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University of Vermont
HEALTH NETWORK

To: The Honorable Kevin Mullin, Chair, Green Mountain Care Board

From: John Brumsted, President and Chief Executive Officer, University of Vermont Health Network

Date: February 14, 2020

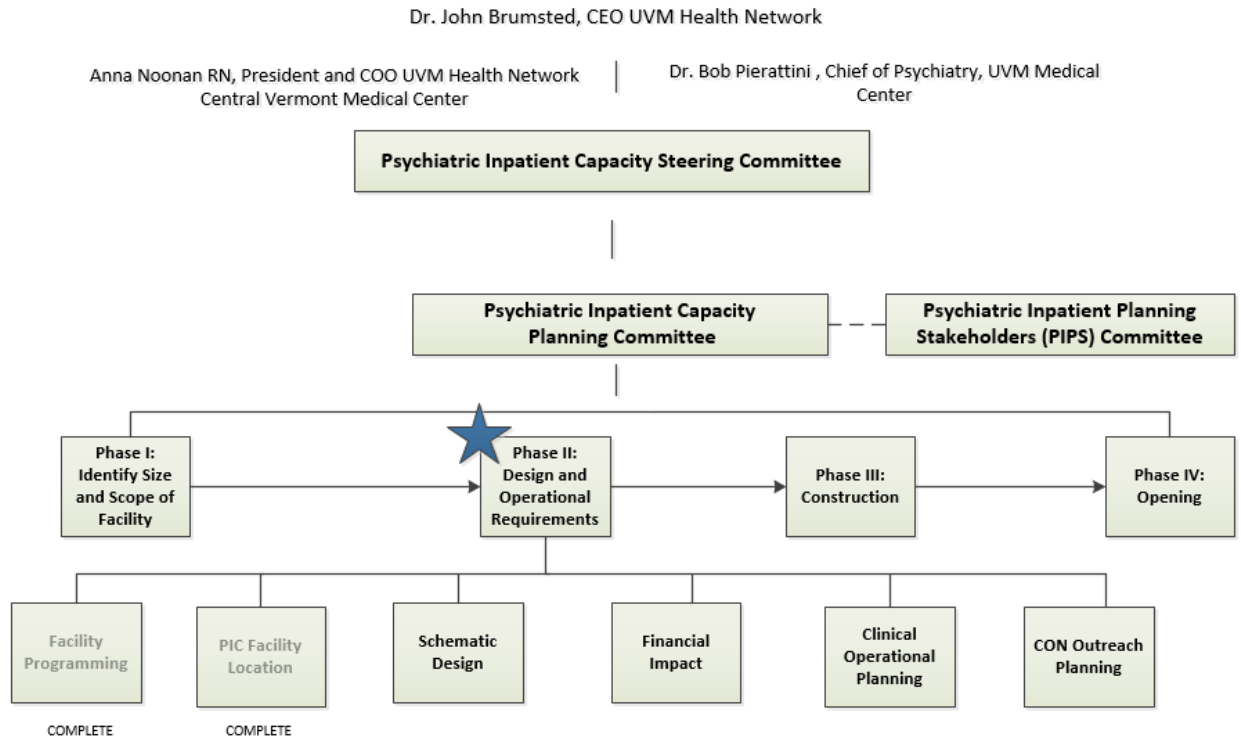
Subject: UVM Health Network quarterly report on inpatient mental health capacity

Please accept this memorandum as the UVM Health Network's seventh quarterly status report on the planning of the new inpatient psychiatric capacity on the Central Vermont Medical Center (CVMC) campus. We look forward to discussing this report at the public hearing on February 19, 2020.

This report provides updates on the schematic design plan for inpatient psychiatry and the emergency department at Central Vermont Medical Center, preliminary project cost estimates, our progress on the development of the business plan and efforts to refresh the analysis of the estimated statewide need for additional adult inpatient psychiatric beds. Additionally, this memo addresses the following GMCB milestones:

- Identify stakeholders from whom UVMHN will seek input, and how those stakeholders will be engaged.
- Describe any activity related to determining the appropriate number and type of additional adult inpatient beds needed statewide.
- Describe how UVMHN will assess and address workforce needs for the additional beds.
- Provide timeline/work plan and progress report for the following:
 - Obtaining public/stakeholder input
 - Hiring architect and developing schematic-level architectural drawings that are compliant with Facility Guideline Institute guidelines
 - Describing how this project will interface with future facility needs at CVMC
 - Developing and submitting the CON application
- Describe the funds flow from the \$21 million FY 2017 UVMMC net patient revenue overage

Project Overview



The UVM Health Network committed to a 3-4 year timeframe to “significantly improve access to inpatient psychiatric care.” We are in Phase II of a four- phased project. Over the past year, the team has completed the following milestones: re-sited the facility location on CVMC campus; identified how the new inpatient psychiatric facility and ED will align with CVMC’s master facility plan; identified the facility program for both the inpatient psychiatric facility and the ED; completed the schematic design for inpatient psychiatry and the emergency department; refreshed the initial data analysis; conducted a parking and traffic study for the CVMC campus.

As a result of this work, we are in the beginning stages of identifying the financial impacts of the project.

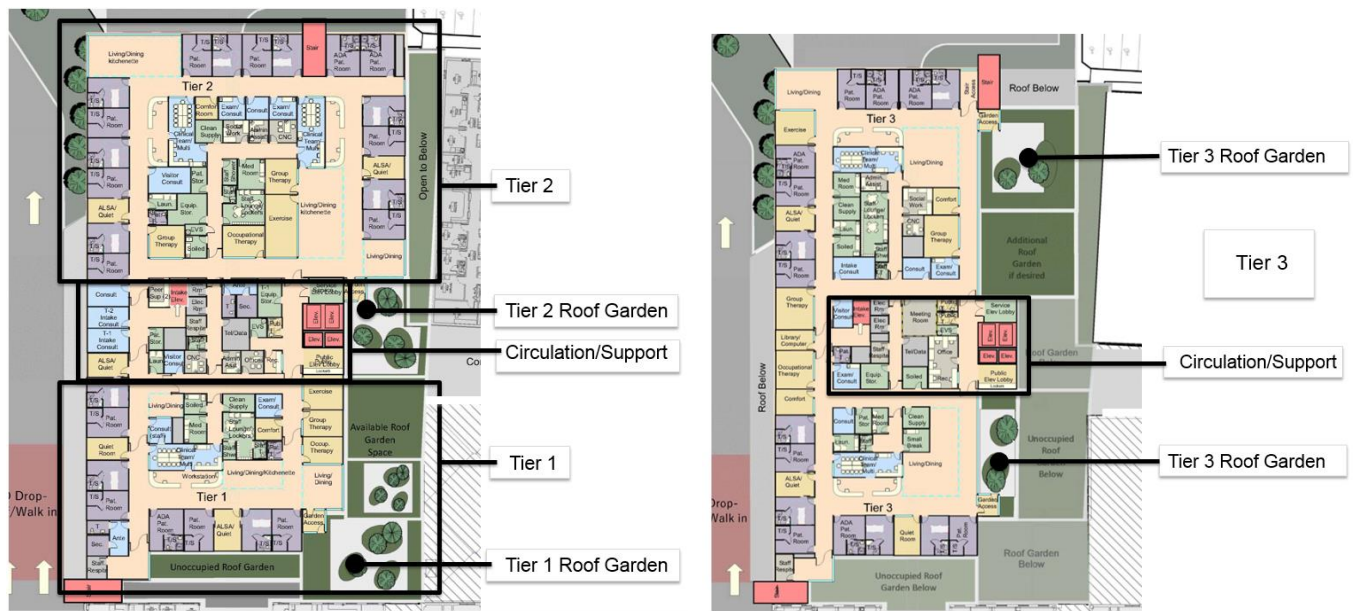
Inpatient Psychiatric and Emergency Department Schematic Design Highlights

Floor plan designs that support and enable the programs developed for each of the three tiers of acute psychiatric care and the ED have been completed. These floor plans were developed, revised, and approved over a series of meetings with a multi-disciplinary, cross-organizational design group consisting of: Peer Advocates; Patient and Family Advisors; Nursing and Physician staff; operational leaders; ancillary and support service staff.

In the facility design, the second and third floors of the building house forty adult inpatient psychiatry beds and associated spaces for patient care. The second floor consists of an 8-bed,

Tier 1 unit and a 16-bed, Tier 2 unit. The Tier 1 unit can easily be subdivided with doors into two smaller units, if needed for optimal patient care and safety. These units are separated by a centrally located support core. The core includes intake spaces for the units, as well as primary vertical circulation for patients, the public, and hospital services.

The third floor includes sixteen, Tier 3 beds, divided into two 8-bed areas, also separated by the support core. Each unit has direct access to outdoor roof garden space from the living/dining area. The design on all floors prioritized flexibility.



Floor Plans for Inpatient Psychiatric Unit

The planning work needed to begin to identify a preliminary, high level cost estimate has occurred since our last report. Much of this effort was related to site planning as well as traffic and parking impact studies. As that progressed, experts in these areas identified a number of challenges to construction that were not anticipatable in the initial phases of planning. Those challenges include: unforeseen building site conditions, complex interfaces with the existing hospital, patient access into the building and program refinements.

The appendix contains a complete report of the schematic design for the proposed facility, as well as the results from the parking study, site planning and design work completed to date. The appendix also includes updates on permitting and progress on both conceptual and schematic project cost estimates.

Conceptual Project Cost Estimate

Working with our partners, we sought to find cost-effective options to address the challenges identified during this phase of the planning, however, the combined additional cost of these remediations has proven to be substantial, as we learned when our conceptual project cost

estimate recently became available. The conceptual project cost estimate for the proposed facility is approximately \$150 million, far in excess of what either the UVMHN or the State of Vermont could reasonably be expected to afford to address the much needed increase in adult inpatient psychiatric capacity for the state.

We have begun the process to identify alternative options and are reconvening the design team, construction manager and stakeholders to evaluate the necessary project parameters and scope. As we continue this work, we will prioritize the programming and design work completed to date with the stakeholders, and we remain committed to an ongoing process of stakeholder engagement.

Needs Assessment: Updated Data Analysis

An update of the analysis of the statewide adult psychiatric bed need originally completed in September 2018, is in its review phase. The updated estimate of additional need will also consider the impact of the 12 Level One beds scheduled to open at the Brattleboro Retreat in Spring 2020, as well as the proposed 16-bed secure residential facility in Middlesex. Reviews of the updated analysis will be scheduled through February and March.

Business Plan Development

Work continues on the development of the business plan. The major focus of this work is the development of robust operating models for the inpatient psychiatry units and emergency department, and financial pro formas for these units as well as the new facility as a whole. Preliminary staffing models have been completed and are currently being vetted through internal stakeholders and subject matter experts. We have consulted with our colleagues at Rutland Regional Medical Center, Vermont Department of Mental Health, and Brattleboro Retreat regarding staffing and other operating costs with a particular focus on the needs of Level One and other high acuity patients.

In development is the reimbursement model for the inpatient psychiatric unit. We have assembled a reimbursement workgroup to provide input to the model; the workgroup includes finance and reimbursement leaders from CVMC and the UVM Health Network, as well as participants from OneCare Vermont, VAHHS, and various subject matter experts from the office of Health Care Reform, the Department of Vermont Health Access, the Green Mountain Care Board and the Department of Mental Health. We appreciate the contributions of these experts to assist us in the development of a robust reimbursement model. Work will continue through March on the creation of a set of reimbursement scenarios.

Stakeholder Engagement to Date

The UVM Health Network remains committed to obtaining input from key constituents from across the state of Vermont, throughout the duration of this project. The following table reflects key constituents and forums that have been engaged in the PIC planning process through February, 2020. We will continue to engage these forums as we move through the planning process.

Date	Tactic	Audiences
9/6/2018	Presentation: PIC Modeling Analysis	Internal Sub-group preliminary
9/6/2018	Presentation: PIC Overview	Community Collaborative
9/7/2018	Presentation: PIC Modeling Analysis	Full internal group review
9/17/2018	Presentation: PIC Modeling Analysis	PIC Steering Committee
9/18/2018	Presentation: PIC Overview	BOT Planning
9/19/2018	Presentation: PIC Modeling Analysis	THRIVE: Barre
9/24/2018	Presentation: PIC Modeling Analysis	DMH
9/26/2018	Presentation: PIC Modeling Analysis	Network Board Planning
9/27/2018	PIPS Meeting	Community Stakeholders Group
10/4/2018	Presentation: PIC Modeling Analysis	Community Collaborative
10/5/2018	GMCB Meeting	Green Mountain Care Board and Staff
10/12/2018	Presentation: PIC Modeling Analysis	VAHHS Board meeting
10/12/2018	Presentation: PIC Modeling Analysis	VAHHS CMO Meeting
10/15/2018	Presentation: PIC Modeling Analysis	Howard Center (Catherine Simonson and Charlotte McCorkel)
10/15/2018	GMCB Report Distribution	Green Mountain Care Board
10/16/2018	PIC overview	Program Quality Meeting
10/16/2018	CVMC Community Town Hall	CVMC key influencers and public

10/23/2018	Presentation: PIPs Follow-up Deep Dive	Rep. Anne Donahue, Ward Nial and Daniel Towle
10/25/2018	GMCB Report Distribution	PIPs Committee; UVMMC Program Quality Committee
10/26/2018	Meeting with Legislators	Rep. Lori Houghton and Rep. Ben Jickling
11/6/2018	AHS Meeting	AHS Secretary
11/27/2018	Legislative Update	Rep. Mary Hooper
11/28/2018	GMCB Hearing	Green Mountain Care Board
12/5/2018	AHS Meeting	AHS Secretary and key staff (Al Gobeille, Michael Costa, Ena Backus, Cory Gustafson, Mourning Fox)
12/20/2018	Inpatient Psych Presentation	Vermont Medical Society
12/20/2018	PIPS Meeting	Community Stakeholders Group
1/4/2019	VAHHS ED Medical Directors	ED Medical Directors
1/8/2019	Meeting with Peer Advocates	Elaine Toohey , Vicki Warfield and Ward Nial
1/15/2019	GMCB Report Distribution	Green Mountain Care Board, PIPS
1/17/2019	UVMMC Community Leaders Breakfast	AHS, GMCB, PIPS, Community members
1/24/2019	PIC Update Presentation	VAHHS Designated Hospitals
2/6/2019	PIC Update Presentation	House Corrections and Institutions Committee
2/12/2019	PIC Overview Presentation	CVMC Clinical and Administrative Leadership Meeting (CALM)
2/20/2019	GMCB Hearing	Green Mountain Care Board
3/20/2019	PIC Presentation - Overview, IMD, Bed Planning	Psychiatric Inpatient Planning Stakeholders Group (PIPS)
3/27/2019	PIC Update Presentation	CVMC Community Town Hall
4/2/2019	PIC Overview Presentation	Senate Institutes Committee
4/9/2019	Follow-up meeting	Ken Liberto
4/16/2019	Follow-up meeting	Rep. Anne Donahue and Ward Nial
5/15/2019	GMCB Report Distribution	Green Mountain Care Board, PIPS, UVMMC Program Quality Committee
5/17/2019	PIC Presentation - Overview, IMD, Bed Planning	Commissioner of the Department of Mental Health - Sarah Squirrell
6/12/2019	PIC Facilities Presentation	Green Mountain Care Board and attending public

7/9/2019	PIC Presentation - Facilities Planning	Psychiatric Inpatient Planning Stakeholders Group (PIPS)
8/9/2019	Update Meeting	Green Mountain Care Board
8/12/2019	Update meeting	Rep. Anne Donahue
8/13/2019	PIC Presentation - Facilities and site planning	Psychiatric Inpatient Planning Stakeholders Group (PIPS)
8/14/2019	AHS Meeting	AHS key staff (Martha Maksym, Sarah Squirrel, Mourning Fox)
8/15/2019	GMCB Report Distribution	Green Mountain Care Board, PIPS, UVMMC Program Quality Committee
9/18/2019	GMCB Hearing	Green Mountain Care Board
10/22/2019	Update Meeting	Rep. Anne Donahue
11/4/2019	Meeting with Peer Advocates	Anne Donahue, Ward Nial
11/5/2019	PIC Presentation: Facilities and Site Planning	Psychiatric Inpatient Planning Stakeholders Group (PIPS)
11/15/2019	GMCB Report Distribution	Green Mountain Care Board, PIPS, UVMMC Program Quality Committee
11/18/2019	Update Meeting	Rep. Anne Donahue
12/16/2019	Update Meeting	Rep. Anne Donahue
1/14/2020	Update Meeting	Rep. Anne Donahue
2/10/2020	Update discussions with legislators	Rep. Donahue, Hooper and Lippert. Sen. Lyons and Balint
2/11/2020	PIC Presentation - Facility Plans	Psychiatric Inpatient Planning Stakeholders Group (PIPS)
2/14/2020	GMCB Report Distribution	Green Mountain Care Board, PIPS, UVMMC Program Quality Committee

Funds to Date

To date, UVM Health Network has expended \$1,183,949.46 of the \$21 million FY2017 net patient revenue overage, without taking account of the significant internal resources already devoted to the planning process. The below table reflects the breakdown of funds allocated to date.

Time Period	Description of Transaction	Amount of Expenditure	Amount of Revenue	Balance
7/3/2018	Halsa Consulting	\$19,588.72	\$21M	\$20,980,411.28
9/13/2018	Halsa Consulting	\$25,170.92	\$20,980,411.28	\$20,955,240.36
12/5/2018	Manatt Group	\$33,381.00	\$20,955,240.36	\$20,921,859.36
1/11/2019	Manatt Group	\$217.50	\$20,921,859.36	\$20,921,641.86
1/16/2019	Halsa Consulting	\$1,397.85	\$20,921,641.86	\$20,920,244.01
3/8/2019	Halsa Consulting	\$15,000.00	\$20,920,244.01	\$20,905,244.01
3/31/2019	E4h	\$20,240.00	\$20,905,244.01	\$20,885,004.01
4/22/2019	Halsa Consulting	\$3,403.67	\$20,885,004.01	\$20,881,600.34
4/30/2019	E4h	\$8,840.00	\$20,881,600.34	\$20,872,760.34
5/16/2019	PIC Site Visits	\$6,675.21	\$20,872,760.34	\$20,866,085.13
5/21/2019	Halsa Consulting	\$30,000.00	\$20,866,085.13	\$20,836,085.13
5/31/2019	E4h	\$5,613.12	\$20,836,085.13	\$20,830,472.01
6/20/2019	Halsa Consulting	\$5,063.97	\$20,830,472.01	\$20,825,408.04
10/29/2019	Cx Associates and GeoDesign	\$8,466.00	\$20,825,408.04	\$20,816,942.04
November 2019	Cx Associates-Commissioning	\$734	\$20,816,942.04	\$20,816,208.04
	GeoDesign- Borings and Analysis	\$17,006.92	\$20,816,208.04	\$20,799,201.12
	E4h-Architectural Design	\$315,514.62	\$20,799,201.12	\$20,483,686.50
	E4h-Architectural Design	\$249,668.32	\$20,483,686.50	\$20,234,018.18
December 2019	GeoDesign-Borings and Analysis	\$958.50	\$20,234,018.18	\$20,233,059.68
	Dubois/King-Traffic & Parking	\$2,038.28	\$20,233,059.68	\$20,231,021.40
	Dubois/King- Traffic & Parking	\$7,351.01	\$20,231,021.40	\$20,223,670.39
	Dubois/King-Traffic & Parking	\$12,289.25	\$20,223,670.39	\$20,211,381.14
	Dubois/King- Traffic & Parking	\$8,537	\$20,211,381.14	\$20,202,844.14
	Vermeulens- Cost Accounting	\$32,400	\$20,202,844.14	\$20,170,444.14
January 2020	Cx Associates-Commissioning	\$633.50	\$20,170,444.14	\$20,169,810.64
	GeoDesign- Borings and Analysis	\$19,571.18	\$20,169,810.64	\$20,150,239.46
	GeoDesign- Borings and Analysis	\$13,049.50	\$20,150,239.46	\$20,137,189.96
	E4h- Architectural Design	\$177,598.28	\$20,137,189.96	\$19,959,591.68
	E4h- Architectural Design	\$132,410.80	\$19,959,591.68	\$19,827,180.88
	Dubois/King- Traffic & Parking	\$2,497.00	\$19,827,180.88	\$19,824,683.88
	Dubois/King- Traffic & Parking	\$898.00	\$19,824,683.88	\$19,823,785.88
	Dubois/King- Traffic & Parking	\$7,735.34	\$19,823,785.88	\$19,816,050.54

Project Timeline

The UVMHN-CVMC team has been working on an accelerated timeframe throughout the design process in support of the goal of improving adult inpatient psychiatric capacity in Vermont, in the shortest possible timeframe. This accelerated timeframe resulted in the overlap of the design and cost estimating phases. We proceeded with developing a robust schematic design concurrently with programming to have the information needed for the CON submission.

As stated earlier, the focus of our facility planning team going forward will be on identifying and then evaluating more affordable options on the CVMC campus for the inpatient psychiatric unit. We will leverage the work and input received to date in these efforts and will keep our planning workgroups fully engaged as we move forward.

This additional work will mean a delay in submitting the CON for this project. At this time, a revised timeline for the CON submission is not possible. We will keep the Board closely apprised of our progress as the planning advances. Additionally, we will focus on refreshing our original data analysis and vetting the results with internal and external stakeholders.

Timeframe	Milestone
May, 2019	Facility Programming Complete
June, 2019	PIC Facility Location Identified
August, 2019	ED Programming Complete
January, 2020	ED and IPP Schematic Designs Complete
March, 2020	Schematic Design Cost Estimates Complete: Current Design
tbd	Approval of Revised Scope and Cost
tbd	Business Plan Complete
tbd	Business Plan Approvals
tbd	CON Submitted

Conclusion

We are committed to engaging in the necessary steps to reconsider the scope of this project to present a more affordable option to improving access to adult inpatient psychiatric care that will best serve our patients, families, community and staff.

Our next quarterly report is scheduled to be submitted on May 15, 2020.

Appendix: Inpatient Psychiatric and Emergency Department Schematic Design

What follows is a summary of the design efforts to date, including floor layout, parking study, building design, site planning and design, permitting and cost estimating. This collaborative design process included input from patient and family advisors, peer advocates, providers and nurses from across the UVMHN and from the Vermont Psychiatric Care Hospital to ensure best practices are implemented.

Overall Design

The building design is a four-story structure, with a partial basement, directly connected to the existing hospital and the adjacent medical office buildings. The current design requires a two-story connector between a new parking garage and the current lobby of the hospital. Site improvements include additional surface parking, grading, and site circulation modifications.

(We have included the current layout of each floor. These layouts are representative of where we are in the process at the time of this report. At this time, we do not have any graphic representation of the building exterior beyond the massing shown below.)



Fig. 1: BUILDING MASSING

Basement Level

The basement is sized to house a portion of the building's mechanical systems. From the east side of the campus, the basement is at-grade, level with the pedestrian drop-off zone at the new entry connector.



Fig 2: BASEMENT FLOOR PLAN

First Floor

The first floor is comprised of the Emergency Department (ED), a Psychiatric Transitional Care Area (TCA) and ED-specific diagnostic imaging. The ED portion consists of two care-team pods. One pod is the main patient care pod, while the second is designed to flex up and down with patient volume, as needed.

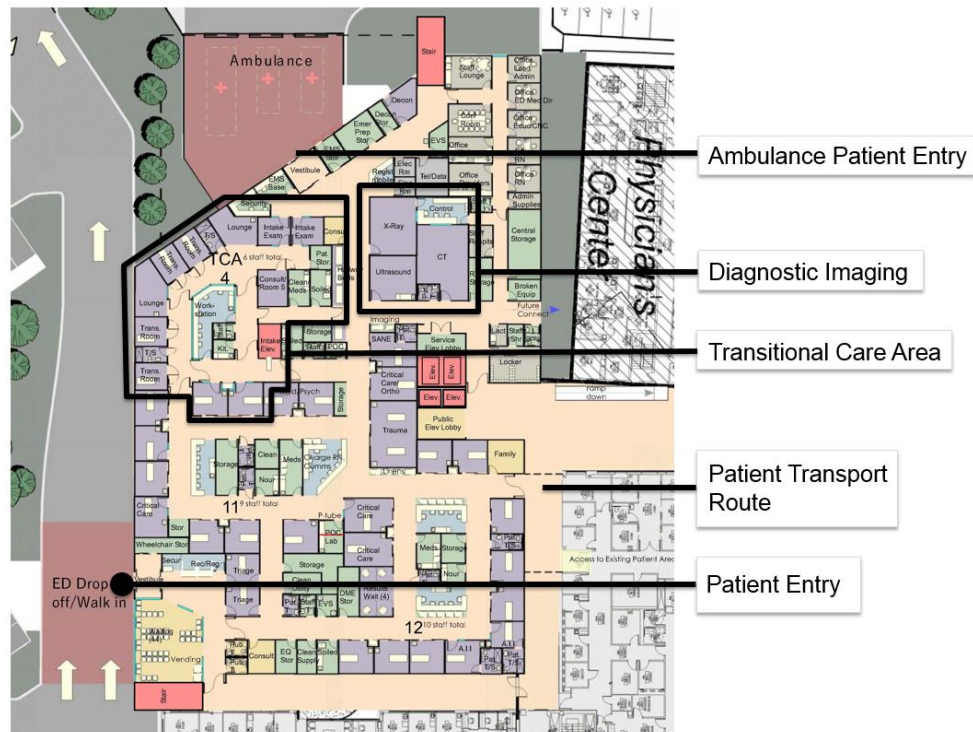


Fig 3: FIRST FLOOR PLAN

Second and Third Floors

The second and third floors of the building house forty adult inpatient psychiatry beds and associated spaces for patient care. The second floor consists of an 8-bed, Tier 1 unit and a 16-bed, Tier 2 unit. The Tier 1 unit can easily be subdivided with doors into two smaller units, if needed for optimal patient care and safety. These units are separated by a centrally located support core. The core includes intake spaces for the units, as well as primary vertical circulation for patients, the public, and hospital services.

The third floor includes sixteen, Tier 3 beds, divided into two 8-bed areas, also divided by the support core. Each unit has direct access to outdoor roof garden space from the living/dining area. The design on all floors prioritized flexibility.



Figures 4 & 5: SECOND AND THIRD FLOOR PLANS

Fourth Floor

The fourth floor is primarily dedicated to the buildings mechanical systems, with approximately one quarter of the floor housing office and support space for psychiatric services. This building is structured to allow the construction of additional medical surgical floors in the future in support of CVMC's long term master facilities plan. The design of the interstitial floor allows the inpatient floors below to remain in operation during any future vertical construction.



Figure 6: FOURTH FLOOR PLAN

Parking Study

A comprehensive parking study was performed by Dubois & King Engineering to determine parking lot utilization rates per lot for each hour of the day. This data was reviewed against Institute of Transportation Engineers (ITE) Parking Manual Utilization estimates for hospitals and medical office buildings proportionately based on building use on the CVMC campus. It was also reviewed with CVMC staff to identify longer term program trends. Projections for future parking needs were developed based on square footage, comparable facilities and staffing models for the proposed addition.

The parking study identified the need for new parking to be developed to accommodate 418 spaces. This parking space count addresses both the parking loss associated with the footprint of the new building and new parking needed for the additional services on the campus (see table below).

The site design for the project maximizes all viable options and available land for surface parking on the campus, resulting in the addition of 123 spaces. The projected remaining need is

295 spaces. The parking study analyzed the number of spaces required and the appropriate locations for patient and visitor parking with respect to travel distance to the new building entry and main lobby. The most efficient solution for these spaces is structured parking, allowing us to keep all parking on the CVMC campus and proximate to the building. These considerations necessitate a parking garage sized for approximately 295 spaces.

Existing total parking	824
Current parking deficit	44
Projected ambulatory reuse of existing ED	56
Projected additional need for new IP/ED	140
TOTAL CVMC PARKING NEED POST-CONSTRUCTION	1064
TOTAL LOSSES DUE TO CONSTRUCTION	(178)
GROSS NEW PARKING NEED	418
NEW Surface Parking (maximizes available surface parking on CVMC campus)	123
Patient and Visitor Garage Parking	295

Table 1: Existing and Proposed Parking Counts

Site Planning and Design

The CVMC campus is constrained by a ravine to the north, steep slopes to the southeast, multiple power lines and easements, and five buildings spread across the campus. Any new construction on the campus is impacted by these constraints as well as the existing sloping topography across the site. The site of the proposed new Emergency Department and Inpatient Psychiatry Units was identified as the most viable during the planning stage, as it allows for a direct connection to the existing building and affords flexibility for future growth on campus.

To implement the parking plan on the campus in the most cost-effective manner possible, we are addressing a significant pre-existing condition, the power lines and associated easement crossing the CVMC property. We are in discussion with Vermont Electric Power Company to reroute the lines. This would allow for the construction of a compact rectilinear parking garage while avoiding the steep slopes to the southeast and the underground fuel storage to the south.



Figure 7: SITE AERIAL WITH POWER LINE EASEMENT

Another condition that needs to be addressed is the approximately eight-foot elevation difference between the hospital access road and the hospital building. The grading modifications will be included as part of the site and landscaping plans in the schematic design package. While substantial, these modifications are necessary for safe vehicular, pedestrian and ambulance flow across the campus.



Figure 8: SITE SECTION SHOWING GRADE FROM HELIPAD TO AMBULANCE ENTRY

As depicted in Figs. 7 and 8, the helipad will be relocated to the west of the building. This location is at a similar distance from the ED as the existing helipad.

Permitting

CVMC and the design team have met with local and state agencies to engage in introductory permitting conversations. To date, meetings have been held with the Town of Berlin Zoning Administrator, the Town of Berlin Selectboard, the Central Vermont Regional Planning Commission, and the Act 250 District Coordinator. The results of these meetings and all of the work to date on the project will inform future decision-making.

Cost Estimating

We recently received a conceptual project estimate ahead of the schematic design estimate. The team is completing the schematic design estimate in the coming weeks which will provide clarity on the costs and help to direct any alternative solutions. These more detailed construction and equipment costs, along with estimated design fees, permitting fees, and other anticipated soft costs, will be used as we move forward.

The detailed work completed to date contains valuable and transferable programming, design and cost information applicable to future options and considerations.