

Chapter 25

Cypress Regional Health Authority—Delivering Accessible and Responsive Ambulance Services

1.0 MAIN POINTS

Under *The Regional Health Services Act*, Regional Health Authorities (RHAs) are responsible for planning, organizing, delivering, and evaluating health services within their health region. In addition, *The Ambulance Act*, section 10(1) states, *the RHA board shall ensure that the health region receives adequate ambulance services.*

Cypress Regional Health Authority (Cypress RHA) strives to provide its residents with ground ambulance service that is timely and responsive. For the 12-month period ended August 31, 2016, Cypress RHA had, other than the following, effective processes for delivering accessible and responsive ambulance services.

Cypress RHA needs to:

- › Update its contracts with ground ambulance service providers. This would help support effective monitoring of contracted ambulance service providers.
- › Confirm ground ambulance operators operating in its region hold current operating licences. This confirms ambulances are safe to drive.
- › Analyze ambulance response times higher than target times to determine actions needed. This analysis will give Cypress RHA the ability to determine the reasons for delays in response times that may be contributing to negative patient outcomes.
- › Monitor and report on key measures for its ambulance services to its senior management, the board, and the public. This provides for transparency and accountability and help instill public confidence in the ambulance services in the region.

We also directed two recommendations to the Ministry of Health. The Ministry of Health needs to:

- › Work with regional health authorities (including Cypress RHA), to formally assess the distribution of ambulance services across the province. This would support the determination of optimal locations for ambulance services, understanding the ambulance staff required to serve their regions, and cost-effective use of ambulance services.
- › Consider updating *The Ambulance Act* related to contracted ground ambulance service providers to align with contract management best practices. This would allow RHAs to update, terminate, or renew contracts with ground ambulance service providers as required.

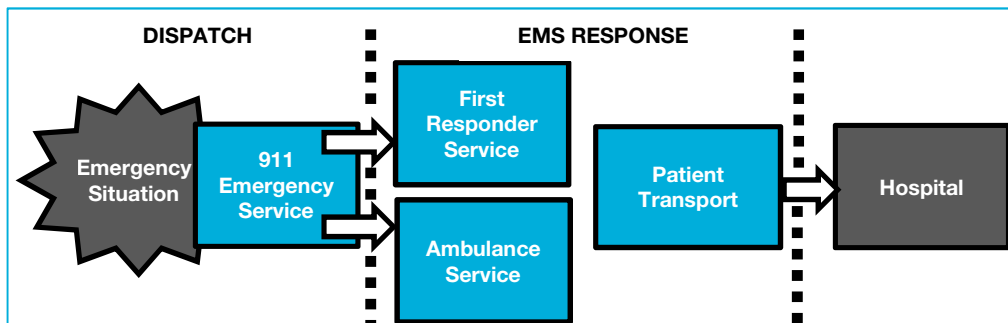
2.0 INTRODUCTION

Ambulance services provide patients with access to emergency medical services, and transportation to the care they need. In Saskatchewan, RHAs provide ground ambulance services.

2.1 Ambulance Services in Saskatchewan

Ambulance service is part of pre-hospital emergency services and inter-facility transfers, these are an essential component of public access to health services. As shown in **Figure 1**, when someone calls 911, in an emergency situation, their call triggers a series of actions and responses that involve several responders.

Figure 1—Pre-Hospital Response Chain



Source: Adapted from various sources by Provincial Auditor's Office.

Ambulance emergency response times are measured from the time of the call to when the ambulance arrives on scene. Generally accepted timeliness targets among EMS providers in Saskatchewan are 8 minutes 59 seconds in urban centres and under 30 minutes in rural areas.¹

911 Emergency Service

Saskatchewan's 911 emergency services have two main components—Public Safety Answering Points (PSAPs) and emergency dispatch centres.

PSAP staff answer emergency calls to 911 at one of Sask 911's four PSAPs located in Prince Albert, Regina, Saskatoon, and Lloydminster. The Prince Albert PSAP provides coverage for most of Saskatchewan; Regina, Saskatoon, and Lloydminster PSAPs each serve those within their respective city boundaries.

911 callers are to identify whether the emergency is related to fire, police, or ambulance. PSAP staff transfer calls for ambulance service to the appropriate emergency dispatch centre. For example, three ground ambulance dispatch centres (also referred to as EMS Communications Centre) are located in Prince Albert, Regina, and Saskatoon. The Regina Dispatch Centre provides services to all the RHAs in southeast Saskatchewan (i.e., Cypress, Sun Country, Regina Qu'Appelle, Five Hills, and Sunrise RHAs).

¹ Ministry of Health, *Fact Sheet*, (2016).

Dispatchers working in an EMS Communications Centre follow protocols based on the type of emergency and location. Using information provided by the caller, the dispatcher assesses the patient's alertness and supports patients requiring urgent care. The dispatcher uses the patient's care needs to determine the mode of transport, which could include road ambulance or STARS helicopter medical service, or a combination of these services.

Dispatchers also track key information on the response time standards set out in **Figure 2**.

Figure 2—2016 Established Provincial Response Times and Targets

In May 2016, a provincial sub-working group made recommendations to define, measure, and report on provincial ambulance response times. The group was comprised of staff from RHAs and the Ministry of Health. Based on the work of the group, the Ministry established the following response time standards and targets for Saskatchewan:

- ▶ **Alert Time** – the time it takes for the ambulance crew to be notified of a response by the EMS Communications Centre/Dispatch Centre; target is **less than 60 seconds** 90% of the time
- ▶ **Chute Time** – the time from when an ambulance crew is alerted of the call to when paramedic staff are in the ambulance responding; target is **less than 10 minutes in rural** locations 90% of the time and **less than 60 seconds in urban** locations with 90% of the time
- ▶ **Response Time** – the total time from when a call comes into the EMS Communications Centre until the ambulance crew arrives on scene. Response time includes alert, chute, and travel time. Target is **less than 30 minutes in rural** locations and **less than 9 minutes in urban** locations 90% of the time.

Source: *Provincial Response Time Reporting Standards* provided by the Ministry of Health.

Medical First Responder Service

Rural patients often receive support from volunteer medical first responders until an ambulance arrives. Medical first responders are also dispatched through the EMS Communications Centres.

The Ministry of Health registers medical first responders. It requires them to complete a 40-hour Canadian Red Cross training program before they can register with the EMS Communications Centre (or dispatch). Certification lasts for a two-year period, after which they must recertify.

Medical first responders are not paid positions. Cypress RHA, similar to other health regions, is responsible for the recruitment, co-ordination, education, and support of medical first responder groups.

Ambulance Services

Saskatchewan has both ground and air ambulance services. *The Ambulance Act* regulates the licensing and operation of ground ambulance services. It defines ambulance services as a service available for the conveyance and stabilization of patients and includes dispatching of ambulance; it does not regulate air ambulance services. It requires all ground ambulance service operators to hold a valid licence that the Ministry of Health is responsible for issuing.

The Saskatchewan College of Paramedics (College) licenses emergency medical personnel in Saskatchewan through four types of memberships:



- › Emergency medical responders (EMR)²
- › Emergency medical technicians (EMT)/primary care paramedics (PCP)³
- › Intermediate care paramedics (ICP)⁴
- › Advanced care paramedics (ACP)⁵

The College has continuing education requirements and mandatory training for licensed members.

Deployment of ground ambulances takes place in one of two ways:

- › Emergency call to 911
- › Inter-facility transports (e.g., between two hospitals, between a hospital and long-term care facility)—normally through the guidance of a physician who deems ambulance as appropriate transportation (i.e., in the best interest of the patient's health and well-being)

104 ground ambulance operators operate in 106 communities in Saskatchewan—51 are RHA owned and operated, 37 are private owned and operated, 14 are non-profit owned and operated, and 2 are owned and operated by First Nations communities.

Saskatchewan ground ambulance operators, on average, have low call volumes. 55 of the 104 ground ambulance operators respond to less than one call per day, and 10 respond to less than one call per week. As such, ambulance operators' staff are often on-call, or with less than full-time work arrangements.

Three air ambulance service operators operate within Saskatchewan as of August 31, 2016:

- › Shock Trauma Air Rescue Society (STARS)—a charitable, non-profit organization that provides air medical transportation for critically ill and injured patients by helicopter 24 hours a day; it receives some of its funding through the Ministry of Health
- › Saskatchewan Air Ambulance—critical care air ambulance service based at the Saskatoon airport, operated by the Saskatoon Health Region and administered by the Ministry of Health
- › Transwest Air—contracted private operator that provides transportation for basic to intermediate-level patients in northern Saskatchewan to the appropriate hospital; contracted by Mamawetan Churchill River RHA

² An EMR licence is the entry point to be licensed as a paramedic as it has the least educational requirements. EMRs are responsible for basic life support procedures, monitoring of minimal advanced life support procedures and are limited to administering basic life support medications.

³ EMTs/PCPs are the largest group of paramedic professionals in Saskatchewan. A licence at this level is a mid-point of licensure as a paramedic. EMTs/PCPs are also responsible for basic life support procedures, but have increased ability to assist, monitor and perform advanced life support skills and an increased ability to administer medications.

⁴ An ICP is a unique licence level to Saskatchewan and is another mid-point of licensure as a paramedic. They are responsible for basic life support procedures, have an increased ability to assist, monitor and perform advanced life support skills and an increased ability to administer medications as compared to the EMT/PCP licensure level.

⁵ An ACP licence is the highest licence level that can be achieved in Saskatchewan with the highest educational requirements that builds upon education received as an EMT/PCP or an EMT-A/ICP (Emergency Medical Technician-Advanced/ Advanced Intermediate Care Paramedic).

EMS Communications Centres and STARS dispatch staff decide whether to deploy STARS air ambulance. Physicians, along with the Provincial Air-Medical Co-ordination Centre, co-ordinate deployment of Saskatchewan Air Ambulance and Transwest Air.

3.0 IMPORTANCE OF AMBULANCE SERVICES

Ambulance services are a critical component of the provincial health care system, providing emergency lifesaving treatment and transporting patients to the necessary level of care. Ambulance services stabilize and improve patient condition at emergency scenes, and during transfers to and between healthcare facilities.

Accessible and responsive ambulance services are important because of the geographic spread and remoteness of some communities in rural Saskatchewan, including those in the region for which Cypress RHA is responsible.

To contribute to the best outcomes for patients, ambulance services in Cypress RHA require the combination of quick transport times with the provision of the appropriate level of care. The location and condition of the ambulance and the level of proficiency of the ambulance staff can influence transporting patients in a safe and timely manner.

Also, operation of ambulance services is a mixture of contracted and RHA-owned operators in Cypress RHA. As for any contracted service, use of contracted ambulance service includes additional dimensions of contract management for Cypress RHA—having adequate contracts, in addition to the active monitoring of the delivery and quality of service.

4.0 AUDIT OBJECTIVE, SCOPE, CRITERIA, AND CONCLUSION

The objective of this audit was to assess the effectiveness of Cypress Regional Health Authority's processes, for the period of September 1, 2015 to August 31, 2016, to deliver accessible and responsive ambulance services.

Because Cypress RHA is not responsible for air ambulance services, our audit did not assess air ambulance services. In addition, the audit did not assess the quality of care provided by emergency medical personnel.

To conduct this audit, we followed the standards for assurance engagements published in the *CPA Canada Handbook – Assurance*. To evaluate Cypress RHA's processes, we used criteria based on our related work, reviews of literature including reports of other auditors, and consultations with management. Cypress RHA's management agreed with the criteria (see **Figure 3**).

We examined Cypress RHA's policies and procedures, contracts, ambulance operator licences, checklists, reports, and other data related to ambulance services. We visited an ambulance operator site. We assessed Cypress RHA's processes for allocating resources, contracting and monitoring service providers, inspecting ambulances and equipment, responding to service calls, and monitoring ambulance service performance. We compared ambulance service processes in Cypress RHA with Alberta Health



Services because portions of Alberta have similar geography and demographics to the Cypress Health Region.

Figure 3—Audit Criteria

Processes to:
1. Set ambulance service delivery approach (e.g., contracted or directly owned)
1.1 Assess demand for ambulance services
1.2 Establish ambulance service expectations (e.g., response times, regional coverage) to guide and evaluate service
1.3 Allocate resources (ambulance staff, medical first responders, ambulances, equipment required)
1.4 Set policies and procedures to deliver ambulance services
1.5 Establish contracts with third-party service providers (e.g., dispatch, ambulance operators)
2. Deploy ambulance services in a timely manner
2.1 Receive pertinent information from dispatch
2.2 Maintain ambulances and equipment in good working condition
2.3 Retain qualified ambulance staff and medical first responders
2.4 Respond to service calls within target timeframe
2.5 Transport patients to level of care needed (including transfer from ambulance staff to hospital staff)
3. Monitor ambulance service performance
3.1 Collect information on ambulance service performance
3.2 Compare results against expectations and address areas where improvement is needed
3.3 Take corrective action on critical incidents and complaints
3.4 Report results to senior management, the Board, and the public

We concluded that for the 12-month period ended August 31, 2016, Cypress Regional Health Authority had, other than the following areas, effective processes to deliver accessible and responsive ground ambulance services. Cypress Regional Health Authority needs to:

- › **Update its contracts with ground ambulance service providers (after contract constraints in legislation are addressed by the Ministry of Health)**
- › **Confirm ground ambulance operators operating in its region hold current operating licences**
- › **Analyze ambulance response times higher than target times to determine actions needed**
- › **Monitor and report on key measures for its ambulance services**

In addition, the Ministry of Health, in conjunction with regional health authorities, needs to formally assess the distribution of ambulance services across the province.

5.0 KEY FINDINGS AND RECOMMENDATIONS

In this section, we describe our key findings and recommendations related to the audit criteria in **Figure 3**.

5.1 Province-Wide Assessment of Ambulance Services Needed

Effective ambulance service delivery strives to provide every patient with the right care at the right time. To do this, Cypress RHA must understand patient demand for services,

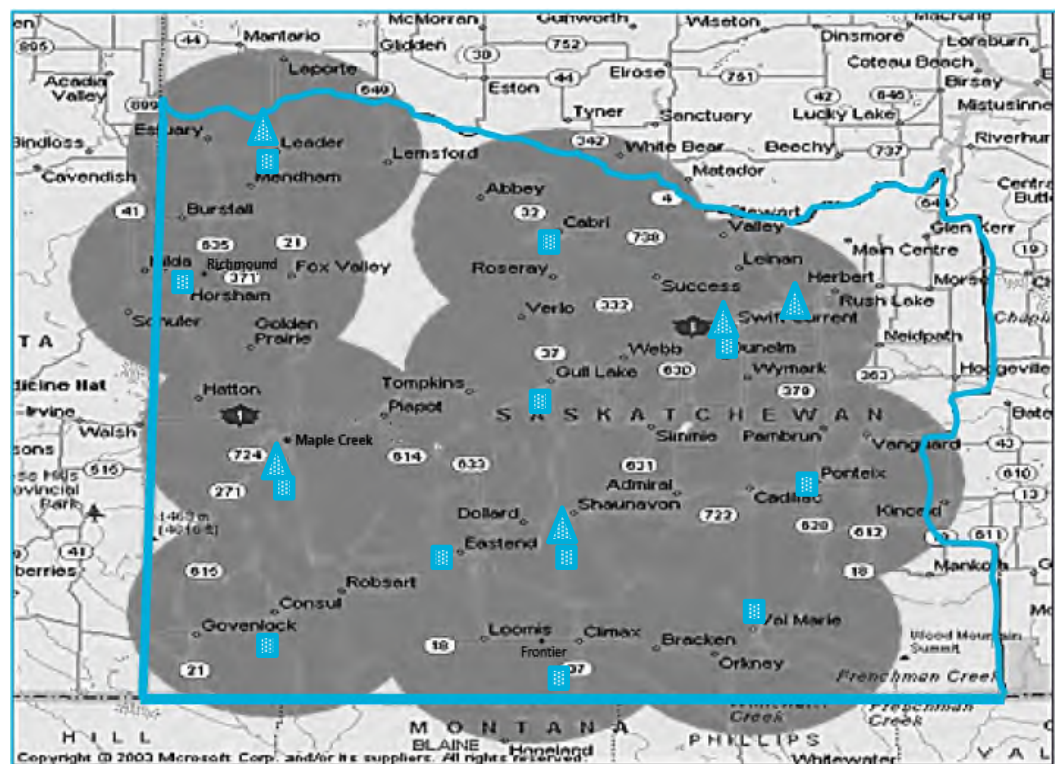
define timely service, and then know whether it is meeting demand in an effective manner.

Better Understanding Future Patient Demand Needed

In 2015, Cypress RHA had a population of 44,897 residents.⁶ This population is spread over a land mass of approximately 44,000 square kilometres. The only urban centre in Cypress RHA is Swift Current with a population of 17,826. Its next largest communities include Maple Creek (3,068), Shaunavon (2,324), Gull Lake (1,355), Leader (1,135), and Herbert (934). Each of these communities has ambulance service operators with the exception of Herbert. As shown in **Figure 4**, hospitals reside in Swift Current, Maple Creek, Shaunavon, Leader, and Herbert.

To provide a 30-minute response time for rural areas, Cypress RHA has located ambulance operators throughout various parts of region (see **Figure 4**). As a result, Cypress RHA has ambulance services in 12 communities using a mix of RHA-owned ambulances and contracted ambulance service providers. The number of ambulance operators in the region has remained the same since 2002.

Figure 4—Cypress RHA 30-Minute Response Coverage Map



Source: Cypress RHA's website.

 Hospital  Ambulance service

We found Cypress RHA monitors, on a limited basis, historical patient demand and overall response times relative to ambulance operator location. Even though Cypress RHA receives information from the Ministry of Health, Cypress RHA analysis of it is limited.

⁶ Ministry of Health Covered Population Report, (2015).



Each year, the Ministry of Health gives Cypress RHA ambulance performance information, including response times and total number and type of ambulance service calls. Based on Ministry of Health performance information for 2014-15, Cypress RHA responded to 3,826 ambulance service calls (see **Figure 5**). Emergency responses⁷ made up about 39% of total calls. Other service calls mainly relate to patient transfers (inter-facility transports).

Figure 5—Calls for Ambulance Services for 2014-15 in Cypress RHA

Community	Ownership	Total Service Calls	Average number of calls per week	Emergency Calls	Emergency Calls as % of Total
Cabri	RHA	67	1.29	29	43.3%
Consul	RHA	28	0.54	14	50.0%
Eastend	RHA	117	2.25	38	32.5%
Frontier	Contracted	93	1.79	38	40.9%
Gull Lake	Contracted	153	1.79	60	39.2%
Leader	RHA	202	3.88	57	28.2%
Maple Creek	RHA	430	8.27	119	27.7%
Ponteix	Contracted	180	3.46	91	50.6%
Richmound	RHA	42	0.81	18	42.9%
Shaunavon	RHA	227	4.37	81	35.7%
Swift Current	Contracted	2,266	43.58	625	27.6%
Val Marie	Contracted	21	0.40	11	52.4%
Total		3,826	73.58	1,181	39.0%

Source: Ministry of Health data; 2015-16 service call data was not available at August 2016.

In addition, Cypress RHA has not evaluated population projections or demographics for the various areas of the region to determine where the greatest need for future ambulance services may come. Also, Cypress RHA does not analyze costs per service call.

Figure 5 shows the number of service calls that each operator receives varies significantly from a low of 21 calls in Val Marie to a high of over 2,000 in Swift Current. Six ambulance operators respond to less than two calls per week on average. Three ambulance operators respond to less than one call per week on average. Because of low call volumes, the emergency medical personnel of these ambulance operators are employed on an on-call basis.

Use of ambulance services for emergency calls in low call volume areas differs from current practice in Alberta. In Alberta, where call volumes are on average only 20 calls per year in a community, volunteer medical first responders are located in the community rather than ambulance services to provide timely assistance to those with a medical emergency. Alberta Health Services does support this Medical First Responder (MFR) program through registration in the provincial database, medical oversight, training and supply re-stocking.

⁷ An emergency response call is when lights and sirens are required versus a non-emergency call which may include transfer of a stable patient from one hospital to another for diagnostics or treatment.

In 2014-15, Cypress RHA spent \$4.8 million on ground ambulance services including \$1.9 million to contracted ambulance service providers (2015-16: \$5.0 million total and \$2.1 million to contracted ambulance service providers). We determined that, on average in 2014-15, the cost of service calls across the region ranged from \$476 to \$7,082 per operator with an overall average cost per call of about \$2,400.⁸

While Cypress RHA is aware other RHAs face similar challenges in delivering ambulance services over a large sparsely populated area, it has not worked with them to share experiences and best practices on ambulance service delivery and approaches. For example, according to Heartland RHA's website, Heartland RHA provides emergency services to a population of 44,567 people over an area of 41,770 square kilometres (which is a comparable size to Cypress RHA). Heartland RHA has EMS services located in 16 communities as compared to Cypress RHA's 12. Cypress RHA was not aware of the reasons for the differences in the number of ambulance service operators.

All RHAs provide ambulance services. The Ministry of Health provides each of them with funding to cover most of their ambulance service costs, with the RHAs recovering the remaining costs through fees billed to patients and/or their insurers for use of ambulance services. As the primary funder, the Ministry has a vested interest in cost-effective delivery of ambulance service costs, and as such it could help RHAs understand why differences in ambulance service costs and delivery exists for similar populations and geographic areas, and share best practices.

The Ministry, along with the RHAs, could consider whether the current distribution of ambulance services across the province are set up to effectively meet future patient needs. They could also consider the impact of regional boundaries on that distribution.

Without a comprehensive review of patient demand relative to ambulance services, there is a risk that the Ministry and RHAs are not making the best use of resources.

1. We recommend that the Ministry of Health, along with regional health authorities, formally assess whether the distribution of ambulance services are optimal for responding to patient demand.

Ambulance Response Time Targets Set

Accessible and responsive ambulance services can be challenging because of the geographic spread and remoteness of some communities in rural Saskatchewan, including Cypress RHA. There are no Canadian or Saskatchewan regulated standards on ambulance response times (rural or urban). Rather, provincial target response times in Saskatchewan, set by the Ministry of Health, are 8 minutes 59 seconds in urban centres and under 30 minutes in rural areas.⁹

Cypress RHA, along with other RHAs in the province, has adopted the Ministry of Health's response time targets. It aims to meet those timeliness targets 90% of the time. Swift Current is the only urban centre in Cypress RHA.

⁸ Calculated by dividing total expenses by operator for the year over total call volume.

⁹ Ministry of Health, *Fact Sheet*, (2016).



Alberta takes a similar approach in setting response time targets. In Alberta, like Saskatchewan, response time targets change depending on patient location (urban or rural).

5.2 Rationale for Allocating RHA-Owned Ambulances and Staff Needs Revisiting

At August 2016, as shown in **Figure 5**, Cypress RHA directly provides ambulance services in seven communities, with two or more RHA-owned ambulances in each community.

As shown in **Figure 5**, in 2014-15, communities with RHA-owned ambulances responded to about one to eight service calls per week, on average.

Although it usually maintains two ambulances in most RHA-owned operations, Cypress RHA, because of the low call volume and cost considerations, only schedules one ambulance crew at a time to each operation. A crew consists of two licensed emergency personnel on call. For one RHA-owned operation, a crew consists primarily of emergency medical responders (EMRs). EMRs can administer basic life support; whereas primary care paramedics (PCPs) can perform advanced life support skills.

Staffing only one ambulance crew at a time at each RHA-operation means, while the RHA has multiple ambulances available and maintained, only one ambulance at a time can be used to deliver services (either an emergency event or to perform a patient transfer [e.g., transporting a patient from Swift Current to Regina or Saskatoon]).

Cypress RHA recognizes timely ambulance care is integral to positive patient outcomes for patients that are experiencing life threatening conditions.

To manage the availability of ambulances in communities where it staffs only one ambulance, Cypress RHA uses two approaches.

- › Where the RHA-owned ambulance is handling an emergency and the community receives a second call that is an emergency, dispatch uses another ambulance operator from another community to respond to the emergency call. Cypress RHA recognizes this approach results in increased response times.
- › In situations where the RHA-owned ambulance is handling a patient transfer, it places another RHA-owned ambulance (e.g., from Leader, Richmond, and Maple Creek) in between various communities (e.g., halfway between Leader and Maple Creek) to provide ambulance coverage for both communities. While this approach results in increased response times for the home community, it decreases the response time for the community where its ambulance is handling a patient transfer.

We found Richmond's response time compliance rate (for a 30-minute response time) was 69% in 2015-16 for all its emergency responses because many of its responses are taking place in Maple Creek and Leader coverage areas.

Cypress RHA does not have any Advanced Care Paramedics (ACPs) in the region. Cypress RHA has not reviewed the location of its ambulance operations, and ambulance staff levels and skills relative to workloads across the region for several years, or

determined whether its staffing model reflects best practice. It has not considered whether it has the right emergency medical personnel in the right locations to best meet patient needs (see **Recommendations 1 and 7**).

5.3 Update of Contracts with Ambulance Service Providers Needed

As noted in **Figure 5**, Cypress RHA uses five contracted service providers to help provide ambulance coverage in the region. Cypress RHA has written contracts with each of its contracted ambulance service providers.

Cypress RHA renewed the contract with one service provider in 2016. It established the contracts with each of the four other service providers over 20 years ago. It had not renewed or updated the terms of the contracts since then.

We found that these five contracts do not include service quality expectations (e.g., response time targets, compliance with applicable RHA policies). They do not require service providers to share key information (such as complaints they had received or incidents they had experienced, submit completed incident reports)¹⁰ with Cypress RHA to help it monitor and improve ambulance service delivery. One service provider we met was unaware of the Cypress RHA's 30-minute target response time.

To monitor contracted ambulance service providers, Cypress RHA management periodically visits each of them to observe and discuss operational issues.

Incorporating service quality expectations into contracts would help contracted ground ambulance service providers understand the service Cypress RHA expects of them. In addition, it would assist Cypress RHA to monitor the effectiveness of ambulance services they deliver and hold them accountable for the quality of service they provide.

2. We recommend that Cypress Regional Health Authority update its contracts related to the provision of ground ambulance services to include service quality expectations and periodic reporting on them.

The Ambulance Act (Act) recognizes that the use of contracted ambulance services providers helps provide adequate ambulance coverage. The Act, which came into effect in 1989, contains detailed provisions over the continuance, renewal, and terminations of contracts between RHAs and ambulance service providers (sections 10 and 18). For example, under the Act, these contracts automatically renew upon expiry; RHAs can only terminate them with just cause.

Having these provisions in law is unique and not consistent with contract management best practices. Efficient contract management requires timely planning for contract expiry. A contract management plan should contain steps to take before a contract expires, including determination of what approach will obtain the best value for money:

¹⁰ Cypress RHA policy requires its staff to submit incident reports for delays in response times (e.g., over 30 minutes).



extending or renewing the contract, or re-approaching the market under a new procurement process.¹¹

The Minister of Health is assigned responsibility for this Act. The Legislative Assembly last changed provisions in this Act related to contracts with ambulance service providers in 2009. Cypress RHA finds these legislated provisions make it difficult to update contract terms and change how its uses ambulance service providers (e.g., the number or location of operators). In order to remain relevant and contribute to effective contract management, the Ministry of Health would need to revisit *The Ambulance Act*.

3. We recommend that the Ministry of Health consider updating *The Ambulance Act* related to contracted ground ambulance service providers to align with contract management best practices.

5.4 Confirmation Needed that Ambulance Operators Licences Are Current

Cypress RHA was not sufficiently monitoring whether ambulance operators met all licensing requirements.

The Ambulance Act requires an ambulance operator to hold a valid ambulance licence issued by the Minister of Health (s.30). Regulations under this Act expect the Board of the RHA to receive a copy of any ambulance licence issued to operators operating in its region. They also expect operators to display a copy of their current licence.

In addition, Cypress RHA's contracts with ambulance service providers require ambulance operators to hold a valid ambulance licence.

For the Ministry of Health to issue an ambulance licence, the law requires ambulance operators to have:

- › A current SGI ambulance vehicle inspection (for all ambulances owned and operated)
- › A current vehicle registration (for all ambulances owned and operated)
- › A completed road ambulance equipment checklist
- › Current public liability and malpractice insurance

Ambulance licences are valid for one year.

Cypress RHA does not have a process to confirm ambulance operators, either under its employ or with a contracted ambulance service provider, hold a current ambulance licence. It does not make sure its Board receives a copy of the current ambulance licence or operators display their current licences as the law expects.

¹¹ Queensland Government, *Extending and Renewing Contracts*, (2014),

Cypress RHA did not obtain information or know if the ambulance service providers had recent SGI ambulance inspections on their ambulances. Annual ambulance inspections confirm ambulances are properly maintained and safe to drive.

For eight ambulance operators we tested in late July 2016, the licences of five ambulance operators had expired in April 2016. For these operators, we determined whether each ambulance operator had current SGI ambulance inspections. We found SGI had inspected all ambulances in use within the past year. We also found the Ministry of Health had not obtained this information as part of its ambulance licence renewal process. We think it should.

Confirming ambulance operators hold current ambulance licences confirms that ambulances are safe to drive and all required equipment is on board ambulances.

4. **We recommend that Cypress Regional Health Authority confirm ground ambulance operators operating in its region hold current ambulance licences.**

5.5 Ambulances and Equipment Properly Maintained

Cypress RHA has numerous policies related to ambulance services covering areas including: ambulance vehicle operation, restocking supplies, continuing education, patient transfers, and dispatch notification. It makes these policies available to staff through its internal website. Contracted service providers are not formally required to follow RHA policies (see **Recommendation 2**).

In addition, Cypress RHA has minimum ambulance standards that staff must follow so that RHA-owned ambulances have the necessary equipment in good working order. It stocks its ambulances with equipment as required in *The Ambulance Regulations* (Regulations), and restocks supplies upon completion of each service call.

Cypress RHA monitors mileage of all ambulances in the region. It considers age and the extent of ongoing maintenance required on RHA-owned ambulances to identify ambulances in need of replacement (as part of the capital funding request process) or major maintenance.

As management is alerted of the progress of every ambulance response in the region, it becomes aware of any ambulance break downs during a response to a service call immediately. There were no such instances in 2016.

For a sample of RHA-owned ambulances, we found maintenance took place regularly. Also, we confirmed that SGI had inspected all ambulances operating in the region in 2016; each passed inspection.

Cypress RHA has standardized the location of many of its supplies across all of its RHA-owned ambulances. Standard location of supplies makes it easier for part-time and casual emergency medical staff to find supplies in any ambulance.



RHA-owned ambulance operators conduct periodic (daily, weekly, monthly) checks on equipment and supply inventory levels and record these checks on tracking sheets (tracking sheet). They are to record the expiry date of inventory, where necessary, and remove expired items from stock. Contracted providers also conduct periodic checks on their equipment and supply inventory levels using tracking sheets as well.

We found tracking sheets aligned with the Regulations. We also found ambulance operators complete the sheet when required. However, we noted in a few cases, operators did not complete the sheet properly. For example, not all items on the tracking sheet were checked off.

Cypress RHA management periodically visits all ambulance operators and monitors the completion of tracking sheets. We encourage management to more closely monitor whether all items are checked off the sheet at the appropriate intervals.

5.6 Ambulance Staff are Properly Qualified and Trained

A significant component to providing timely and accessible ambulance services is the capacity to retain qualified personnel. Emergency medical personnel (e.g., EMRs, paramedics) and volunteer medical first responders are to stabilize and transport patients to the nearest hospital or primary care centre.

Cypress RHA employs two full-time primary care paramedics. Most EMRs/paramedics employed by Cypress RHA are employed on a part-time or casual basis and on call. It pays staff on call a remuneration of \$5.00 per hour. In common with other RHAs, Cypress RHA finds recruiting and retaining part-time and casual emergency medical personnel challenging. It notes it could benefit from sharing of best practices of other RHAs in this area of staffing (see **Recommendation 1**).

Cypress RHA provides its staff and those of its contracted service providers with opportunities to fulfill their Saskatchewan College of Paramedics licensing requirements. It keeps track of who participates in its training events. For example, it offers an online training program nine times a year. It requires new EMRs/paramedics it employs to undergo orientation, training days with their manager, and site-specific training (which allows them to become familiar with the community).

Our review of the list of all EMRs/paramedics working for both Cypress RHA and contracted providers found them all to be in good standing with the Saskatchewan College of Paramedics.

In common with other RHAs, Cypress RHA also uses the medical first responder service. In 2015-16, medical first responders were dispatched in Cypress RHA 116 times.

Periodically, Cypress RHA supports medical first responder certification training to recruit and educate volunteer medical first responders. The most recent medical first responder certification training held in Cypress RHA was in 2015. 158 people located throughout the region completed the training and became licensed. As noted in **Section 2.1**, certification lasts for a two-year period.

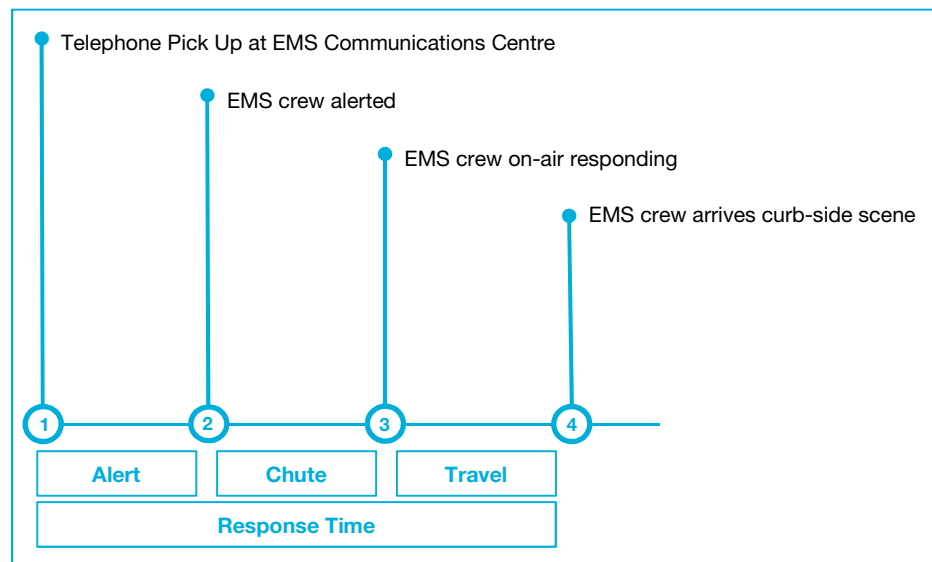
For a sample of medical first responders operating within the Region, we found they were all certified.

5.7 Overall Target Response Time Not Always Met

Cypress RHA contracts Regina Qu'Appelle (RQRHA) for 24-hours dispatch services. RQRHA provides these services through its Dispatch Centre.

Dispatch services include 911 call receiving and call evaluation (counted as alert time). As noted in **Section 2.1**, Saskatchewan's emergency dispatch centres (also referred to as EMS Communications Centres) track response call time performance intervals (see **Figure 6**). They use an IT system to do this.

Figure 6—Response Call Time Performance Intervals



Source: Adapted from *Provincial Response Time Reporting Standards*. See **Figure 2** in **Section 2.1** for a description of the response times and Saskatchewan's provincial targets.

In addition, using IT systems, dispatch centres can identify the location of the medical emergency and the location of the closest ambulance. See **Figure 7** for a summary of technology that Saskatchewan dispatch centres use at August 2016.

Figure 7—Technology Saskatchewan Dispatch Centres Utilized at August 2016

- › Provincial map – a provincial map that allows EMS dispatch to locate a visual route to the emergency call, determine where the closest available ambulance is, and provide ambulance crews with directions
- › Integrated Reporting Tool – all information captured at the dispatch centre can be used to develop reports and provide information on specific events or overall system performance

Source: Adapted from information provided by RQRHA Dispatch Centre.

We found its contract with RQRHA included performance expectations and regular reporting requirements; the contract expired in 2013.



Radios – Primary Means of Communicating with Ambulance Operators

In Cypress RHA, radio communication is how RQRHA Dispatch Centre communicates with ambulance operators, and how Cypress RHA management and ambulance operators primarily communicate. Radio communications follow established protocols.

Once the RQRHA Dispatch Centre determines the location of a person in need of emergency ambulance services, it contacts Cypress RHA's closest ambulance operator by radio and maintains communication throughout the response. Cypress RHA management is notified by radio when an emergency response occurs and can monitor (and participate if needed) these radio communications. In addition, Cypress RHA automatically receives an email from RQRHA Dispatch Centre at the completion of the response. This email outlines the length of each response call time interval (e.g., alert, chute, and travel time). See **Figure 6** for description of each interval.

Additional Monitoring of Response Time Needed

We found Cypress RHA management focused its monitoring of response time on the achievement of the chute time target (i.e., less than 10 minutes 90% of the time). Chute time is the time from when an ambulance crew is alerted of the call to when paramedic staff are in the ambulance responding. Because most ambulance crews are on-call throughout Cypress RHA, chute time can take additional time.

In 2015-16, Cypress RHA had met the chute time of 10 minutes or less 3,651 times out of the 3,826 responses (95% compliance rate). It met its target.

Other than for Swift Current, Cypress RHA did not formally monitor alert or travel time on a regional basis or by ambulance operator. As shown in **Figure 8**, in 2015-16, Swift Current handled just over 1,100 emergency service calls (about 58% of the total number of calls). For Swift Current, each month, Cypress RHA management receives and reviews compliance reports on response times. It gets these reports from RQRHA Dispatch Centre.

For the remaining ambulance operations, it only monitored alert and travel time on a call-by-call basis through its review of the email from RQRHA Dispatch Centre at the completion of each response. In 2015-16, those operators responded to over 800 emergency service calls. Cypress RHA does not request or receive compliance reports for these operators.

Compliance rate is the degree to which each ambulance operator was able to meet the target response time, be it rural or urban.

We obtained response time compliance reports for all ambulance operators in Cypress RHA from the RQRHA Dispatch Centre. **Figure 8** provides response times for emergency calls by ambulance operator. We found the following, in 2015-16:

- RQRHA Dispatch Centre had alert time of less than 60 seconds, 78% of the time—below the target alert time of less than 60 seconds 90% of the time. The longest alert time was 120 seconds.
- Cypress RHA's response compliance rate as a region was 83%—below the target 90% compliance rate.

- › 3 of 12 ambulance operators met the target 90% compliance response rate (Swift Current, Frontier, Gull Lake)—all contracted ambulance service providers.
- › 5 of 12 ambulance operators had compliance response rates between 80% to 90%—4 of which are RHA-owned.
- › The compliance rates of the remaining 4 ambulance operators ranged between 60% to 69%—this includes operators located in communities along the region’s border with locations that are not accessible within 30 minutes by ambulance (e.g., Ponteix had a number of emergency calls from Mankota, which takes closer to 45 minutes to reach from Ponteix).

Twenty-five responses across the region exceeded a one hour response time—this included responses from both RHA-owned and contracted operators.

Figure 8—2015-16 Cypress RHA Response Times for Emergency Calls by Ambulance Operator

Community	Emergency calls	Number of Emergency Calls in excess of response target	Compliance rate %
Cabri	42	13	69
Consul	21	7	67
Eastend	57	8	86
Frontier	35	2	94
Gull Lake	87	6	93
Leader	85	17	80
Maple Creek	179	28	84
Ponteix	101	40	60
Richmond	39	12	69
Shaunavon	157	32	80
Swift Current ^A	1,152	80	93
Val Marie	17	2	88
Total	1,972	247	83

Source: RQRHA Dispatch Centre data reports.

^A Swift Current includes both rural and urban response times.

Cypress RHA does not have analysis to know why responses took longer than expected or planned actions to improve the compliance rates of ambulance operators not achieving targets.

For example, it does not know if not having on-board computers in ambulances contribute to delays in finding the location of the emergency. **Figure 9** sets out some technology available for ambulances, but not being used by Cypress RHA. For example, Alberta has mobile data terminals and GPS technology on each ambulance.

**Figure 9—Technology Available For Ambulances But Not Used by Cypress RHA**

- › Mobile data terminals – computers inside ambulances that can receive event information, transmit status of the responding ambulance, and provide the fastest route for the ambulance to respond
- › Automatic Vehicle Locating – global positioning system (GPS) technology that could tell dispatch where the ambulance is on route to a call

Source: Adapted from information provided by RQRHA Dispatch Centre.

In addition, Cypress RHA does not know if response time delays are a result of ambulances not being readily available because of the time ambulance staff spend at emergency hospital departments. Ambulance staff cannot leave the hospital until the care of a patient is formally transferred to hospital staff.

At August 2016, Cypress RHA does not track how long it takes to transfer ambulance patients to hospital staff. Management indicated it had plans to require paramedics to record when they arrive at hospital or healthcare facility with a patient and when they are clear of a patient. It expected to implement this process in late 2016.

In addition, Cypress RHA is not enforcing its incident reporting policy which requires the ambulance operators to complete an incident report when there is a delay in response time. As noted in **Section 5.3**, contracted ambulance service providers are not required by contract to submit these reports.

We found the 2015-16 compliance reports for the region included instances (e.g., 247 emergency calls in excess of response target) where emergency responses times exceeded 30 minutes (both RHA-owned and contracted operators). Cypress RHA was unable to provide us with the related incident reports.

Without detailed analysis of trends, Cypress RHA does not know the extent of excessive response times that need addressing and reasons for delays that may contribute to negative patient outcomes.

5. We recommend that Cypress Regional Health Authority monitor response times against targets for all ground ambulance operators on a regular basis (e.g., monthly or quarterly).

6. We recommend that Cypress Regional Health Authority follow its established policy to obtain completed incident reports (for instances when ground ambulance response times do not meet targets) so it can determine required actions.

5.8 Performance Reporting and Analysis Needs Improvement to Support Timely and Accessible Ambulance Services

Cypress RHA gave its senior management, its Board, and the public limited information on how well it delivered its ambulance services.

Senior management and the Board receive summary reports of complaints and incidents that are reported. In our review of these reports, we found limited incidents and complaints related to ambulance services.

While it has adopted the provincial targets for response times (see **Figure 2**), we found senior management and the Board did not receive periodic comparisons of actual response times against the targets.

In addition, we noted Cypress RHA's *2015-16 Annual Report* did not discuss the quality of its ambulance services or the challenges it faces in the delivery of those services.

As shown in **Figure 10**, Alberta publicly reports on its delivery of ambulance services, including response times along with other factors like EMS hospital times, vital signs, and patient experience.

Figure 10—Alberta Health Services EMS-Specific Publicly Reported Measures

Alberta publicly reports on the following EMS-specific performance measures:

- ▶ Time to Dispatch Ambulance (90-second target) – time from when the call comes in to dispatch and ends when the closest ambulance crew is allocated
- ▶ Response Times (12-minute urban and 40-minute rural target) – time from when a call is received to when an EMS crew arrives on scene—for certain areas, Alberta posts these on the Alberta Health Service website
- ▶ EMS Hospital Times (1 hour 30-minute target in Edmonton and Calgary) – time from when an EMS crew arrives at a hospital emergency department until that crew is available to respond to another call
- ▶ Vital signs compliance (90% compliance target) – sets out compliance with a protocol that requires primary set of vital signs must be performed on patients
- ▶ Patient experience (90% satisfaction target) – surveys a sample of patients transported by EMS each quarter about their EMS experience

Source: Alberta Health Services website; www.albertahealthservices.ca/ems/ems.aspx (12 October 2016).

Without measuring key performance results, Cypress RHA does not know if it is delivering timely and quality ground ambulance services.

7. We recommend that Cypress Regional Health Authority report to senior management, the Board, and the public actual results against key measures to assess the success of its ground ambulance services at least annually.



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