstruction and rehabilitation care for patients with conditions of the head and neck. This requires integration of a wide range of disciplines in one care environment together with engagement of other disciplines external to iRSM. With the objective of bringing innovation and excellence in care to Albertans, Canadians and the international community, iRSM pursued a strategy that involved fusing clinical care and research into one environment. This strategy placed the patient at the centre of the clinical care-research process. The strategy adopted has provided iRSM with a living laboratory for head and neck reconstruction and rehabilitation.

The living laboratory approach at iRSM has engaged facets of active user involvement, real-life setting, multi-stakeholder participation, multi-method and co-creation. Head and neck cancer care at iRSM will be used to illustrate the iRSM living laboratory. Function is the primary patient-based desired outcome of the care process. The ISO9000 quality system places the patient at the centre of the care process and the Head and Neck Functional Assessment Laboratory brings active patient involvement in the care pathway. This process also provides for follow-up of real-life testing of the innovations in care. The head and neck cancer care continuum of resection-reconstruction-rehabilitation together with adjunctive therapy makes for a very complex care pathway. This necessitates skills of many disciplines spread over multi-faculty and multi-institutional stakeholders. Multi-stakeholder involvement is reflected in the ownership of iRSM down to the frontline care giver-researcher level. A multi method and co-creation approach is fundamental to the iRSM approach to care and technology development. This is reflected in work such as international leadership in the digital surgical design approach in advanced jaw reconstruction as well as the innovation in remote sensing of swallowing rehabilitation.

The living laboratory approach at iRSM is driven by integration of clinical care and research as being fundamental to care provided each and every day at iRSM. Over time, iRSM has been repeatedly asked how it manages to bring innovation so rapidly to patients. The answer to this is thought to exist in the living laboratory environment at iRSM.