

Introduction

This report summarizes the issues we identified based on our information analysis (see: 'Comox Valley Hospital Capacity Fact Sheet', April 2019), Using scenario planning, we projected two possible scenarios for the Comox Valley hospital if no more hospital and/or care beds are added to the system than planned. Our results are indicative only and suggest the need for immediate investigation of our hospital's current over-capacity crisis and need for more long-term residential care beds.

We expect that the hospital over-capacity crisis will get worse over the next two years. In 2021, when the new 120 care beds have opened, we estimate that the Comox Valley requirement for care beds will have doubled and the hospital over-capacity situation will be similar or worse than that experienced during its first 18 months of operations. Any suggestion that the hospital over-capacity crisis will be resolved with the opening of the planned 120 new care beds by 2021 is unfounded. Beyond 2021, we can expect the situation to be worse than experienced before then unless more beds are added to the system.

While the requirement for more long-term care beds must take priority over more costly hospital beds, the possible need for hospital capacity expansion to meet its own growth requirements warrants examination.

There is much optimism within the healthcare industry that hospital demand can be reduced through advancements and innovations that reduce hospital patient admissions, readmissions, and durations. Island Health is moving forward on a number of positive initiatives including home care service improvements that will be beneficial, however, we believe there is a need to challenge any suggestion that these changes are the solution to what is fundamentally a serious shortage of healthcare beds and primarily long-term care beds.

Comparative Analysis

During the last fiscal year (April 1 2018- March 31 2019), North Island Hospital had the highest occupancy rates of all Island Health hospitals. Campbell River was highest at 120% and Comox Valley was next at 114% (108% if hospital had been at 146 beds for the entire period).

Compared to the Comox Valley hospital's current 146 bed capacity and based on patient numbers at its more recent 112% average operating capacity, it would require:

- 159 beds to operate at Island Health's average monthly occupancy rate of 103% not including North Island Hospital,
- 170 beds to meet the 2017 national average for Canada that was 2.55 hospital beds/1000 population, and
- 173 beds to meet the planning target 95% average occupancy rate as confirmed by Island Health management in June 2018.

This simplified analysis does not account for various factors to be considered in hospital capacity planning, however, the consistent theme of "not enough beds" underscores the problem.

The Current Comox Valley Hospital Over- Capacity Crisis:

Since the hospital opened on October 1 2017, its number of patients has grown continuously including the number of patients needing hospital care (i.e., not waiting for a care bed) and at above expected, over-capacity levels

- For the first seven months that the hospital operated at its current 146 bed capacity, the average monthly occupancy rate was 112% (164 patients) compared to the 10-year 153 bed design capacity
- For 70% of this time, the occupancy rate was 114% (168 patients) and for 30% of this time, it was 120% (175 patients)
- A new daily high was reached on January 11 2019 at 138% (202 patients)
- Despite the transfer of 21 AAP patients to The Views, there was an average monthly increase of 28 patients for the winter period from October 1 2018- March 7 2019 compared to the prior year
- Detailed and graphic analysis supporting this assertion is provided in our 'Fact Sheet'

The shortage of care beds is a significant factor affecting hospital over-capacity levels and the number of patients waiting in hospital for a care bed to become available is higher than expected

- Despite the transfer of 21 Assessed Awaiting Placement (AAP) patients to the new transition beds at The Views on September 5 2018, there were 21 AAP patients on January 11 and 34 on April 18 2019 compared to 31 AAP patients on March 15 2018
- This suggests a much higher annual increase in AAP patients compared to our estimate of an average increase of eight AAP patients per year due to the current care bed shortage
- We estimate that the requirement for Comox Valley care beds increases by 32 care beds per year

The number of patients who need hospital care (i.e., not waiting for a care bed) and as such not affected by the care bed shortage, appears to be growing at a higher rate than expected

- There was a period of time during the winter months when the estimated average monthly increase compared to the prior year was 38 patients needing hospital care (i.e., not waiting for a care bed)
- This suggests a much higher annual increase compared to our estimate of an average increase of four new hospital beds required per year based on population growth estimates

Taking the March 2018 RFP award of 151 care beds into account, we estimate a 2019 shortfall of 207 care beds with the addition of 31 care beds to the system and a 2021 shortfall of 151 care beds with the addition of the new 120 care bed facility, as compared to Island Health's estimate of 151 care beds required for the 2018 RFP awarded in January 2019.

- The RFP for 151 care beds was never adequate and several years late
- Our estimates are based on BC Statistics population estimates and the same planning convention that produced the 2017 based RFP care bed requirement
- Based on these estimates, it is entirely realistic to expect that the hospital over-capacity crisis will get worse over the next two years and will be similar and/or worse in 2021 and beyond

The problem is mostly a lack of care beds and can only be resolved by an adequate supply of care beds and possibly an increase in the number of hospital beds

- It is unrealistic to assume that 120 new care beds by 2021 will be adequate and resolve the hospital over-capacity crisis when demand for these care beds will have doubled by then
- An ongoing and growing shortage of care beds (with supply lagging demand by several years and possibly longer) combined with an increased real demand for hospital beds due to our growing and aging population, will significantly contribute to increasingly higher Comox Valley hospital over-capacity occupancy rates

If past experience is the best indicator of future results:

- There will always be a shortage of care beds necessitating a realistic provision of hospital beds for AAP patients
- It is already a late start to properly plan for a further increase in long-term care beds and to position the hospital to respond to an increase in demand for the next two years and a likely much worse crisis than ever experienced beyond 2021

What We Can Expect on a Status Quo Basis:

We developed two scenario planning projections that are indicative of what could occur from 2017 to 2027 if no further healthcare beds are provided. The scenarios were developed on a 1) “conservative” basis (based on population estimates only) and 2) “realistically possible” basis (adjusted to reflect recent hospital experience) and are provided on pages 5 and 6.

The analysis assumes the addition of the 151 March 2018 RFP beds planned. It is noted that seven of the total 153 design capacity beds are available for expansion and the feasibility of a CDU conversion for the Comox Valley hospital similar to the 10 bed conversion at Campbell River is unknown to us at the time of this analysis. Our analysis does not consider these hospital expansion options.

The population growth estimates used are based on BC Statistics estimates for 2011-2018.

The assumptions for required number of beds are as follows:

- (A) The estimated hospital bed requirement assumes that with perfect information, a hospital would be planned to open at a target 95% occupancy rate at a minimum. For 2017, it bases the required number of hospital beds on the number at which there would have been a 95% occupancy rate for the average number of patients for the first 11 months of operations. For 2018, the same number of required beds is used and at the average number of patients experienced during the next seven months of operations, it reflects a 106% occupancy rate which is deliberately conservative for this scenario given actual occupancy rate for the period was 112%.

Projections for 2018- 2021 reflect the number of beds required to accommodate the estimated increase in number of patients and no further adjustments have been made to reflect a planning assumption of a target 95% occupancy rate.

For Scenario 1, the estimated 12 bed yearly increase is the total of four patients based on population growth estimates and eight patients due to the increased care bed shortage. The four patient estimate is calculated based on 40% utilization by seniors as per the national average. The eight bed AAP requirement is derived statistically based on the number of AAP patients relative to the care bed shortage (estimated by Island Health as the planned 120 new care beds) and supported by the practice confirmed by Island Health management (July 2018) that when care beds become available, they are allocated on a 1:3 hospital to community ratio.

For Scenario 2, the estimated 25 bed yearly increase is calculated at 50% of the estimated average annual increase of 49 patients (the average increase of 28 patients for the winter period from October 1 2018- March 7 2019 compared to the prior year and the 21 AAP patients transferred to the new transition beds at The Views who would otherwise have remained in hospital waiting for a care bed).

An adjustment has been made to the number of required hospital beds in 2021 to reflect a transfer of 30 patients to the planned new 120 care bed facility assuming the 1:3 hospital to community allocation of care beds.

- (B) Residential long-term care bed projections start with the estimated 2017 and 2018 shortfall based on the corresponding BC Statistics estimates of the 75 and older population for Comox Valley and the planning convention: $75/1000 \times \text{number of age 75 years and older residents} = \text{number of care beds required}$. The estimated increased requirement of 32 care beds per year is based on BC Statistics 2018 estimate of 7701 age 75 and older Comox Valley residents, an average annual estimated growth rate of 5.47% based on Island Health's 10-year estimate, and the planning convention. Adjustments based on assumptions concerning the RFP beds coming into service have been made for 2018 and 2021 as shown.

Scenario 1- Conservative

A conservative scenario for 2017-2027 based on population estimates only:

	A) Total Required Number of Hospital Beds	B) Total Required vs. Planned Care Beds	
2017	154	182	-Hospital opened at 129 beds and a 10-year design capacity of 153 beds -March 2018 RFP for 151 care beds
2018	154	206 -31 =175	-Hospital operating capacity increased to 146 beds --At 112% (164 patients) average occupancy rate, the hospital exceeds its 153 bed design capacity -Adjustment made for 31 RFP beds -21 transition beds at the Views and 10 already temporarily funded beds at CVSV
2019	+12 =166	+32 =207	-New aggregate requirements adjusted for estimated population growth
2020	+12 =178	+32 =239	-Cumulative new aggregate requirements
2021	+12 =190 -30 =160	+32 =271 -120 =151	-Cumulative new aggregate requirements -Adjustments made for opening of planned 120 new care bed facility -Results in same care bed shortage for which Island Health determined as its March 2018 RFP requirement for 151 care beds -Number of hospital patients higher than in 2018 at a 110% average occupancy rate
2022	+12 =172	+32 =183	-Cumulative new aggregate requirements
2027	+5x12 =232	+5x32 =343	-Cumulative new aggregate requirements -The number of AAP patients will be extremely high; based on 1:3 allocation ratio, there could be 86 AAP patients with the balance living in community -To bring this within 95% occupancy planning target levels, means a 244 hospital bed requirement -With an adequate supply of care beds, about 160 hospital beds would be required

Scenario 2- Realistically Possible Scenario

A realistically possible scenario for 2017-2027 based on the same care bed estimates as Scenario 1 and a hospital demand growth rate projected at 50% of the hospital's first 18 month operating experience to consider the continued, unexpected growth in demand experienced:

	A) Total Required Number of Hospital Beds	B) Total Required vs. Planned Care Beds	
2017	154	182	-Hospital opened at 129 beds and a 10-year design capacity of 153 beds -March 2018 RFP for 151 care beds
2018	154	206 -31 =175	-Hospital operating capacity increased to 146 beds -At 112% (164 patients) average occupancy rate, the hospital exceeds its 153 bed design capacity -Adjustment made for 31 RFP beds -21 transition beds at the Views and 10 already temporarily funded beds at CVS
2019	+25 =179	+32 =207	-New aggregate requirements adjusted for estimated population growth
2020	+25 =204	+32 =239	-Cumulative new aggregate requirements
2021	+25 =229 -30 =199	+32 =271 -120 =151	-Cumulative new aggregate requirements -Adjustments made for opening of planned 120 new care bed facility -Results in same care bed shortage for which Island Health determined as its March 2018 RFP requirement for 151 care beds -Hospital derives no benefit from 120 new care beds and is operating at a 125% (182 patients) average occupancy rate Number of hospital patients higher than in 2018 at a 136% average occupancy rate
2022	+25 =224	+32 =183	-Cumulative new aggregate requirements
2027	+5x25 =349	+5x32 =343	-Cumulative new aggregate requirements -The number of AAP patients will be extremely high; based on 1:3 allocation ratio, there could be 86 AAP patients with the balance living in community -To bring this within 95% occupancy planning target levels, means a 367 hospital bed requirement -With an adequate supply of care beds, about 277 hospital beds would be required