The Financial Burden of Unnecessary Primary Care in the Hospital Emergency Department: Is there a solution?

By

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Introduction:

The government of Alberta is responsible for the bulk of the costs of providing healthcare services to Albertans.[1,4] Managing primary care patients in the Emergency Department[ED] has been documented as unnecessary and expensive.[1,22,23]

Each year, the government of Alberta devotes about 35% of its budget to healthcare services.[2,14] In 2022-2023, Alberta paid 21.93 billion Canadian dollars. This is the equivalent of the annual budget of some countries like Ghana (2022 total national budget of about 16.8 billion Canadian dollars). [2,3]

Emergency Department (ED) is commonly used for management of patients whose needs could be managed in the nonhospital setting.

The ED is one of the major forms of accessing healthcare services in Alberta aside from primary healthcare facilities. [1,7] Financial support for the ED accounts for a significant portion of the costs of running a hospital. Hospitals accounted for about 46% of the 2013 healthcare costs in Alberta[1,7] On the other hand, Community Clinics provide the bulk of the primary healthcare services in Alberta.[4] Unlike EDs that are funded by the government through Alberta Health Services (AHS), primary care facilities, like Community Clinics (CCs), are mostly managed by private owners who get reimbursed for the services they provide to their patients through the Alberta Health Care Insurance Plan (AHCIP) which is funded by the government of Alberta. Some services are reimbursed privately or through non-government third party payers.[5]

The major medical databases including Cochrane, DOAJ (Directory of Open Access Journals), PLOS (Public Library of Science) and PubMed, yielded no studies that compared costs of services at privately owned primary healthcare facilities compared to similar services provided by emergency departments managed by the AHS. Information from such data may assist the government in formulating policies that can reduce costs without comprising the quality of services.

Wetaskiwin is a city of about 13,000 residents in Central Alberta excluding the population of the surrounding communities. It's Community Hospital sees 25,000 emergency department visits per annum.[6] During the reviewed period, the emergency department of the Wetaskiwin Hospital was staffed mostly by physicians that were General Practitioners (GPs) and specialists in Family Medicine (FPs). The Alberta Health classifies these two groups of physicians into the same General Practice (GP) skill category for the purpose of reimbursement. [5,17] In this review, we referred to

both categories as FPs for ease of analysis and reporting. The majority of the FPs that staffed the ED at Wetaskiwin Hospital also provided primary care services to the people of Wetaskiwin community, during the review period, at four privately owned community clinics in Wetaskiwin. Medics Clinic was one of such privately owned community clinics since 2013.[8]

Patients that were managed in Emergency Departments in Canada during the reviewed period, including Alberta, were triaged into five different acuity levels using Canadian Triage and Acuity Scale (CTAS) scores 1 to 5.[9] **[TABLE 1]**

CTAS score level 1 represents patients requiring resuscitation and they are the ones with conditions that are threatening to life or limb or those with imminent risk of deterioration requiring aggressive interventions;

level 2 patients are emergent patients or patients that have conditions that are potentially threatening to life, limb or function, requiring rapid medical intervention;

level 3 patients are urgent patients that have conditions that may deteriorate into more serious problems requiring emergency intervention and may be associated with significant discomfort or may affect ability to function at work or in activities of daily living;

level 4 patients have less urgent conditions that may relate to patient's age, distress, or may have potential for deterioration that may benefit from intervention or reassurance within one or two hours while

level 5 patients are those with non-urgent conditions that may be acute or conditions that may be part of a chronic problem with or without evidence of deterioration which may

require investigations or interventions that may be delayed or even referred to other provider or facility.[9]

Many of the patients triaged as levels 4 and 5 and some of those triaged as level 3 were stable enough and could have been safely managed in community clinics by FPs, within the studied period.[9]

Effective from 2017, the reimbursements for the Health Service Codes (HSCs) for services provided at Wetaskiwin Hospital Emergency Department (ED) were changed to HSCs that were used for services provided at emergency departments with annual visits of 25,000 and above in Alberta.[10] This means data from this type of study from Wetaskiwin Hospital ED could reasonably reflect the reality at bigger communities like Red Deer, Edmonton, Calgary, etc, thus reflecting the potential importance of this study for healthcare policy makers.[10,11]

03.04A is the HSC for physician comprehensive assessment of a patient managed in a privately owned community clinic and this covers the professional fee for the physician plus the cost of running the practice.[11,12] Considering the fact that most privately owned community clinics operate during regular working hours from 7am to 5pm (07:00 – 17:00 hours), 03.04F is the equivalent HSC for physician's comprehensive assessment of a patient managed in the ED of Wetaskiwin Hospital between 07:00 – 17:00 hours of weekdays during the reviewed period.[11,13]

In 2013 and 2014, 24,706 of the ED visits of Wetaskiwin County's residents were CTAS 4 and 5 scores while in Alberta, 1,207,003 ED visits were CTAS score 4 and 5 for the same period.[16] The government of Alberta had not released similar data for more recent years like 2021 or 2022 at the time of this study.

Based on the Alberta Health (AH) reimbursement policies, billing for a patient that was managed in a community clinic had certain limitations that were different from billing for similar patient that was managed at an emergency department with similar level of complexity of assessment and management. [11]

The Minister of Health of Alberta regularly determined how much hospital billed patient per ED visit if such patient had no AHCIP coverage while the costs of ED services provided to patients with AHCIP coverage were covered in the annual budget of each hospital.[14,15]

Objective:

Analyze the cost of providing healthcare services by FPs to Albertans at privately owned Community Clinic versus at Emergency Department.

Lower the costs of caring for Albertans without compromising the quality of healthcare services.

Method:

We reviewed the nurses' documented Canadian Triage and Acuity Scale (CTAS) scores of 1,780 randomly selected emergency department visits of the patients that were managed by a community Family Physician (FP) who practiced at the Wetaskiwin Emergency Department (ED) and who also practiced at Medics Clinic, one of the Community Clinics in Wetaskiwin, between November 2021 and October 2022.

We grouped the CTAS scores 1 to 5 into two broad categories. The first category was CTAS scores 1 to 3, which represented patients that were very sick to moderately sick and could best be managed in conventional ED setting while the second category was CTAS scores 4 to 5 representing

hemodynamically stable patients that were stable enough to be managed in Community Clinics.[9] Some of the CTAS 3 patients might also be safely managed in Community Clinics, though this observation had no impact on our analysis.[9]

We also reviewed the International Clinical Diagnosis series 9 (ICD-9) codes and final disposition of the patients in CTAS 4 to 5 category to ensure that such patients could be managed safely in the community clinic.

We compared the CTAS scores and ICD-9 codes of the sampled ED visits with the similar patients' visits managed by the same FP at Medics Clinic within the same period and compared the billable HSCs for the services provided by this same FP at these two different facilities. The only major difference was the facility where these encounters took place – the emergency department versus managing such patients by the same FP at a community clinic.

Patients with CTAS scores of 4 and 5 are billable with HSCs 03.04s.[17] At Wetaskiwin Hospital ED, such HSCs during the reviewed period were 03.04F, 03.04G and 03.04H depending on the time of the services.[17] 03.04A was also billable once a year for a similar encounter in a Community Clinic across Alberta during the same review period.[17,21]

We reviewed the AH HSCs' fees at the Alberta Medical Association (AMA) website (https://www.albertadoctors.org/fee-navigator) to determine the current reimbursement for each of the HSCs 03.04A, 03.04F, 03.04G and 03.04H and we then contacted the Finance Department - Billing Cash and Collections of the AHS to find out what each AHS Hospital billed per ED visit for services related to HSCs 03.04F, 03.04G and 03.04H that did not require hospital admission in which patients were discharged home after less than 30 minutes of interacting with ED

physicians.[17] This was to determine the total cost of managing each ED visit in this category. We compared this with the billable fee for managing such patient visit at a Community Clinic, in this case the Medics Clinic.

We used 50% of ED visits with CTAS scores of 4 to 5 in our reviewed samples as our benchmark in comparing cost of managing hemodynamically stable patients in ED versus in Community Clinic and in assessing what could have been saved in dollars by managing the patients with CTAS scores of 4 to 5 in a Community Clinic instead of in the Wetaskiwin Hospital ED during the review period.

Findings:

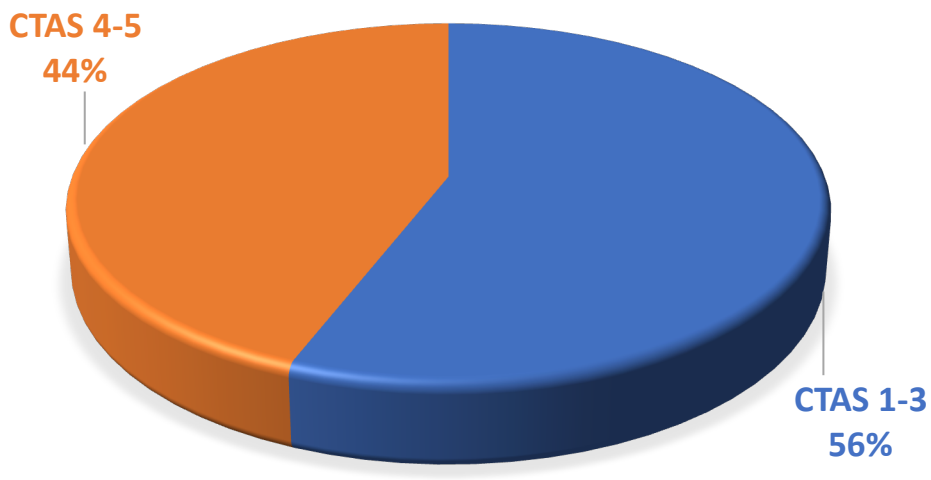
Out of the randomly selected 1,780 visits that were reviewed within the studied period, 44% (774) were triaged as CTAS scores 4 and 5. Tables 1 and 2. Out of these 1,780 visits, 37% (658) were recorded as having no primary care physicians. 79% of these visits were from patients above age of 19 years while 53% of them (953) fell in the age range of 20 to 60 years.

TABLE 1

	Fraction total	% of 1780
CTAS 1-3	1006	56
CTAS 4-5	774	44
HPCP	1122	63
NPCP	658	37
Male	820	46
Female	960	54
0-19 years	366	21
20-60 years	952	53
>60 years	462	26

Legend:
CTAS – Canadian Triage and Acuity Scale.
HPCP – Have Primary Care Physician.
NPCP – No Primary Care Physician.
0-19; 20-60; > 60 years – Age in years.

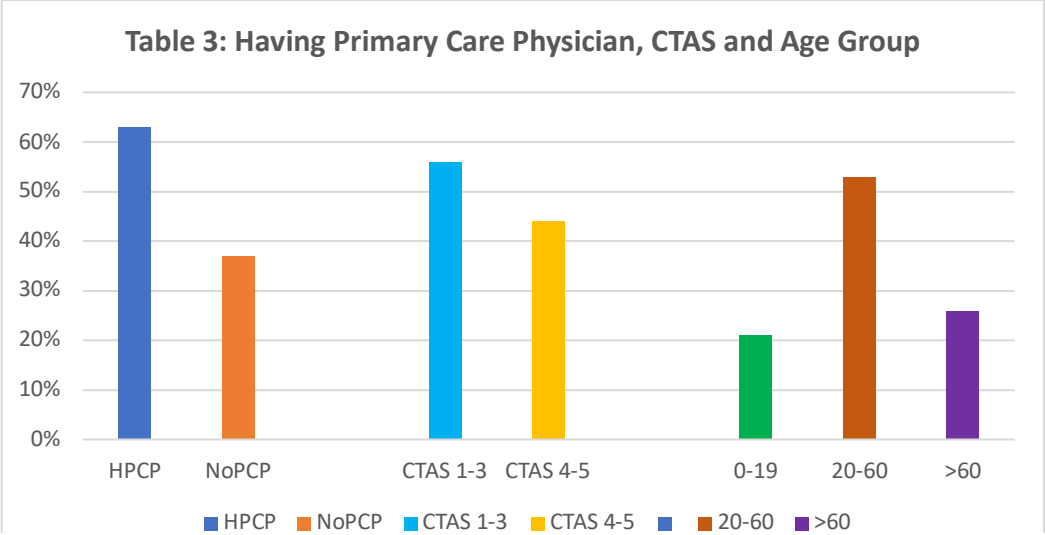
TABLE 2: CTAS DISTRIBUTION



Legend: CTAS - Canadian Triage and Acuity Scale

03.04A was the HSC for comprehensive assessment of a patient managed in a Community Clinic within the studied period, with a reimbursable fee of $104.60 for a physician skill level of Family Medicine, and this was billable up to a maximum of once a year per patient per physician.[17,21] During the same review period, 03.04F was the HSC for comprehensive assessment of a patient managed at the Wetaskiwin Hospital ED during weekdays that corresponded to the regular hours of operation of Community Clinics in Wetaskiwin and the reimbursable fee for this 03.04F HSC service was $99.19 payable to the physician that provided such service per each comprehensive ED encounter.[17]

While the 03.04A reimbursable fee included the FP professional fee and the cost incurred by the involved Community Clinic to manage such patient for that visit, the 03.04F was solely for the FP professional fee. For such ED visit, an additional fee was charged by the hospital to cover the registration, nursing care and use of the facility by such patient during the visit. The Finance Department - Billing Cash and Collections of the AHS reported that the fee charged by the hospital per such ED visit was $337.00 for a Canadian resident with no healthcare insurance coverage. This means while the cost of managing a visit with 03.04A HSC by this FP was $104.60 at Medics Clinic or similar Community Clinic during the review period, the cost of managing a similar visit by the same FP at Wetaskiwin Hospital ED was $436.19 for an uninsured Canadian resident. This translates to 417% higher cost for caring for these patients in the ED by this FP when compared with managing the same patients by the same FP in a Community Clinic, or a difference of $331.59 per visit of CTAS score 4 and 5.



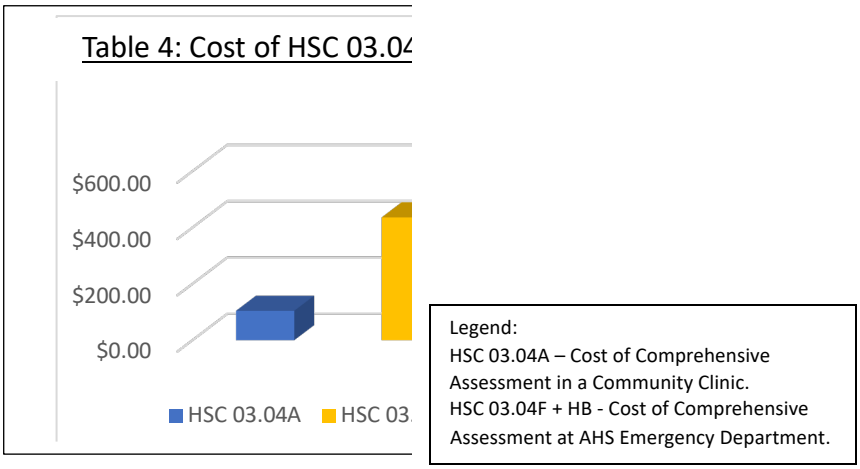
Legend:

HPCP – Have Primary Care Physician	0-19 – Age group 0 to 19 years
NoPCP – Have no Primary Care Physician	20-60 – Age group 20 to 60 years
CTAS – Canadian Triage and Acuity Scale	>60 – Age group greater than 60 years

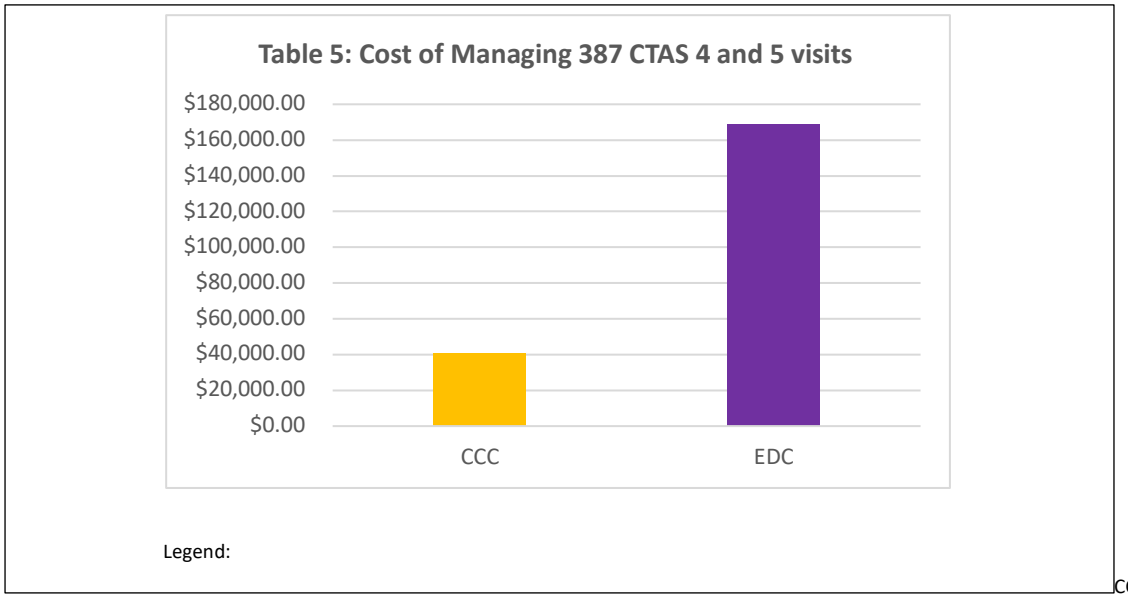
We used the amount that the AHS billed uninsured Canadian or Alberta resident for such visit as the expected amount that the Alberta government budgeted for the Wetaskiwin Hospital for such

visit.

50% of the sampled ED visits with CTAS score of 4 to 5 was 387 visits within the reviewed period. Managing these patients' visits in a Community Clinic by FPs would have cost about $40,480.20 if every visit had qualified to be billed as 03.04A while the same set of patients managed by the same FP at the ED of an AHS facility would have cost $168,805.53.



This is a difference of $128,325 in savings in Wetaskiwin Community during the reviewed period just by changing the location of providing such services. Changing the location of services to these patients from the ED to a Community Clinic would not lower quality of services to these patients since the same FP was involved in the management at the two locations. Not every visit in a community clinic would have qualified for 03.04A billing since this HSC was billable only once a year per physician per patient and not all of these CTAS score 4 and 5 patients were assigned patients of the community FPs.[21] If assigned there would be additional savings.

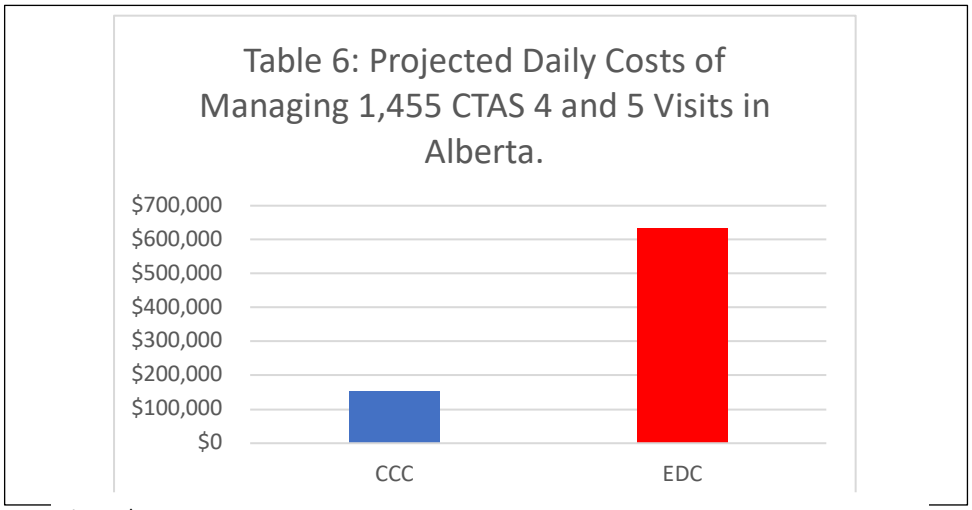


Legend:

CCC – Cost of managing 50% (387) CTAS 4 and 5 visits at Community Clinics.

EDC - Cost of managing 50% (387) CTAS 4 and 5 visits at Emergency Department of AHS Facility.

Based on data from the AMA that revealed that Emergency Department, Urgent Care and Advanced Ambulatory recorded 6,613 visits per day in Alberta, extrapolating 44% rate of these visits being CTAS 4 to 5 would amount to about 2,910 of these visits falling in the CTAS 4 to 5 category that can safely be managed in Community Clinics daily across Alberta. Using 50% of these as benchmark in calculating the cost comparison, this means at about 1,455 visits out of these daily visits can be safely managed at Community Clinics. This translates to cost of about $152,193.00 for managing these patients in Community Clinics versus $634,656.45 that may be required for managing the same patients' visits in the AHS facilities. This amounts to a daily saving of about $482,463.45 or annual savings of $176,099,159.00 by just changing the place of managing these patients' visits from AHS facilities to Community Clinics.



Legend:
CCC – Cost of managing 1,455 CTAS 4 and 5 daily visits at Community Clinics in Alberta.
EDC - Cost of managing 1,455 CTAS 4 and 5 daily visits at Emergency Department of AHS Facility.

The Government of Alberta data for 2013 and 2014 showed that 1,207,003 ED visits in Alberta were CTAS scores 4 and 5.[16] Considering the savings of about $331.59 per ED visit, if such 1,207,003 ED visits with CTAS 4 and 5 scores were managed in Community Clinics instead of in Emergency Departments, the government of Alberta would have saved about $400,230,125 between 2013 and 2014.

There are additional costs that came with HSCs 03.04F, 03.04G, 03.04H and 03.04AZ which were paid in the Emergency Departments but were not paid for similar services provided in Community Primary Care clinics. These extra billable claims in the ED that could not be billed in Community Clinic included time modifier HSCs like 03.01AA for services provided between 17:00 to 07:00 of weekdays or 07:00 to 07:00 hours of weekend and statutory holidays.[5,11,16,17] More specifically, HSC 03.01AA is a time modifier billable per call with each call representing every 15 minutes spent on managing such patient. For example, each call of TEV (17:00 to 22:00 hours of weekday), TST (07:00 to 22:00 hours of statutory holiday) or TWK (07:00 to 22:00 hours of weekend)

associated with HSC 03.01AA would earn the practitioner extra $22.79 while each call of TNTP (22:00 to 24:00 hours of any day) or TNTA (24:00 to 07:00 hours or any day) that was associated with HSC 03.01AA would earn such practitioner extra $45.55 during the review period.[17]

This added extra cost of between $22:79 to $45.55 to the cost of managing each ED visit with a CTAS score of 4 or 5 during after regular hours of 07:00 to 17:00 hours, the claims that were not billable if the same patients were managed in the Community Clinic during the same time.[17] In more rural communities were callback to ED was billable, HSC 03.03KA, 03.03LA, 03.03MC or 03.03MD would cost extra money per callback, ranging from $76.07 to $152.12, depending on the time of the day.[18,19,20] These callbacks and time modifiers came with additional costs running into additional millions of dollars per annum that could have been saved by shifting the management of CTAS 4 to 5 patients from hospital EDs to Community Clinics.

Conclusion:

Based on the findings of this study, 44% of the 1,780 randomly selected patients that were managed at Wetaskiwin Hospital between November 2021 and October 2022 were triaged as CTAS levels 4 and 5. This finding mirrored the data reported by the government of Alberta about ED visits of CTAS 4 and 5 in Alberta in 2013 and 2014.[16] These patients were stable enough to be safely managed outside Emergency Department in Community Clinics. Managing each of these ED visits in a Community Clinic could have saved the Government of Alberta about $331.59 or more per such ED visit. This was cumulative saving of $400,230,125 across Alberta in fiscal years 2013 and 2014 based on ED visits of 1,207,003 that were CTAS scores 4 and 5 in 2013 and 2014.[16]

In addition, 37% of these randomly selected patients that visited Wetaskiwin ED during the study period had no primary care physicians. This significant percentage of patients without primary care physicians partially explains why so many ED visits are CTAS 4 and 5.

Use of emergency department services by CTAS levels 4 and 5 patients and limited access to primary care physicians in Wetaskiwin Community led to higher costs in healthcare and in Alberta.

An increased supply of well-trained family physicians to community clinics may result in a lower number of ED patients without primary care physicians and, in turn, reduce the percentage of ED visits with CTAS score 4 and 5 that utilize Emergency Departments for their healthcare. Such policies may include, but are not limited to, incentives that can improve supply and retention of well-trained family physicians in Community Clinics across Alberta.

Such policies should also include allowing Community Clinic FPs to bill HSCs like 03.04F that has no annual limitation unlike the 03.04A that can only be billed once a year. This would allow Community FPs to benefit from after-hours modifier HSCs 03.01AA, which will significantly encourage FPs to extend their hours of operation beyond the regular hours of 07:00 to 17:00 hours of working days. This would allow flexibility in hours of operation of Community Clinics and reduce the cost of CTAS 4 and 5 ED visits.

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