Chapter 12 Health—Coordinating the Appropriate Provision of Helicopter Ambulance Services

1.0 Main Points

The Ministry of Health is responsible for providing air ambulance services in the province. It contracts Shock Trauma Air Rescue Services (STARS), a non-profit organization, to provide 24-hour air medical transportation by helicopter for critically ill and injured patients. Helicopter ambulance services typically offer faster transport than ground ambulance services for patients located far from trauma centres.¹

In 2021–22, STARS flew 1,077 missions and transported 873 patients (2020–21: 902 missions; 701 patients).

By November 2022, the Ministry implemented the remaining three recommendations we made in 2019 relating to coordinating the appropriate provision of helicopter ambulance services.

The Ministry now receives comprehensive operational information from STARS on a quarterly basis. This includes information about changes to personnel, staff training and education, the number of calls received, missions completed, patients transported, and missions cancelled or declined. In addition, the Ministry now receives quarterly reporting from STARS about the quality of care provided during helicopter ambulance services.

Receiving regular reporting on training, quality of care, and reasons for declined or cancelled missions provides the Ministry with sufficient information to monitor the terms of its agreement with STARS, and to take timely action to address issues.

2.0 Introduction

2.1 Background

The Ministry of Health is responsible for coordinating the appropriate provision of helicopter ambulance services under *The Ambulance Act*.

In January 2021, the Ministry renewed its 10-year agreement with STARS, and budgeted \$11.9 million in 2022–23 to deliver helicopter air ambulance service in Saskatchewan.^{2,3} This cost includes aircraft maintenance, as well as services provided by transport physicians (e.g., for consultations), education for STARS medical staff, STARS dispatch centre, and administration.

¹ The Saskatchewan Health Authority is responsible for providing ground ambulance services.

² Information provided by the Ministry of Health.

³ STARS also receives donations from several public and private industry donors. <u>www.stars.ca/leadership-and-governance/report-to-the-community/</u> (13 January 2023).

As shown in **Figure 1**, the number of missions flown and the number of patients transported fluctuates from year to year. In 2021–22, STARS flew 1,077 missions and transported 873 patients.

Figure 1—Number of STARS Missions and Patients Transported

	2018–19	2019–20	2020–21	2021–22
Missions flown	825	888	902	1,077
Patients transported	677	708	701	873

Source: Adapted from information provided in STARS' Saskatchewan Quarterly Reports on Operations.

2.2 Focus of Follow-Up Audit

This chapter describes our second follow-up audit of management's actions on the three outstanding recommendations we first made in 2019.

In 2019, we assessed the Ministry of Health's processes to coordinate the appropriate provision of timely and quality helicopter ambulance services in Saskatchewan. Our *2019 Report – Volume 2*, Chapter 22, concluded that, for the 12-month period ended June 30, 2019, the Ministry had, other than the areas identified in our eight recommendations, effective processes.⁴ By June 2021, the Ministry implemented five of the eight recommendations.⁵

To conduct this audit engagement, we followed the standards for assurance engagements published in the *CPA Canada Handbook—Assurance* (CSAE 3001). To evaluate the Ministry's progress toward meeting our recommendations, we used the relevant criteria from the original audit. The Ministry agreed with the criteria in the original audit.

To complete this follow-up audit, we interviewed key staff and examined quarterly reports and other records the Ministry received from STARS relating to coordinating helicopter ambulance services.

3.0 STATUS OF RECOMMENDATIONS

This section sets out each recommendation including the date on which the Standing Committee on Public Accounts agreed to the recommendation, the status of the recommendation at November 30, 2022, and the Ministry's actions up to that date.

3.1 Reports on Medical Staff Training Received

We recommended the Ministry of Health periodically verify medical staff qualifications and training for those providing helicopter ambulance services. (2019 Report – Volume 2, p. 169, Recommendation 4; Public Accounts Committee agreement January 11, 2022)

Status—Implemented

⁴ 2019 Report - Volume 2, Chapter 22, pp. 155-176.

⁵ <u>2021 Report – Volume 2, Chapter 26, pp. 197–206.</u>

Since spring 2021, the Ministry of Health received quarterly reports from STARS on personnel changes and staff training courses provided.

In its agreement with STARS, the Ministry requires all STARS staff to be registered or licensed by a professional regulatory body, which we tested and confirmed in our first follow up for the period ending June 2021. In our sample of two nurses and two paramedics, each of them held current licences and registrations with their respective regulatory bodies.⁶

The Ministry also requires STARS to provide staff with ongoing training. STARS provides mandatory monthly, quarterly, and annual training.

In its quarterly reports to the Ministry (since spring of 2021), we found STARS outlined the dates and what types of educational sessions it held (e.g., human patient simulator training) in Regina and Saskatoon. It also reported the percentage of staff who took the training.

Our review of the quarterly reports found STARS reported all STARS medical staff (35 staff total at September 30, 2022) met their training requirements from October 2021 to September 2022.

Receiving regular reporting about STARS' staff training helps the Ministry know whether STARS meets the terms of its agreement, as well as whether it uses appropriately trained staff to provide helicopter ambulance services to Saskatchewan patients.

3.2 Key Information on Quality of Patient Care Analyzed

We recommended the Ministry of Health routinely receive and analyze key information about the quality of patient care provided during helicopter ambulance services. (2019 Report – Volume 2, p. 172, Recommendation 6; Public Accounts Committee agreement January 11, 2022)

Status—Implemented

Since spring 2021, the Ministry of Health receives quarterly reports from STARS including key information about the quality of patient care provided during helicopter ambulance services. The Ministry reviewed and analyzed these reports. It also discussed key information with STARS.

STARS tracks six quality of care indicators related to medical procedures completed during a mission, which we found correspond to good practices in our original audit (See **Figure 2**).

Figure 2—Quality of Care Indicators STARS Tracks

- 1. Advanced airway placement success
- 2. Ventilator use with advanced airways
- 3. Blood glucose check for altered mental status
- 4. Waveform capnography ventilated patients (measurement of the partial pressure of CO₂ in each exhalation)
- 5. First attempt tracheal tube success
- 6. Verification of tracheal tube placement (through direct observation or x-ray)

Source: Information provided by STARS.

⁶ For example, Saskatchewan Registered Nurses Association for registered nurses.

STARS provides the Ministry with quarterly reports including results for each indicator. Where the indicator does not achieve 100% the Ministry will inquire with STARS to gain a better understanding of the variances.

For the two quarterly reports we reviewed, we found the Ministry analyzed the quality of care indicators in STARS' quarterly reports and met with STARS to discuss and understand the reasons why any indicators were not met. For example, the September 2022 quarterly report indicated Saskatoon STARS successfully placed a tracheal tube and verified the placement was correct for 100% of missions that required it; however, only 90% of missions successfully placed it on the first attempt. The Ministry and STARS discussed the situations where staff did not achieve tracheal tube placement on the first attempt to determine the cause(s) (e.g., accidently pulled out, fluid build up at the bottom of the tracheal tube).

Receiving regular reporting on quality of care indicators allows the Ministry to analyze performance information for helicopter ambulance services and to take timely action to address issues with quality of care.

Overall, for the two quarterly reports we reviewed, the quality of care indicators were reported as met 97% of the time.

3.3 Periodic Reporting on Quantity of, and Reasons for, Cancelling or Declining Helicopter Requests Received

We recommended the Ministry of Health receive periodic and detailed reporting on the number and reasons for cancelling or declining requests for helicopter ambulance services. (2019 Report – Volume 2, p. 174, Recommendation 7; Public Accounts Committee agreement January 11, 2022)

Status-Implemented

Since 2021–22, the Ministry of Health receives regularly reporting from STARS about the number and reasons for cancelling or declining requests for helicopter ambulance services.

Each quarter, STARS provides the Ministry with reports about its operations and activities, including the number of calls received, the number of missions, the number of patients transported, and the number of missions cancelled, aborted or declined.

The quarterly reports also explain why STARS declined a service request, and why it cancelled missions. For example, STARS may decline a request or cancel a mission when alternate transportation (e.g., ground ambulance) is used, weather prevents helicopter take off, or the helicopter is unavailable due to scheduled or unscheduled maintenance.

As illustrated in **Figure 3**, STARS' quarterly reports from October 2021 to September 2022 show 81% of uncompleted missions resulted from STARS being asked to stand down (e.g., ground ambulance used instead), and 16% of missions not accepted or declined resulted from STARS already on another mission.⁷ The 16% was consistent with the 2020–21 average of 15%.

⁷ Uncompleted missions include the helicopter lifting off and then grounded.

Figure 3—STARS' Reasons for Cancelling or Declining Service Requests and Missions from October 2021 to September 2022

Missions not completed (i.e., helicopter lifted off and then grounded)

- 29 times (19%) STARS reasons: 7 times helicopter diverted to another call, 1 time due to mechanical issues, and 21 times due to weather
- 123 times (81%) requester cancelled STARS (stood down): either transport not needed at all or another transport used (e.g., ground ambulance)

Requests for potential missions not accepted or declined

- 489 times (16%) STARS declined request due to already being on a mission
- 31 times (1%) STARS declined request due to maintenance required to meet new safety measure issued by the helicopter manufacturer
- 31 times (1%) STARS declined due to scheduled or unscheduled maintenance
- 23 times (1%) other reasons for declining transport (e.g., patient weight over 175 kilogram helicopter limit, aircraft required decontamination)
- 2,496 times (81%) STARS notified of possible mission but then cancelled by a requester because another transport (e.g., ground ambulance) used or no transport needed at all

Source: Adapted from information provided by STARS.

For the two quarterly reports we reviewed, we found the Ministry reviewed STARS' quarterly reports and discussed variances with STARS. For example, the September 30, 2022 quarterly report included two declined missions without an adequate description. The Ministry discussed the report with STARS and noted it declined both missions due to the pilot taking mandatory training.

Regularly analyzing declined and cancelled service requests and missions provides the Ministry with a better understanding of barriers affecting STARS' ability to respond. Such analysis increases the Ministry's awareness of potential risks or barriers for STARS to provide timely and appropriate air ambulance services in the province.