WRHA Critical Care Physician Statement
July 2019

In April of 2017 the Winnipeg Regional Health Authority (WRHA) introduced their "Healing our Health System" plan. The aim of this plan was to deliver care "better and more effectively". The public was assured that restructuring the health care system would not compromise patient safety or care.

The Adult Critical Care program has directly felt the impact of consolidation changes. Closure of the Victoria ICU and Concordia ICU, and reduced ventilator bed numbers at Seven Oaks ICU, has reduced ICU bed capacity within the city resulting in significantly increased workload and acuity at the remaining ICU sites. This will only be exacerbated by the closure of Seven Oaks scheduled for September 2019. Patients with critical illness are an extremely vulnerable population whose very survival depends on optimal care. We have already witnessed a negative impact from earlier changes and are concerned that these proposed changes would further impair our program's ability to provide safe and effective care that critically ill patients require.

ISSUE 1: The proposed ICU bed base will be inadequate to serve the critical care needs of Manitoba patients. This will result in significant negative consequences to both patients and our health care system.

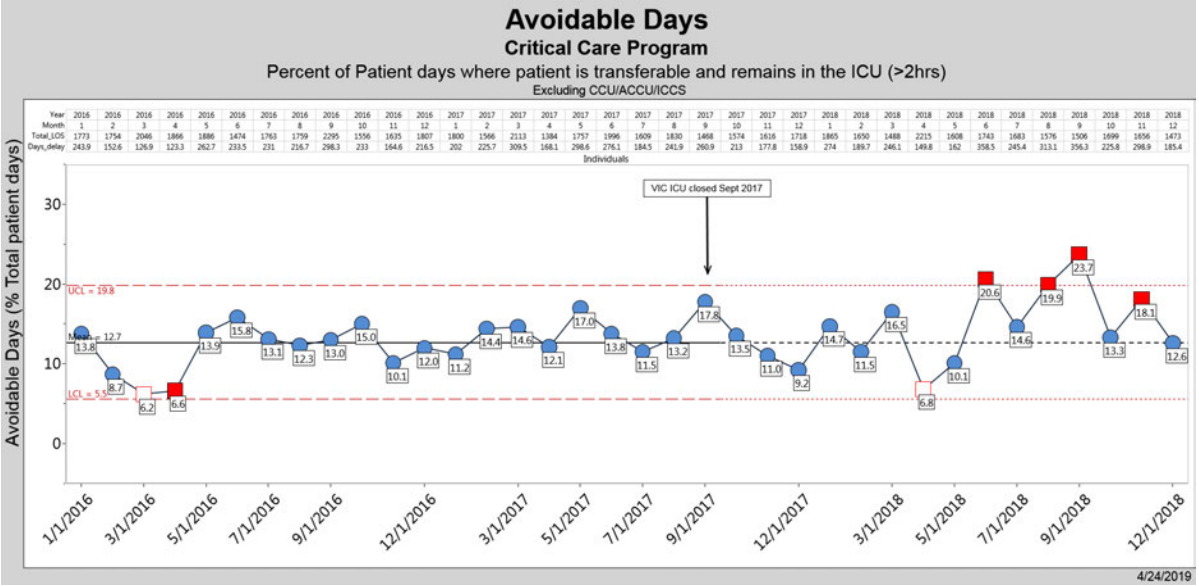
RECOMMENDATION:

1. **Critical Care bed numbers must be increased**

ICU bed use is difficult to predict and plan, since admissions are never elective. In this situation, average occupancy data is almost always inadequate for resource planning.[1] Using historical daily census data, we found that in order to meet the needs of critically ill patients 95% of the time (i.e. go over-census 1-2 times per month) we would require 67-68 beds. At the end of Phase 3 of consolidation we will have 63 beds (MICU 19, SICU 14, ICMS 14, Grace 10, IICU 6). The proposed ICU bed base will be inadequate to serve the critical care needs of Manitoba patients, and will result in significant negative consequences to both patients and our health care system.

The stated aim of consolidation/restructuring was to streamline clinical services and improve patient flow. The proposed decrease in ICU bed resources was felt to be possible in part by improving patient flow out of the ICU through immediate transfer of ward-ready patients out of the ICU to either surgical or medical wards. This has not been realized. Instead, consolidation and restructuring has worsened patient flow out of the intensive care unit, which has put further strain on our limited bed resources. Transferrable patients remain in ICU for prolonged periods of time due to bed pressures elsewhere and failure of the sub-acute decanting system. The proportion of ICU days occupied by transfer ready patients has increased significantly since September 2017 (figure 1).

Figure 1: Percent of ICU patient days occupied by transfer-ready patients, WRHA Critical Care Program, 2016 -18



Consequences of inadequate ICU beds

We do not have "surge" capacity within our current intensive care units. At times of >100% occupancy, ICU patients overflow into non-ICU environments[1]. The current proposal of reduction to 63 ICU beds will directly impact:

a) Emergency Department (ED) flow: This will result in significant increased frequency of patient overflow into ED resuscitation beds and monitored areas. This will result in delay in ED care for critically ill patients, increased wait times for the sickest patients entering the EDs, and diversion of patients in ambulances away from the most appropriate destinations.

b) Operating Room (OR) and Post Anesthesia Care Unit (PACU) flow: Back-up of patients into these areas will result in cancelation of elective surgeries, and increased surgical wait times including cardiac surgeries.

c) Delayed admission to the ICU from hospital wards and non-tertiary health care sites: ICU patients are complex and require treatment by ICU trained caregivers familiar with management of critically ill patients and use of ICU specific bundles of care aimed at preventing complications. Therefore, management of critically ill patients outside the ICU environment by non-ICU trained staff is unacceptable and will impact patient outcomes.

d) Delayed resuscitation and management of critically ill patients: Inadequate bed resources will impair our ability to admit critically ill patients in a timely fashion. Delayed resuscitation will result in worse patient outcomes with increased morbidity and mortality and is likely to increase length of stay as well. All of these capacity issues will result in patient harm.

e) Clinical decision making: Although most clinicians will do their best to avoid allowing limited resources to impact upon their clinical practice, the medical

literature is **very** clear that resource limitations do impact physician decision-making and clinical judgment[2,3]. Inadequate bed resources will result in discharging patients out of the ICU before they are ready in order to make space for other acutely ill patients. It will also lead to inappropriately allowing critically ill patients to remain on medical and surgical wards rather than being admitted to the ICU, which will directly compromise outcomes and costs of care for those patients. Overall, we anticipate that this will result in increased patient mortality and morbidity, and ICU recidivism.

ISSUE 2: **Development of safe and sustainable staffing models that will be required for us to meet the same mandate and continue to deliver high quality patient care will not be possible with the governments proposed reductions in Critical Care programmatic funding.**

RECOMMENATIONS:

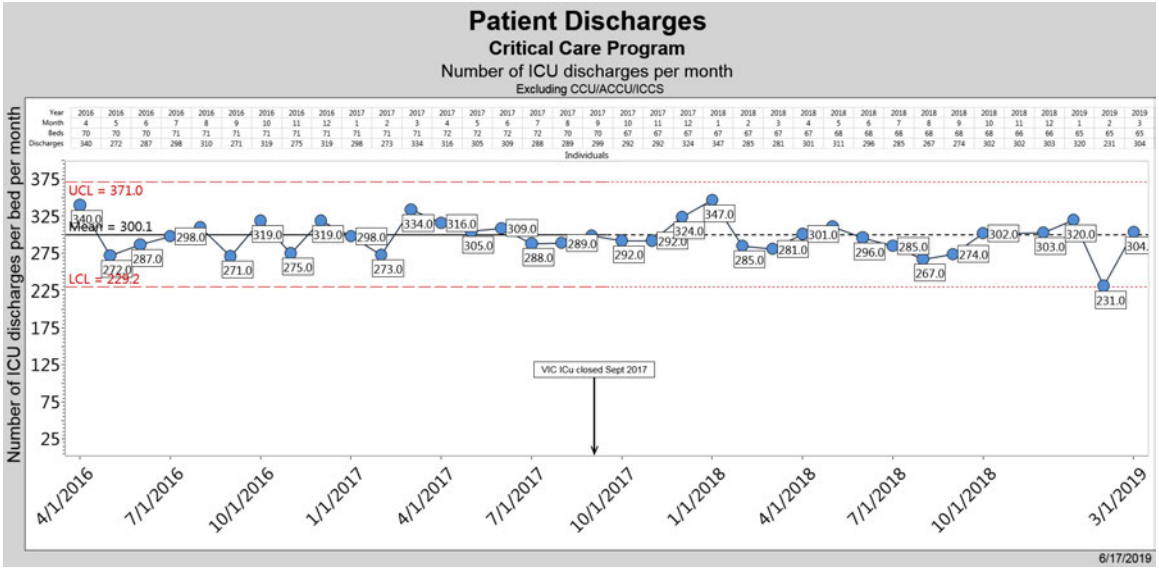
2A. **Instead of proposed programmatic funding cuts, we recommend the funds by used to towards a separate consult doctor stipend that is attached to each hospital and not to the unit bed base. The ICU consult doctor role would be responsible for critically ill patients outside the ICU and support a provincial ICU bed doctor service. We believe this service would improve patient care and flow both outside and inside the ICU.**

2B **Improve recruitment and retention of ICU HMO pool to help support code blue coverage at acute sites.**

[redacted]

Despite the decrease in bed resources, our program mandate and deliverables remain unchanged. We have been, and remain, responsible for most critically ill patients within Manitoba, outside of Brandon ICU. Due to the nature of critical illness, one cannot reschedule patient admissions in order to optimize patient flow and resource utilization. In fact, the number of ICU patients admitted to our program per month has remained unchanged despite the closure of beds in the last 2 years. (Figure 2)

Figure 2: Number of ICU discharges per month, WRHA Critical Care Program, 2016-18



Workload within the ICU

There are fewer ICU beds regionally and patients occupying these beds are sicker with higher care needs. Patient severity of illness and nursing workload measures have all significantly increased following closure of Victoria ICU (Figure 3, 4).

Figure 3: WRHA Critical Care Program Patient Severity of Illness by mean admitting APACHEII score, 2016-18

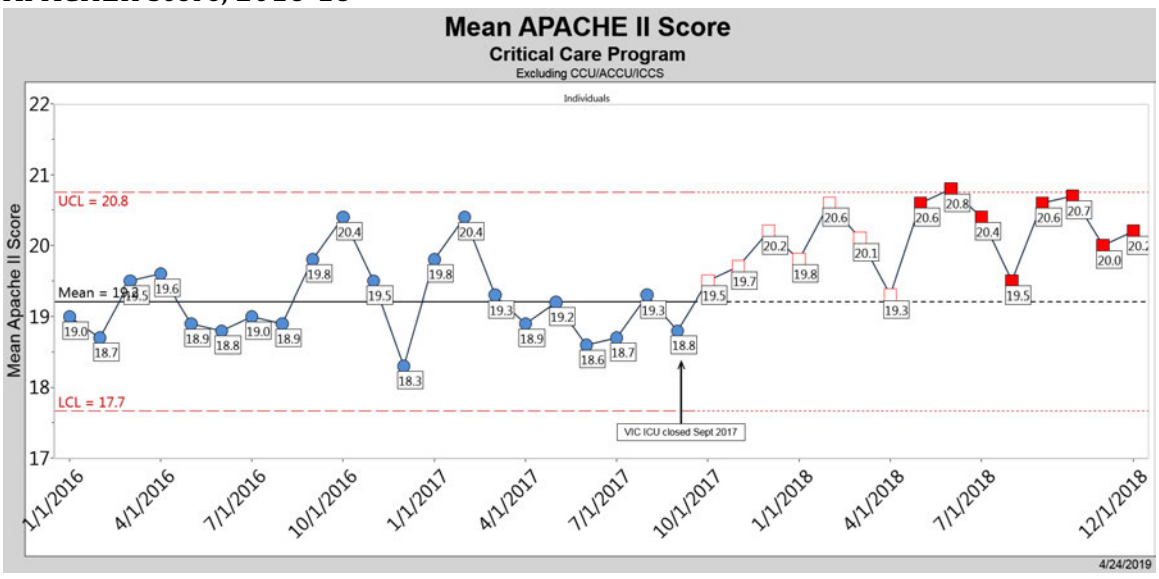
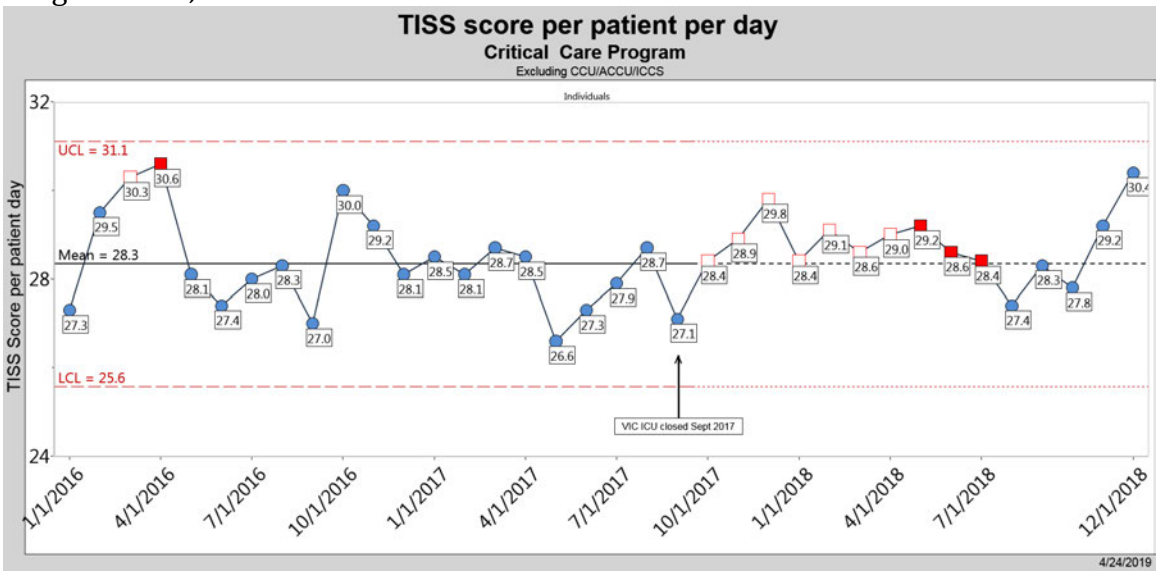
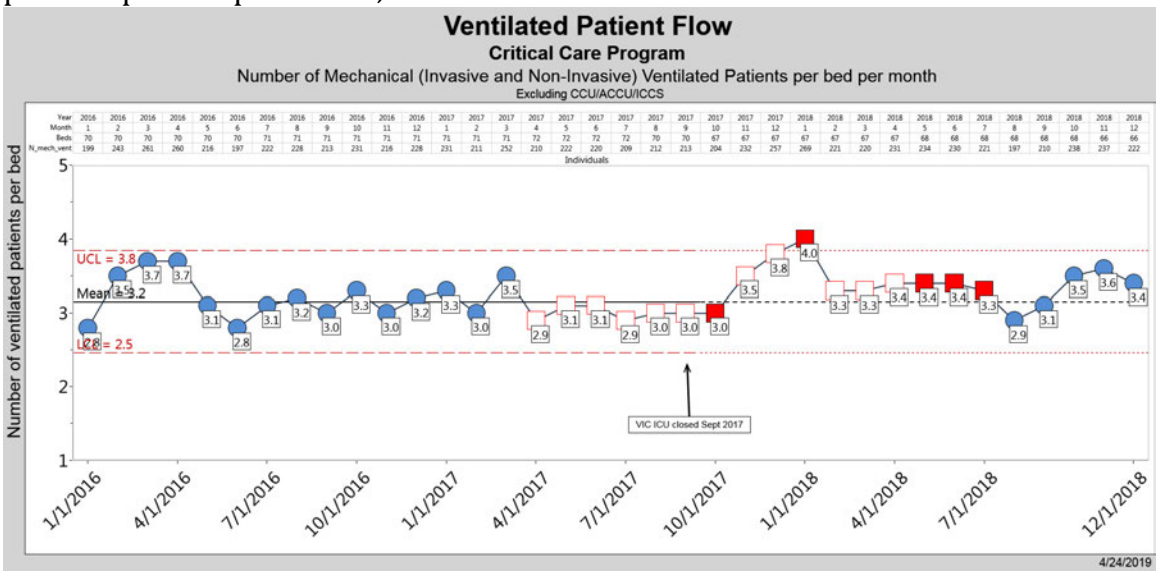


Figure 4: Average nursing workload of patient admitted to WRHA Critical Care Program Unit; 2016-18



Decreased bed resources with preserved patient volumes results in increased patient turnover (Figure 5). Admission and discharge processes of care (hand-offs, medication reconciliation) are essential for patient safety but are labor intensive and add significantly to physician workload. As a result of all these changes, workload per ICU bed has significantly increased following closure of Victoria hospital ICU and is anticipated to further increase with Concordia ICU now closed, and Seven Oaks ICU scheduled to close.

Figure 5: WRHA Critical Care Program Ventilated patient flow; Number of ventilated patients per bed per month, 2016-18



With consolidation, ICU size at each acute care hospital will increase. Physician models traditionally used in these units are inadequate to provide ongoing safe care. Although an optimal ICU patient to physician ratio is not clear but 8-10:1 has been recommended[4], we do have good evidence that when ratios rise quality of care markers decrease. The ratio above which quality of care decreases may be even lower in units with higher severity of illness and patient turnover[5,6]. Alternative staffing models will need to be developed for newly expanded ICU's to optimize patient outcomes and prevent physician burnout.

Workload outside the ICU

Consolidating patients in the 3 acute hospitals has also significantly impacted ICU physician workload outside the ICU in three main ways:

a) **Consult volumes:** Consult volumes that were traditionally spread across 6 hospitals will now be concentrated in 3 hospitals. In addition, provincial programs aimed at identifying critically ill patients earlier with the development of an "Early Warning System" will further increase ICU consult workload.

   This increased consult volume and creates an increasing proportion of our work that occurs outside the ICU walls. When there is an unstable sick patient in the unit demanding our attention at the same time as an unstable sick consult outside the unit, we cannot physically be in two places at the same time. Due to the increased unit size and patient acuity, it is frequently unsafe for the ICU physician to be leaving the unit or even the patient's bedside. Delay in response negatively impacts care and flow through the ED, OR, PACU, and hospital wards.

b) **Telemedicine responsibilities for outside consults and management advice:** A significant amount of ICU attending time is spent on phone calls requesting patient care advise, or transfer of care requests, and managing the ICU bed resources. These extra responsibilities constantly pull us away from our patient's bedside and negatively impacts our patients.

c) **Increased "Code Blue" calls**: In-hospital "Code Blue" calls have increased in number and are expected to continue to rise. All three of the remaining acute care hospitals have become accustomed to the ICU team managing all "Code Blue" calls within their inpatient environments. Within the past year the Grace Hospital has made this practice a local policy. In the setting of inadequate Resident Physician or ICU HMO coverage, this mandate has put significant stress on the ICU physician staff. This issue is already causing problems at the Grace Hospital due to a lack of on-call residents and HMO availability, and is anticipated to become a more regular problem at both HSC and SBGH in the face of expanding ICU bed bases and necessary changes to service delivery. Attending physicians are frequently required to be in house for prolonged periods of time, up to 36 hours, which is unsafe for both the physicians and their patients. In fact, this has resulted in an

emerging staffing crisis at Grace Hospital ICU. All of these out of ICU responsibilities take the ICU physicians out of the unit, leaving less time for them to devote to caring for patients admitted to the ICU. Our current contract does not address this role, but we consider it appropriate that "Code Blue" obligations is under ICU responsibilities.

The new realities of workload within and outside the ICU, render our current physician-staffing model inadequate to deliver high quality critical care. Due to resident shortages, HMO availability, and increased patient acuity, attending physician presence overnight is no longer the exception. Even prior to closure of Concordia and Seven Oaks, many physicians are reporting concern regarding their ability to provide high quality care for both patients within the unit and outside the ICU. This has had an untold physical and mental burden to our ICU attending cohort and if left unaddressed will result in physician burnout. The significant proposed cuts in programmatic funding makes it difficult to explore alternative sustainable staffing models in our ICU units in order to provide safe and high quality patient care.

Recommendation 2A: Creation of ICU Consult Doctor

Based on the increased workload within and outside the ICU, a separate ICU consult physician role should be implemented. The ICU consult physician would be available to support patient care outside the ICU and would be responsible for assessing ICU consults in the ED, PACU, and ward during the day. The consult physician would also be a point person for answering outside phone calls and managing the ICU bed resources for the region. There are multiple benefits that would arise from the introduction of a consult doctor including:

a. Improved care within the unit as the ICU unit attending would be able to concentrate solely on caring for admitted patients in the ICU
b. Improved care for critically ill patient outside the ICU as there would be a dedicated physician to answer consults and help manage patients outside the ICU.
c. Improved patient flow outside the ICU with timeliness of ICU consult assessment should improve.
d. If there is delay in ICU admission due to inadequate bed availability there would be a dedicated attending caring for the patient. This would free up other staff such as ED Attendings, PACU Anesthetists and Ward Attendings to focus on their other patients improving efficiency in these areas of the system.
e. Improved ease of access to critical care advice and beds by patients at non-WRHA acute care sites through the development of a Provincial ICU bed doctor service.

Creation of ICU consult doctor role is not possible with proposed government cuts to our programmatic funding. We do feel, however that maintenance of pre-consolidation funding will be sufficient for us to support the creation of this care delivery model.

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References:

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6. Stelfox, H, Hemmelgarn B, Bagshaw S, et al. Intensive Care Unit Bed Availability and Outcomes for Hospitalized Patients With Sudden Clinical Deterioration. Ann Int Med 2012 ;172(6):467-474.