

# Establishing Regional Medical Campuses to Ensure Comparable Experiences: Recommendations From a Narrative Review

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## ABSTRACT

**BACKGROUND:** Given increasing class sizes and desires to keep costs down, many medical schools are developing regional clinical campuses. We found our regional campus system to be very successful in allowing class size expansion, inspiring a workforce for the state, and concurrently allowing our students to individualize their experience. We desire to articulate our experience, with a review of the relevant evidence, with the goal of assisting other medical schools in their efforts to develop regional medical campuses.

**METHODS:** We conducted a narrative literature review to identify considerations for developing regional campuses, taking into consideration our experiences in the process. A medical librarian undertook a literature search for the purposes of this narrative review.

**RESULTS:** Of the 61 articles identified, 14 were included for full-text review. Five facets on branch campus development were identified: relationships, infrastructure, curriculum, recruitment, and accreditation. Within each of these facets we provide further details based on findings from the literature complemented by our experience.

**CONCLUSIONS:** Launching a regional campus requires building relationships with clinical partners, ensuring an infrastructure that supports student need and accreditation, comparable curriculum with the same objectives and assessment measures, and aspects of the experience that inspire a student desire to learn in that setting. We share our experience in building successful branch campuses, which have added significantly to our large public school of medicine and its service to our state.

**KEYWORDS:** Medical student, regional campus, narrative review, accreditation

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Regional medical campuses are well described in the literature and continue to increase in number.<sup>1–3</sup> U.S. medical schools have responded to calls to increase class size, and with increasing numbers of students matriculating, medical schools face challenges meeting the needs for clinical medical education. Regional campuses are able to provide a number of benefits such as expanded service to the state,<sup>4</sup> clinical teaching opportunities,<sup>5</sup> and efficiencies for the central campus of the medical school.<sup>6</sup> In addition, the regional campuses can incorporate innovative experiences for learners to better address needs of the surrounding communities.<sup>4</sup>

The University of North Carolina School of Medicine (UNC SOM) is a large public school with the mission of improving the health and well-being of the citizens of the state and others whom we serve. To accomplish this mission, we have found the most efficient and cost-effective public medical education includes the utilization of regional clinical campuses. The regional campus model allows us to have a very large medical school class size (currently 190) and concurrently individualize our student experiences based on the attributes of the local communities.

All students complete their preclinical education on the main campus by taking advantage of our university infrastructure and diverse faculty. For required clinical rotations, students are assigned to clinical campuses through a ranking process. Often, students complete elective clinical rotations at the same campus. At the regional campuses, the low clinical faculty to student ratio coupled with high patient census provides an optimal environment for apprenticeship.<sup>7</sup> Comparable clinical education is offered at each site; however, the campuses have different strengths allowing students to tailor their experiences.<sup>8</sup> We have 3 regional campuses and are likely to develop more.

Despite literature citing the benefits of regional medical campuses, to date, there has only been one guide offering considerations when developing regional medical campuses.<sup>9</sup> This guide is based on expert opinion; however, specific examples to support the recommendations we felt was lacking. Therefore, we examined the literature documenting evidence to support steps necessary for developing a regional medical campus including specific examples from our extensive experience.



**Table 1.** Narrative review search strategy.

((schools, medical[mesh] OR medical education, undergraduate[mesh] OR "medical school"[tiab] OR "medical schools"[tiab] OR "medical education"[tiab] OR "medical student"[tiab] OR "medical students"[tiab]) AND (satellite\*[ti] OR branch\*[ti] OR regional[ti])) OR ((regional[ti] OR satellite\*[ti] OR branch\*[ti]) AND (school\*[ti] OR campus[ti])) OR ((branch\*[ti] OR satellite\*[ti] OR regional\*[ti]) AND campus\*[ti])

## Methods

We conducted a narrative review of the literature on regional medical campuses. The purpose of narrative reviews is to synthesize existing literature to either address questions or explore new directions. Unlike systematic reviews, narrative reviews do not require a focused, and sometimes limiting, research question. Using a narrative review to build upon Snadden et al<sup>9</sup> was determined to be the best approach for our objective. Guidelines for narrative reviews are detailed by Ferrari.<sup>10</sup>

### Search strategy

In July 2019, our research librarian searched Medline and PubMed for English-language literature published in peer-review journals. Two of the authors (G.L.B.D., J.S.B.) conceptualized this project and crafted a list of search terms. With the help of the medical librarian, the search was refined based on her recommendations. The search strategy is given in Table 1.

### Study selection criteria and process

We included studies in this review if (1) the study was available in English, (2) the study involved a regional medical campus as defined by Cheifitz et al,<sup>2</sup> and (3) the study reported observational or interventional outcomes for developing regional campuses. The librarian's electronic database search yielded 61 studies, including 1 systematic review. Abstracts for all 27 studies were screened for eligibility. Of the 20 for full review, 14 met inclusion criteria (Figure 1).

### Data extraction

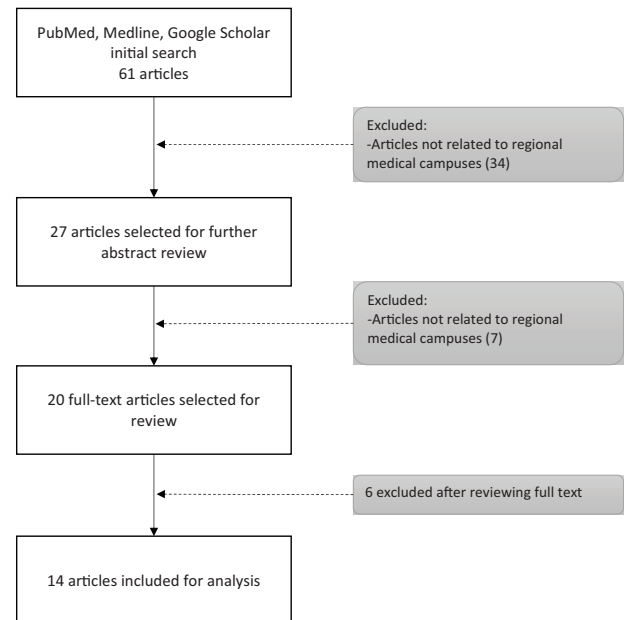
We extracted data from the studies to develop a systematic approach to developing regional medical campuses. This approach allowed us to integrate evidence from the literature with our experiences in this process.

## Results and Discussion

From our review of the literature, evidence for establishing regional medical campuses can be grouped into 5 categories: relationships, infrastructure, curriculum, recruitment, and accreditation. Embedded within these categories are specific recommendations for launching regional campuses. Table 2 lists included articles and key findings from their work that informed this analysis.

### Relationships

*Build relationships with a clinical partner.* The key in establishing a clinical campus is developing a mutually beneficial

**Figure 1.** Search strategy and article selection process.

relationship with an interested clinical partner.<sup>11</sup> A successful clinical campus demands investment from both sides—the home institution and the local site. If expanding to the clinical site in question broadens the portfolio of offerings from the school without compromising quality, the medical school benefits tremendously. The regional campus site benefits from the reputation enhancement of having an academic operation in its setting, broadening its opportunities for its clinical faculty to include teaching, and, typically most importantly, bolstering the workforce pipeline.<sup>12</sup> Our experience suggests that sites most interested in developing clinical campuses are those who hope to recruit clinicians long term to serve in their communities.<sup>13,14</sup> This can include filling local residencies with high-quality applicants and/or developing relationships that may lead to long-term work commitments.

Separating the educational relationship from the clinical relationship is possible, though certainly relationships are easier when the health system most closely associated with the school is not in direct competition with the next clinical entity asked to support additional learners. Ideally there is enough distance between regional campuses to avoid direct competition for patients. If campuses are within the same health care system, this should not pose a challenge. However, when regional campuses are established with other health care systems, discussions should occur early to address potential conflicts before they occur.

Thus far, UNC SOM has established regional campuses with health systems where there is no competition for patients.

**Table 2.** Key findings for included studies.

FIRST AUTHOR	KEY FINDINGS	CATEGORY
Toomey <sup>11</sup>	Participants described benefits of developing regional campus extended to key stakeholders and network partners for the medical education program.	Relationships, Recruitment
Ramsey <sup>12</sup>	Reports development of the program over the course of many years along with important components of program evaluation.	Relationships, Recruitment, Accreditation
Utzschneider <sup>13</sup>	Focuses on building relationships in the community, resulting in graduates returning to the area to practice.	Relationships
Lovato <sup>14</sup>	Investigated the impacts on the communities, noting benefits beyond building a workforce pipeline.	Relationships
Hansen <sup>15</sup>	Details development of the Yankton Ambulatory Program and measures of comparability of their students to main campus.	Relationships, Accreditation
Lorenzetti <sup>16</sup>	Reports the development of the program in West Virginia, noting curriculum development and program evaluation	Relationships, Curriculum, Accreditation
Rackleff <sup>17</sup>	Focuses on basic science regional campuses, but provides details about infrastructure needs.	Infrastructure
Norris <sup>18</sup>	Reports the expansion of the Washington, Wyoming, Alaska, Montana Idaho program.	Infrastructure
Hays <sup>19</sup>	Describes their focus on improving community stakeholder health care needs.	Curriculum
Lévesque <sup>20</sup>	Reports innovative evidence-based medicine curriculum on one campus, noting comparability with main campus.	Curriculum
Walmsley <sup>21</sup>	Reports innovative interprofessional education hands-on experiences on one campus, noting comparability with main campus.	Curriculum
Crump <sup>22</sup>	Describes challenges and potential solutions of recruiting students to go to regional campuses for clinical experiences.	Recruitment
McKendree <sup>23</sup>	Although not describing regional campus experiences, this study provides frameworks for assessing comparability for accreditation purposes.	Accreditation
Adkins <sup>24</sup>	Reports long-term outcomes of the Washington, Wyoming, Alaska, Montana Idaho program and its impact on workforce.	Accreditation

However, the landscape of health care system partnerships is constantly changing, which has required UNC to closely monitor events at 2 of the 3 campuses. A large, for-profit health care system recently purchased a former nonprofit health care system at one campus. At another campus, the local government is seeking a health care system to assume ownership of its county-owned hospital. In both instances, the impact on medical education or even market share of patients is unknown, but it speaks to the need for active monitoring and advocating for our medical education.

*Establish and clarify central governance at the School of Medicine main campus.* Medical school accreditation standards in the U.S. demand primacy of the main campus leadership. For regional campuses to be successful, it is essential that the relationship be strong and respectful with good communication. Clarity with respect to accreditation is essential at the start. The expectation to defer authority to the main campus can understandably be a frustration at the local site and therefore must be emphasized and understood from the start. That said, it is crucial that local faculty at the campus are treated with the utmost respect, inviting genuine engagement with the main

campus faculty and providing local faculty with autonomy where that is allowed by accreditation standards.<sup>11,25</sup>

On geographically distributed campuses, management is complex with multiple layers of reporting. Often times, the regional campus site is associated with a private health care system. The regional campus leadership not only have to report to the local health care system leadership but also have to balance that with the academic leadership from the central campus. We approached these relationships with the regional campuses using a Balanced Matrix Organization framework.<sup>15,26</sup> This framework originates from the business world because it promotes diverse input from across the organization, stimulates efficiency by combining resources, and encourages shared leadership toward common goals. This framework helped to establish clear lines of communication and decision-making.<sup>8</sup>

To operationalize the Balanced Matrix Organization, a director of the educational activities at the local campus must be identified early. The leader should have adequate authority and credibility to commit to meaningful communication with the main campus and effectively provide direction to local faculty. They must be capable of influencing effectively on both sides to create an optimal relationship. We have called this

individual the Campus Director while the site is in development, and then we transition them to be an Associate or Assistant Dean of the School of Medicine when the campus is formally established.

Based on our experience, fostering relationships takes regular interactions. Many in person, phone, and video conference meetings will be required by stakeholders initiated by both main campus and regional campuses. Early investment in these activities, and establishing a pattern of regular participation, are keys to success.

*Pilot clinical disciplines.* For new clinical campuses, it is uncommon to expect students to complete a year-long clinical experience. Typically, the relationships build around one or a few clinical disciplines where relationships are strong and faculty are willing to champion the process.<sup>11</sup> Site directors for these courses are identified and then clerkship directors from central campus and site directors work to recruit preceptors and to provide faculty development about course expectations including curriculum objectives and student assessment.

Comparability is essential so the same goals, objectives, and assessment measures must be continually ensured. Gradual implementation, perhaps starting with clinical experiences locally with video-conferenced delivered didactics and assessments delivered at the home campus, is often effective. Before students start, the school must ensure faculty appointments for all who evaluate students or are significantly involved in the teaching.<sup>25</sup>

To ensure faculty appointments for campus educators, the UNC SOM approached this requirement in 2 ways: a revised policy and streamlined process. Clinical departments grant appointments for regional campus faculty. However, each department used its own application requirements, nomenclature for appointments, and path to promotion. Lack of consistency between the UNC clinical departments was first detected by our campuses, prompting the school to develop and implement a policy. Our regional campus educators now receive consistent titles and communication on promotion. The administration of a single faculty appointment requires work with multiple parties, including UNC Human Resources, UNC clinical departments, UNC Office of Medical Education, and Campus representatives. In the past, the number of stakeholders led to muddled communication and lack of responsiveness. To remedy the issue, the Office of Medical Education named a staff member a liaison for all of these parties. This staff member serves as a single point of contact and clearinghouse of paperwork, bringing accountability to a process that previously lacked a clear owner. The UNC Office of Medical Education also covers the expense of background checks as a gesture of collaboration with clinical departments.

*Develop each discipline to provide a full year experience for students.* To become a formally recognized campus, a 12-month clinical experience for medical students must be offered at the

site.<sup>16</sup> This expectation is necessary to ensure consistent experiences for any student who will be assigned there. It has been our experience that getting all clinical disciplines on board has been a limiting factor at several sites, and the limiting discipline has varied at different sites based on local factors. We continue to have sites that could become formal campuses if they could develop just one more clerkship.

### *Infrastructure*

*Commit and create a sustainable budget.* Before applying to the Liaison Committee for Medical Education (LCME) for formal recognition and permission to deploy a campus, medical school and local campus leadership must commit to the relationship.<sup>17</sup> How that will be accomplished depends on the governance of the university. In our case, in addition to endorsement from the Dean, this process requires approval from the School of Medicine Education Committee and awareness and informal support from the leadership of the University including the Chancellor, Board of Trustees, and Board of Governors. This will vary depending on your school's governance structure.

Typically, when a formal agreement is established, outlining a budget that will support sustainability is required. While the LCME does not specify details regarding how financial support is accomplished, it does assess for adequacy of financial resources to support the campus.<sup>25</sup> Multiple different models for funding regional campuses exist and will vary based on the value brought to each side of the partnership. A straightforward model we have used after investment to establish the campus is to transfer state funds/tuition support to the campuses on a per student basis.

*Ensure adequate facilities and services.* To designate a site as a campus and allow students to be at that site for at least a year of their experience, the school must ensure student services to be delivered at that campus are similar to the central campus. For U.S. medical schools, specified student services include access to student health (including mental health care), personal counseling, academic and career advising, financial aid, and associated administrative expertise.<sup>25</sup> Expectation for the facilities at a regional campus is specified by accrediting bodies and tailored to the student body size.<sup>25</sup> For example, there must be call room space, wellness space, essential academic supports such as library access, and adequate patient volume.

Student health sometimes presents a challenge, especially because clinicians who care for students as patients cannot participate as faculty involved in teaching or assessing students. As exemplified by the University of Washington School of Medicine,<sup>18</sup> we have addressed this challenge through partnership with local branches of the University of North Carolina system in the geographic areas where our regional campuses are located. For example, our medical students in Asheville can be treated by student health services at UNC Asheville though

they are not enrolled at that institution (they are enrolled at UNC Chapel Hill).

For a very small class size, providing academic and career advising as well as financial aid counseling can be accomplished by main campus leaders if there are frequent enough visits and utilization of videoconferences. Ideally, however, local faculty and staff will be identified to work in partnership with their main campus counterparts to ensure comparability of support. In addition, arrangements can be made with the local university's financial aid office to answer general questions, even though it is not a medical school.<sup>9</sup>

The UNC SOM relies on financial aid staff to travel to campuses or use telecommunications on a regular basis to deliver information. This model works, given that all financial aid is centrally managed and the need for communication operates on a predictable timeline. On the contrary, academic counseling requires a different approach. While the school centrally establishes academic advisors that follow students throughout the 4 years, it was clear that there was a need for local, in-person campus support that offered easy accessibility. At UNC SOM, each campus has a designated faculty member who works directly with the centrally established Office of Academic Excellence and Advisory College to address learning difficulties and provide academic assistance. These offices and the local academic support liaisons work in tandem to longitudinally track student progress.

### *Curriculum*

*Determine curriculum.* Many regional campuses are sites of parallel (distinct) curriculum delivery, although that is certainly not required. Comparability of the curriculum, with expectation of the same learning objectives and assessment measures, is required though methods of curriculum content delivery can vary.<sup>25</sup> The opportunity to deploy innovative curriculum is often enhanced by the fact that there are typically a smaller number of students present at a regional campus site, allowing for a more personalized experience. In addition, they have developed curricula locally to address unique needs of the community that have been adopted across all sites.<sup>8</sup> Two of our regional campuses are structured as longitudinal integrated clerkships (of different lengths) for most of the required clinical phase of the curriculum.<sup>16</sup> This initially posed challenges; however, using structured reporting mechanisms has ensured comparability regardless of the calendar design of the clinical experiences on the different campuses.<sup>8</sup>

*Develop unique features of the campus.* While geographic difference is typically the most obvious source of variation among campuses, it is helpful in the long term for sites to develop distinct features that can be used to enhance the recruitment of students. For example, some have an emphasis on serving the underserved rural or urban communities,<sup>19</sup> offer an enhanced curriculum in evidence-based medicine,<sup>20</sup> or expanded

experience in interprofessional education.<sup>21</sup> At the UNC SOM Wilmington Campus, our students earn a certificate in the business of health care after completing an additional curriculum there beyond our core. An ideal outcome, from our perspective, is to have the students have difficulty choosing how to rank the campuses because they would like to have the opportunity to try each one.

### *Recruitment*

*Recruit students.* Once approval is obtained, the first cohort of students can be recruited. It has been our experience that the first cohort should be all volunteers who are excited about participating in building something new. We have therefore started campuses with a cohort as small as 3 students for the whole year. Additional rotating students could be added for some courses.

After the campus is established, medical schools must decide how the ongoing practice of campus assignment will be determined. Some medical schools assign students to a particular campus through the admissions process. We have elected to have one admission process and then have students make campus selections in the spring of their first year through a ranking process. It is our opinion that this more effectively creates a mind-set of one student body community and avoids a perception of a tiered structure if one campus is more competitive to get into than another. The downside to this approach is the anxiety associated with requiring a student choice and distribution by a ranking process in the first year.

There is also a risk that students will not get their top choice using a ranking process. The need to maintain flexibility with assignments is vital. One study found that students opt out of regional campus experiences due to relationship or family issues, preference of the opportunities at the central campus site, or no ties to those communities.<sup>22</sup>

*Integrate faculty and provide faculty development.* Developing a shared understanding of one distributed school with different clinical sites is critical. This approach establishes uniformity and ownership among faculty and students.<sup>12</sup> We have worked carefully to use language to reference "our UNC students in Asheville" rather than "your Asheville students." Naming clinical campuses, including the main one, to reflect a single institution maintains this focus as well. For example, UNC School of Medicine Wilmington Campus references our campus in that location, whereas our (main) campus in Chapel Hill is referred to as UNC School of Medicine Central Campus.

In addition, we have celebrated several initiatives such as "Bonding across the Miles" to keep our students in one student body mind-set.<sup>11</sup> To that end, we ensure class meetings are teleconferenced and assure that campus directors are on all relevant listservs.<sup>8</sup> In addition to monthly meetings of leadership across all campuses, campus directors have voting seats on the curriculum committee which meets by video conference.

In-person meetings hosted at rotating campuses occur each trimester to foster relationships and build familiarity with the different sites.

Over time and with enhanced faculty development, more and more responsibility can be taken on at the developing clinical site. While the faculty development typically focuses on the teaching mission at first, it is important that it evolves to include education regarding the faculty promotion process, research skills, and other aspects of being academic faculty. Faculty at the local campus can be appointed in “adjunct” status, but should be integrated into their departments. Methods of engagement that have been successful for us include mutual visits by leadership, faculty development days, broadcast grand rounds series within departments, shared scholarly work, committee service by regional campus faculty, specific awards for regional campus faculty, participation in the Academy of Educators, and celebrating regional campus faculty accomplishments in our main campus communications.

### *Accreditation*

*Inform accrediting bodies.* What the LCME requires formally is notification, first by contacting the LCME Secretariat and then documented by submission of the New or Expanded Regional Campus notification form.<sup>27</sup> The form requires documentation of various predictable factors such as location, timeline, number of learners, how students will be assigned, and of course curriculum.

The notification form also requires a thoughtful approach to how the faculty at the campus will be integrated into the School of Medicine, including how they will participate in curriculum governance and faculty development. Documentation of specified student services, including access to student health, mental health care, personal counseling, academic and career advising, financial aid, and associated administrative expertise, is required. The adequacy of financial support, facilities, and essential academic supports such as library access, and adequate patient volume must be assured.

The LCME may or may not choose to visit the regional campus site after the request is submitted. The LCME reviews these documents just 3 times per year so they must be submitted in adequate time before the full year at the campus is launched. We have informed the LCME of the development or expansion of our campuses over the last several years. The development of new branch campus in the eastern portion of the state in 2016 certainly required LCME communication and involvement. Two other campuses have increased enrollment significantly, also prompting an LCME notification on separate occasions.

*Evaluate outcomes.* With multiple campuses, it is important to evaluate outcomes for the purpose of ensuring comparability.<sup>12,16</sup> Both academic and long-term outcomes should be taken into consideration.

Typical academic outcome comparisons are mandated by the LCME.<sup>25</sup> Under the guidance of the Office of Academic Affairs, assessment forms based on our expected competencies were developed and implemented at all sites. This allowed us to demonstrate comparability of experiences using a single assessment tool. Other outcome measures, such as patient encounters and summative examinations, were also agreed upon for each site.<sup>8,15</sup> Other sources of data to demonstrate comparability impacting academic performance can be culled from learning environment surveys and student evaluations.<sup>23</sup> We accomplished this using end of course and end of year evaluations from students. These instruments allow us to compare student responses across campuses, highlighting strengths and identifying areas for improvement. Future studies are needed to systematically investigate the impact of regional campus experiences on objective outcome measures.

In addition, long-term outcomes of interest to various stakeholders typically include workforce development. Residency match outcomes across sites have been shown to be comparable regardless of the training site.<sup>24</sup> More importantly, studies have shown that students who completed their clinical rotations at regional campuses are more likely to return there to practice.<sup>13,28,29</sup> Therefore, it is essential to set up a long-term outcome tracking system for match outcomes and eventual job placement. We are currently working with the university’s workforce development analysts to develop a cohesive evaluation agenda that considers UNC SOM long-term outcomes as well as satisfying stakeholders at the state level.

### **Limitations**

This narrative review was very focused on reported outcomes related to regional medical campuses in indexed publications. As with any literature review, this may have limited our findings, but those articles meeting inclusion criteria provided ample evidence to support these recommendations. In addition, a search of the *Journal of Regional Medical Campuses* website outlining recommendations for how to establish regional campuses resulted in no publications.

### **Conclusions**

With impending physician workforce shortage projections,<sup>30</sup> medical schools have expanded class sizes to address this issue. However, limited clinical capacity at many medical school campuses limits students’ educational experiences. Establishing regional medical campuses for clinical training is a cost-effective way to provide high-quality training. It is also a way to establish a workforce pipeline to smaller communities.

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### Author Contributions

GLBD and JSB conceived of this narrative review and drafted the initial manuscript. JHF provided further details about the UNC experience. Each author gave final approval of the submitted manuscript.

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