Planting TREES in Rural Places

Training and **R**ural health professions **E**ducation that is community **E**ngaged and **S**ustainable
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Community Engaged Residency Education in Rural Places is an organic place-based process for discerning community capacity for residency education, building upon the assets of rural places and the distributed expertise of communities and medical educators, and together meeting the healthcare needs of rural people. Like the organic architecture launched by Frank Lloyd Wright over a century ago, it starts with what is and imagines what could be – any rural place has some capacity.

Randall Longenecker 2015

Background

This packet outlines a process for academic-community engagement and collaborative decision-making. It was initially developed by Randall Longenecker MD and David Schmitz MD in collaboration with Family Medicine Residency of Western Montana in 2015 and initially funded by a HRSA Residency Training in Primary Care grant and the RTT Technical Assistance program grant. Initially called "CERE-R" it was renamed "TREES" for **T**raining and **R**ural health professions **E**ducation that is community **E**ngaged and **S**ustainable. This current edition reflects modifications in use by The RTT Collaborative with rural communities over the past seven years.

Community engaged medical education (CEME) is a strategy and process described by Roger Strasser and others in developing a medical school in rural places in Northern Ontario.[1] A subsequent article reviews the history of community engagement in medical education over the past century and a progression from education "about" communities, to education "in" communities, to education "with" communities.[2] This evolution can be described as follows:

- Community-oriented medical education – Communicating a body of knowledge to students about practicing in communities
- Community-based medical education – Finding a place to train students and residents in context
- Community-engaged medical education – Following a strategy that engages both learners and community members in addressing a specific community's needs, and building upon the assets of the rural community for the benefit of both community and learners

CEME parallels the approach taken by other proponents of place-based education.[3,4,5] Organic design of a place-based education starts with what is local (assets as well as challenges) and builds from there.[6] It modifies and uses bits and pieces of many educational frameworks, rather than imposing any one model. It embraces the importance of context in education and training, as important if not

[1] *Tesson G; Hudson G; Strasser R; Hunt D, Editors. The Making of the Northern Ontario School of Medicine: A Case Study in the History of Medical Education.* Montreal/Kingston: McGill-Queen's University Press, 2009.
[2] Strasser R; Worley P; Cristobal F; Marsh DC; Berry S; Strasser S; Ellaway R. "Putting Communities in the Driver's Seat: The Realities of Community-Engaged Medical Education," *Academic Medicine,* November 2015;90(11):1466-70.
[3] Horton M, Freire P. We Make the Road by Walking: Conversations on Education and Social Change. Philadelphia: Temple University Press, 1990.
[4] Gruenewald DA, Smith GA. Place-based education in the global age: Local diversity, New York: Lawrence Erlbaum Associates; 2008.
[5] Longenecker R. "Curricular Design: A Place-Based Strategy for Rural Medical Education," in Bell E; Zimmitat C; Merritt J Eds. Rural Medical Education: Practical Strategies, New York: Nova Science, 2011.
[6] Longenecker R. An Organic Approach to Health Professions Education and Health Equity: Learning In and With Underserved Communities, J Health Care for the Poor and Underserved, November 2020, Supplement;31(4):114-119.

more important than its content.[7] Place-based approaches are framed around the assumption, now anchored in a growing body of evidence, that learning to live well as a physician in a rural place is critical to the professional development, recruitment, and retention of rural physicians.[8,9] Engaged communities of rural people and rural medical educators are in the best position to facilitate that kind of learning.

Community engaged residency education (graduate medical education or GME) was a new term introduced into medical education through this document in 2015. Although this package of tools is situated in the specialty of family medicine, it outlines a process that in concept can be applied to other ACGME accredited specialties, even other professions and disciplines (e.g., nurse practitioners). The prototypical models of GME that have been implemented in rural family medicine residency education are several, and have been organized into a typology of rural programs by The RTT Collaborative as recently as May 2022:

1. Rurally Located Program, with minimal urban experience (less than 3 required urban months, the converse of #5)
2. Rural Track Program[10,11] This new terminology is now being used in federal regulation and accreditation as a replacement for an RTT or integrated RTT. However, The RTT Collaborative is only using this term for separately accredited programs and is applying the phrase more broadly to include any program bridging rural and urban settings with at least 3 months of urban experience and greater than 50% training in a rural location by at least two federal definitions. (CMS and ACGME only accept locations as 'rural' if they are located in either a micropolitan CBSA or a non-metropolitan county; a separately accredited RTP is considered 'RPT1' by ACGME definition)
3. Urban Program with a Rural Track (RTP2, by ACGME definition) a defined track for selected residents who spend greater than 50% of their residency training in a rural location
4. Urban Program with a Rural Pathway, a structured sequence of rural training experiences for select residents, but less than 50% of total training
5. Urban Program with a Rural Focus (as indicated by a mission statement and at least 2 months of required rural experience; also termed in the literature as 'rural-centric'[12])
6. Urban Program with Rural Outcomes (as measured by equal to or greater than 50%[13] of graduates, or more than 3 residents a year on a three-year rolling average, locating in an initial rural place of practice)

The basic requirements for accreditation and finance can be met in a variety of ways by creatively choosing any of the above options for rural training and designing a program appropriately sized to the local community. Thresholds for development and implementation of a program are generally dictated by capacity and collective will (e.g., the number of available patients in meeting the requirements for accreditation, the availability of interested physician faculty or preceptors in number and time, and/or the number of external and internal dollars that can be committed to the

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[7] Schrewe B; Ellaway RH; Watling C; Bates J. The Contextual Curriculum: Learning in the Matrix, Learning From the Matrix. Academic Medicine November 2018; 93(11):1645–1651.
[8] Hancock C; Steinbach A; Nesbitt TS; Adler SR; Auerswald CL. "Why doctors choose small towns: A developmental model of rural physician recruitment and retention," *Social Science & Medicine* 2009; 69:1368–76.
[9] Cutchin M. "Physician Retention in Rural Communities: The perspective of experiential place integration," *Health & Place* 1997; 3(1):25-31.
[10] Previously identified as separately accredited "integrated rural training tracks" or 'rural track residencies,' frequently in the prototypical '1-2 format' – 1 year in the urban setting, then 2 years rural.
[11] Medically Underserved Areas and Populations, ACGME, https://www.acgme.org/what-we-do/accreditation/medically-underserved-areas-and-populations/
[12] Patterson DG, Andrilla CHA, Garberson LA. Preparing Physicians for Rural Practice: Availability of Rural Training in Rural-Centric Residency Programs. J Grad Med Educ. 2019 Oct;11(5):550-557. doi: 10.4300/JGME-D-18-01079.1. PMID: 31636825; PMCID: PMC6795329.
[13] Meyers P, Wilkinson E, Petterson S, Patterson DG, Longenecker R, Schmitz D, Bazemore A. Rural Workforce Years: Quantifying the Rural Workforce Contribution of Family Medicine Residency Program Graduates, J Grad Med Educ December 2020;12 (6): 717–726. https://doi.org/10.4300/JGME-D-20-00122.1

effort). These thresholds are best addressed through a careful capacity inventory of rural community resources and partnerships with other institutions. Thoroughly understanding the rules that govern accreditation and finance, and paying attention to sustainable governance, are essential to this task.[14]

Some communities, despite capacity, will choose a way forward based upon a preferred style or scale rather than simply going by the numbers. Some communities may not wish to expend their full capacity for health profession education on only training physicians. They may for good reason focus their efforts on another health profession or area of education. These are local decisions, shaped by community leaders and potential professional faculty. Healthy communities are generally "learning communities," communities eager to learn and improve and who embrace health professions education and training as contributing to their community's health – "growing (their) own" health professionals, in whichever sector a community chooses.

Finally, rural residency design with an eye to sustainability is not limited to a financial pro forma of direct income and expense in the short-term Good design addresses the indirect benefits to rural communities in the long-term.[15] Although difficult to measure, indirect benefits to both hospital and community have been estimated to be quite substantial, including:

- Reduced recruiting costs (estimated at >$50,000 per primary care physician)[16,17]
- Enhanced recruitment of both family physician faculty and specialty physicians who wish to teach
- Enhanced retention of both family physician faculty and specialty physicians who wish to teach (replacement costs for a primary care physician is estimated at $250,000 or more, and is generally greater for specialty physicians)
- "Contribution margin" and downstream revenue to hospitals (although difficult to quantify directly, many hospitals use this calculation in budgeting)
- Leadership development of existing medical staff
- Improved quality of care (Direct involvement of faculty and residents in quality efforts, indirect effect of a learning culture)
- Reputation as a teaching hospital
- Increased primary care clinical capacity and community access to care
- Other health professions education and training (a graduate medical education infrastructure can anchor an interprofessional campus of learners or 'teaching health neighborhood')
- Economic benefit to the community (Every faculty physician or resident recruited or retained has been shown to lead to $1-2 million in economic benefit to the community annually, particularly for those family physicians who practice obstetrics.[18,19]
- Community leadership by physicians and their families (many family physicians wear multiple hats in their community outside medicine, many have a professional spouse or significant other)
- Civic engagement by faculty, staff, and residents and their families
- Creativity and innovation in health care and community development

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[14] Longenecker R, Hawes E, Page C. Cultivating Healthy Governance in Rural Programs, J Grad Med Educ (2021) ;13(2):174–176. https://doi.org/10.4300/JGME-D-20-00825.1

[15] Longenecker R. "Sustaining Engagement and Rural Scholarship," *J of Higher Education Outreach and Engagement,* Fall 2002/Winter 2003; 8(1):87-97.

[16] Recruitment and Retention for Rural Health Facilities https://www.ruralhealthinfo.org/topics/rural-health-recruitment-retention (Accessed 9-29-2017)

[17] Brill J; Anderson A; Simpson D; Bidwell J; Schober B. An Independent Academic Health Care System Perspective on Developing an RTT: Workforce Planning, Market Analysis and Return On Investment, presented as a workshop at the RTT Collaborative Annual Meeting, Madison, WI, May 2015. https://rttcollaborative.net/wp-content/uploads/2017/03/10_Brill-Independent-Academic-Health-Care-System.pdf (Accessed 9-29-2017)

[18] Economic Loss to Community from Primary Care Practitioner Shortage, National Center for Rural Health Works, January 2007. http://ruralhealthworks.org/wp-content/files/PCP-Shortage-10-page-example-using-Noble-County.pdf (Accessed 9-29-2017)

[19] Avery DM; Hooper DE; McDonald JT; Love MW; Tucker MT; Parton JM. The Economic Impact of Rural Family Physicians Practicing Obstetrics, J Am Board Fam Med 2014;27:602–610.

Although the costs of physician education are substantial and can be predicted with some certainty, the benefits are not as easily counted. In developing the value proposition for a new or sustained residency program, benefits need to be calculated both in terms of short and long-term economic benefit to the hospital or health system and in terms of direct and indirect benefits to the entire community.[20] Included in this package is a tool that allows a rural community to choose its own assumptions to arrive at an estimated community impact specific to that community. (See EXCEL attachment)

The process

The process of community engaged GME begins with identifying a rural place and proposing that community as a site for health professions education and training. **Am I Rural?** is a good place to start in characterizing a location as rural, since this website not only identifies a specific street address as rural by several federally recognized definitions, but also characterizes an address, zip code or census tract as to its underserved status (HPSA, MUA/P). Once a rural place is identified (preferably by a team of administrative and physician leaders and community members, rural and urban, working together), organic program design proceeds in the following fashion:

1. Engage with the Community
    a. Following these "rules of engagement," build a coalition that is:
        i. Purposed for the health, development, and improvement of the community
        ii. Characterized by respect for autonomy
        iii. Built upon community assets and within the limits of community resources
        iv. Deployed with transparency in the setting of meaningful and respectful individual relationships and organizational partnerships
        v. Integrated from multiple perspectives, but all within the context of the local community
    b. Identify the community's readiness for change (as for motivational interviewing in patient care):
        i. Pre-contemplation (not yet ready to think about it)
        ii. Contemplation (considering the options)
        iii. Preparation (informed and committed to the effort)
        iv. Action

    Pause: If unable to build or sustain a coalition for the time necessary to implement the residency program; carefully document the process to this point and list the gaps and challenges for future reference, should the situation change.
2. Explore Community Capacity for Medical Education
    a. Use on-site interviews, templates, and focus groups to identify assets and limits, opportunities for achieving synergy and for mitigating deficits – locally in both the medical and non-medical community, as well as in the relevant regional academic and corporate communities,
    b. Study and learn the rules of accreditation and finance through self-directed learning, attendance at meetings, and/or tutoring from local experts in GME within a regional health care system or teaching hospital. Become thoroughly familiar with the ACGME Family Medicine Review Committee website and all that it has to offer, including an email or phone conversation with FM-RC staff. For resources particularly relevant to rural residency development, enroll at

[20] Pugno PA; Gillanders WR; Kozakowski SM. The Direct, Indirect, and Intangible Benefits of Graduate Medical Education Programs to Their Sponsoring Institutions and Communities. Journal of Graduate Medical Education: June 2010, 2(2):154-159. https://doi.org/10.4300/JGME-D-09-00008.1 (Accessed 9-29-2017)

https://portal.ruralgme.org/register for free access to an online toolbox of resources – webinars, templates, and others.

The STFM Residency Accreditation Toolkit is also a good guide but is focused on family medicine training and requires a membership in either STFM or AFMRD or a purchase fee of $250 for non-members. (The expense of a NIPDD fellowship should probably be deferred to the Step 3).

c. Enlist potential and committed leaders, faculty, and staff

d. Collect examples and templates from others (See Toolbox in this package as a start, and explore the ruralgme.org portal for many more)

Consult with experienced local, regional, or national peers and experts in residency program accreditation, finance, and governance. Join The RTT Collaborative, a community of practice in rural health professions education and training. Although the Collaborative provides formal consultation to anyone for a fee, it provides these services to participating programs at a reduced cost. The advice of a network of peers comes at no cost and becoming a participating program can be invaluable to a developing program in accessing this network.

e. Consider partnering with regional residency programs and/or medical schools in designing medical student and/or resident rotations, either as a way of easing into medical education or in recognition of the community's limited capacity. **It is very important, however, to not jeopardize residency financing in the future. Scheduled resident rotations in hospitals and CMS "provider settings" other than Critical Access Hospitals can permanently ruin future attempts to finance residency education under our current system.** These rotations may best be accomplished in ambulatory or other "non-provider settings." (Provider status is a CMS definition[21])

Pause (and either suspend or redirect efforts): If the necessary conditions cannot be met, either locally or through collaboration with regional urban centers; document the gaps and challenges for future reference, should the situation change.

3. Design the program and curriculum for accreditation, using an organic approach – creatively adapting the various prototypes, examples, and options for program design to the local context

a. Use examples and templates from others (See Toolbox in this package as a start, and explore the ruralgme.org portal for many more)

b. As a program with a rural mission, craft a curriculum that best fits your situation, referring to the list of typologies of rural programs.

c. This is the point at which formal consultation with entities who have deep knowledge of the rules of accreditation and finance can be very valuable, e.g. The RTT Collaborative (any specialty) or Residency Program Solutions (family medicine).

d. Attend the RTT Collaborative Annual Meeting, the Program Directors Workshop (PDW) and/or Residency Program Solutions (RPS) Workshop.[22]

e. Consider investing in faculty development for the potential program director, associate program director, or site director: NIPDD, ACGME Navigation, or others

[21] Provider Certification, 2010 - https://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/downloads/R57SOMA.pdf (Accessed 12-14-2018)
[22]Sanner L, Voorhees K. Medicare GME Payments: Background and Basics, Presentation at Program Directors' Workshop, 2018. https://www.aafp.org/dam/AAFP/documents/events/rps_pdw/handouts/res18-80-medicare-gme-payments-background-and-basics.pdf

Pause (and either suspend or redirect efforts): If accreditation is denied for a proposed program or continuity site; list the gaps and challenges for future reference, should the situation change

4. Develop a business plan with an eye to practical operations and sustainability – proformas, affiliations, letters of commitment, contracts, and other agreements; this is best done in concert (1) with an accountant who is familiar with graduate medical education finance, including an in depth understanding of the financing of rural programs (rural hospital types, rural health clinics, critical access hospitals, etc. and the nuances peculiar to them), and (2) with a consultant in governance of rural GME (e.g. The RTT Collaborative).[23]

   Pause (and either suspend or redirect efforts): If needed affiliation agreements cannot be forged, or the fiduciary agent (sponsoring institution or participating hospital or clinic) refuses to approve implementation because of financial predictions; document the process to date as well as listing the gaps and challenges for future reference, should the situation change

These steps may occur in sequence, but more likely occur concurrently and in iterative cycles, potentially throughout the two to three years that are required to develop and launch a fully accredited residency program. This process has been incorporated into a Roadmap for Rural Residency Development that also addresses other important developmental tasks.[24]

This organic process discourages an "all or nothing (go, no go)" approach, always leaving open the option for medical or other health professions education in any rural place, even if not now, then at least at some time in the future. Sticking one's "toe in the water" is possible by starting small and by engaging first in almost any type of health professions student education. **Because of the complexities of graduate medical education accreditation and finance, however, it is wise to seek counsel before initiating resident (or fellow) education, to avoid pitfalls like premature caps on the number of residents a hospital can train or inadvertent triggering of a low "per resident amount" for GME funding.**

Periodic assessments of capacity should always be considered **formative assessments** along the path to developing and sustaining GME activities and/or expanding options for rural rotations for residents, medical students, and other health professions students. These formative assessments are always anchored to a point in time and should be documented following this simple template for capturing the hospital and community's current and future potential for the development of one of the prototypical residency options described above:

1. Title, date, and authorship (including a history of updates)
2. A summary statement regarding community preparedness for GME activities, i.e., stage of change and progress to date
3. A list of active members of the current coalition
4. A current draft of the "Community Assets and Capacity Inventory"
   A current draft of the "Capacity Crosswalk"
5. Accumulated examples of best practices from others, including a list of references from the web and from the literature
6. A summary of identified gaps
7. Suggested next steps for closing the gaps, if applicable, and further steps in the development of existing resources
8. A decision to pause or proceed – never simply stop!

[23] Longenecker R, Hawes E, Page C. Cultivating Healthy Governance in Rural Programs, J Grad Med Educ (2021) ;13(2):174 – 176. https://doi.org/10.4300/JGME-D-20-00825.1

[24] Hawes EM, Weidner A, Page C, Longenecker R, Pauwels J, Crane S, Chen F, Fraher E. A Roadmap to Rural Residency Program Development, Journal of Graduate Medical Education August 2020;12(4):384-7. https://meridian.allenpress.com/jgme/article/12/4/384/445472/A-Roadmap-to-Rural-Residency-Program-Development

Introduction to the TREES Toolbox

The following tools and other resources are meant to be utilized in series or in parallel, and often overlap. Together they promote thoughtful explorations of and consideration of the perspectives of multiple stakeholders. While not meant to be exhaustive, sharing the entirety of even a partially completed template or inventory with each of the participants in the process promotes active engagement and meaningful conversation. As individuals consider these tools, they will hopefully develop an increased appreciation of the necessary partnerships and the level of collaboration that is required in the construction of a sustainable rural graduate medical education (residency) program. The exploratory process itself can help form new and generative relationships based on a better understanding of each partners' perspective and identification of common goals.

Each of the following tools are available in WORD or EXCEL as an attachment to the PDF (Click on the clip icon in the left menu of the PDF viewing page)

Community Assets and Capacity Inventory: A template for exploring community assets, challenges, and capacity for rural medical education and training (WORD)

More than a checklist, the process of completing this inventory will allow consideration of interrelated factors from the perspective of necessary partners. Reporters may include persons representing hospitals or clinics and other pertinent medical and non-medical community members, stakeholders, and organizations.

The inventory simultaneously investigates several quantitative and qualitative factors important to program accreditation, financing, and governance. Sharing the template with stakeholders allows the leaders of the process and participants to identify next steps, prompting additional conversations. Completing this inventory should identify key existing and potential local community and institutional partnerships and unique community-specific factors that can impact partner engagement, program development, and recruitment.

Crosswalk: Concept Mapping for Community Engaged Residency Education (EXCEL)

Use of this tool developed by David Schmitz MD and colleagues promotes conceptualization of important interfaces between the goals of a proposed medical education program and the context in which these goals may be operationalized. By examining the proposed program or medical education activity through the "lenses" at the top (triangle) of the diagram, you will determine how this perspective may be affected by the assets identified above.

The concept map is meant to serve as a tool for identification of opportunities and gaps that may be unique to your situation, while also helping to prevent unintended consequences or unrecognized pitfalls. Each community and planned medical education program may have differing goals as well as unique resources, challenges and cultures as related to mission alignment.

A graphic and sample crosswalk, as well as an appendix of potential issues to be considered are provided as a reference.

For more information and further links to resources read more about Health Professions Education in Rural Communities (HPERC) Community Apgar Project (HPERC).

Community Impact (EXCEL)

This simple EXCEL worksheet is intended to generate discussions among community members and partnering institutions. By entering basic assumptions, a general return on investment (ROI) can be calculated. Of course, community impacts and benefits are not easily measured, and many are indirect. Not every benefit can be claimed as the result of a residency program alone, but this tool at least attempts to expand the conversation about ROI beyond an annual cash proforma for the hospital, that excludes the community.

Community Assets and Capacity Inventory (Available as a WORD attachment to this PDF package, with a Psychiatry Addendum by Dr. Carlyle Chan, Wisconsin)
A template for exploring community assets, challenges, and capacity for rural medical education and training

Completed: [Date]

By: [Name or names]

General Questions for the Rural Community:

1. What do you consider your community's greatest assets?

2. What makes your community special or unique?

3. Why would anyone want to live in this rural community?

4. Are there unique assets that can be employed for recruitment/retention of physicians and their families?

   [e.g., recreational opportunities, opportunities for spouse/significant other and family, proximity to the amenities of a larger community)

5. Does the community have full and reliable cellular phone service and broadband connectivity?

6. What is the availability of housing for students and residents (either for limited rotations or longer-term)?

7. How does the community view newcomers, visitors, and outsiders?

8. Please list single words and brief phrases that characterize this community:

Health Professions Education in the Community

1. What are the local rural community's goals for participation or expansion of activities in medical education?

2. From your perspective how prepared is the community for initiating or expanding medical education activities?

3. What local community resources have potential mission alignment with medical education?

   [Consider: Chamber of Commerce, service clubs, community or technical colleges, religious organizations and faith communities, charitable organizations and foundations, economic development initiatives – financial assets as well as expertise]

Community Asset	Key contact, with email and/or phone

Who are the individual community leaders and champions in the support of medical education activities? What are their roles?

4. Have there been medical student and other health profession student training activities? Are there established relationships, teaching experience and an established culture of teaching?

   What is the history of graduate medical education/residency training in this community? …Under what affiliations?

   [Specify location and historical facts such as timeline of when these occurred, as it can affect accreditation (e.g., faculty experience level) and finance (e.g., Medicare funding for residency training)]

Health Profession/Stage of Training	Location/Facility & Town	Dates (years)

Have these activities been aligned and cooperative, or has there been competition for teaching resources?

Have these learners ever been taught as a team or in an interactive and deliberate interprofessional manner?

Other Community Concerns

1. What reservations does your community have regarding a new medical education endeavor?
2. What unique barriers can you identify regarding recruitment/retention of health professionals?

   [This question can be posed to start more difficult conversations in an honest and open way as related to experiences with providers who have left or declined to live in the community area (e.g., high crime rate, too isolated, other)]

Prospective Rural Family Medicine Practice

Name:
Location(s), including street address:

1. What is the clinic's goal in participating in medical education activities?

2. Who is (are) the most capable local physician "champion(s)" or leader(s) invested in residency development? How is this person associated with this practice – are they a practicing clinician in this location?

3. Who is (are) the local physician(s) most prepared for administrative duties? How is this person associated with this practice – are they a practicing clinician in this location? [May or may not be the same as previously identified above]

4. Who is (are) the administrative champion(s) of the proposed program? Is this person most associated with the clinic or the hospital, or both?

5. How prepared is the clinic to begin medical education activities (or expand if currently ongoing)?

6. If not presently, is there a perceived timeline for preparedness for beginning or expanding medial education activities? What are the most pertinent issues?

7. What is the financial structure of the clinic (e.g., multi-specialty group, RHC, hospital owned provider setting, FQHC, etc.)

8. What is the financial stability position of the clinic? Is there a preparedness to contribute financially to GME activities? Please describe.

9. What are the patient demographics (looking to meet FM RRC guidelines)?

   What percent (or number) of patients are under 10 years of age?
   What percent (or number) of patients are over 60 years of age?

10. What access do patients have to mental health services?

11. What is the number of FM physicians? …FTE? …Demographics (e.g., approximate age, gender, experience)?

    (This can affect role modeling, recruitment of students)

12. What is the number of patients seen by FM physicians annually in this clinic?

13. What EMR do you use if any for documenting patient care encounters by physicians?

    How adaptable is this EMR system to use by students for record entry (not orders)?

    How adaptable is this EMR system to use by licensed residents for record entry? For order entry?

    Is the clinic EMR integrated with the admitting hospital system EMR?

14. Do you have full wireless internet service?

    Do you have full and reliable cellular phone service?

    Do you have tele-video availability for administrative/teaching purposes?

    Do you have tele-video availability for patient care purposes?

15. Has the practice transformed to a PCMH? What level?

16. What is the level of experience and interest among the physicians in teaching; how many, how much and how strong?

17. What is the physical plant of the clinic and proximity to the hospital (potential FMP characteristics: office, precepting, library, meeting room, clinic rooms)?

18. What other specialties and sub-specialties, if any, share the clinic environment? How willing and interested are these sub-specialists in teaching?

Participating Rural Hospital

1 What is the hospital's goal in participating in medical education activities?

2 How do you perceive the past, current, and sustaining level of support for medical education training by administration and the governing body (e.g., Board)? Who is the governing body (e.g., local community Board, a corporate entity located elsewhere)?

3 How do you perceive the past, current, and sustaining level of support for medical education training by the nursing staff and administration?

4 How do you perceive the past, current, and sustaining level of support for medical education training by the physician medical staff?

5 What has been successful in motivating and sustaining staff support of other long-term projects in the past? [This question can prompt conversations regarding a culture of effective leadership, communication, and teamwork – regardless of the project, implemented change or challenge that was addressed (e.g., new EMR, quality projects, PCMH designation)]

6 What is the geographic size and population of the hospital's service area (HSA)?

7 What is the rural status of the participating hospital's geographic location (Am I Rural?)?

8 Are either located in a HPSA or MUA/P (Am I Rural?)?

9 Is the local hospital designated a rural hospital (For the purpose of its CMS cost report), a prospective payment system hospital (IPPS), a critical access hospital (CAH), or a special type of rural hospital – a sole community hospital (SCH), a Medicare-dependent hospital (MDH), a rural referral hospital (RRH), or other?

10 Is this hospital part of a larger health system and if so, what is the governance structure?

11 Does this hospital employ any physicians and does this hospital own or control a clinic(s)?

12 Does this hospital have a pre-established per resident amount or cap for graduate medical education (GME) due to prior resident activity and if so, what is that number? (If uncertain, consult the Rural GME Analyzer or the HCRIS data tool in the RuralGME toolbox?)

13 What is the number of admissions per year?

14 What is the percentage of Medicare, Medicaid, Medicare/Medicaid, self-pay, and other payer types?

15 What are the leading diagnoses for admissions if available?

16 What is the average daily census?

17 How many patients are seen in the emergency department annually?

18 Does the hospital have tele-video availability for administrative/teaching purposes?

Does the hospital have tele-video availability for patient care purposes?

19 What EMR do you use if any for documenting patient care encounters by physicians?

How adaptable is this EMR system to use by students for record entry (not orders)?

How adaptable is this EMR system to use by licensed residents for record entry? order entry?

20 What is the financial stability position of the hospital?

21 Is there a preparedness to contribute financially and invest in graduate medical education?

22 Are there any anticipated changes or plans for change in the physical plant in the next 5 years?

Hospital Scope of Services

1 What is the annual volume of ER patients?

What percentage of these patient encounters would be considered emergent diagnoses?

What percentage of ER visits are provided by FM physicians?

Are PAs or NPs utilized in the ER?

Is ER service provided by on-site physicians at all times or part-time?

2 Does the hospital offer maternity services?

What is the number of obstetrical deliveries per year?

What is the C-S rate or number of C-S per year?

What percentage of obstetrical deliveries are performed by FM physicians?

3 If offered, what is the number of EGDs per year?

What physicians have these privileges?

What percentage of EGDs are performed by FM physicians?

4 If offered, what is the number of colonoscopies per year?

What physicians have these privileges?

What percentage of colonoscopies are performed by FM physicians?

5 How many surgical admissions occur per year?

How many surgical procedures occur per year?

What are the leading types of surgical cases, if available?

What surgical privileges do FM physicians have, if any?

6 What is the number of pediatric admissions per year?

What are the leading diagnoses for pediatrics (e.g., normal newborn)?

7 What is the highest level of care available for adult patients (e.g., ICU, telemetry)?

Does the hospital have access and use tele-ICU?

8 Are there any associated long-term care facilities?

9 Are there any associated mental and/or behavioral healthcare facilities?

Hospital Medical Staff

1. Describe the recent (3-5 years) recruitment history for family medicine and other specialty physicians in this community? Is the hospital currently recruiting (hospital and/or clinic)?

   [This group of questions may be pertinent to the quality of the teaching (which is generally improved with stable medical staff and administration retained over the implementation of the program) or valuing of the program (i.e., recruitment and retention of physicians who enjoy and are committed to teaching)]

2. Describe the stability and longevity of the primary care physician workforce? (Family physicians, general internists, general pediatricians)

3. Describe the stability and longevity of other specialty physicians in the community? (e.g., General surgeons, obstetrician-gynecologists, psychiatrists)

4. Who are the local physicians interested in teaching and resident interaction?

5. How many medical staff live within 15 minutes of the hospital?

6. Does the hospital utilize hospitalists or ER/hospitalist physician staff?

7. Are there visiting sub-specialties?

8. Are any of these physicians providing telehealth patient services?

9. What continuing professional development events or programs are currently offered at the hospital (e.g., journal review, all-staff M&M, Grand Rounds, tele-lectures, ACLS, etc.)

10. Is there a medical staff development plan for the hospital?

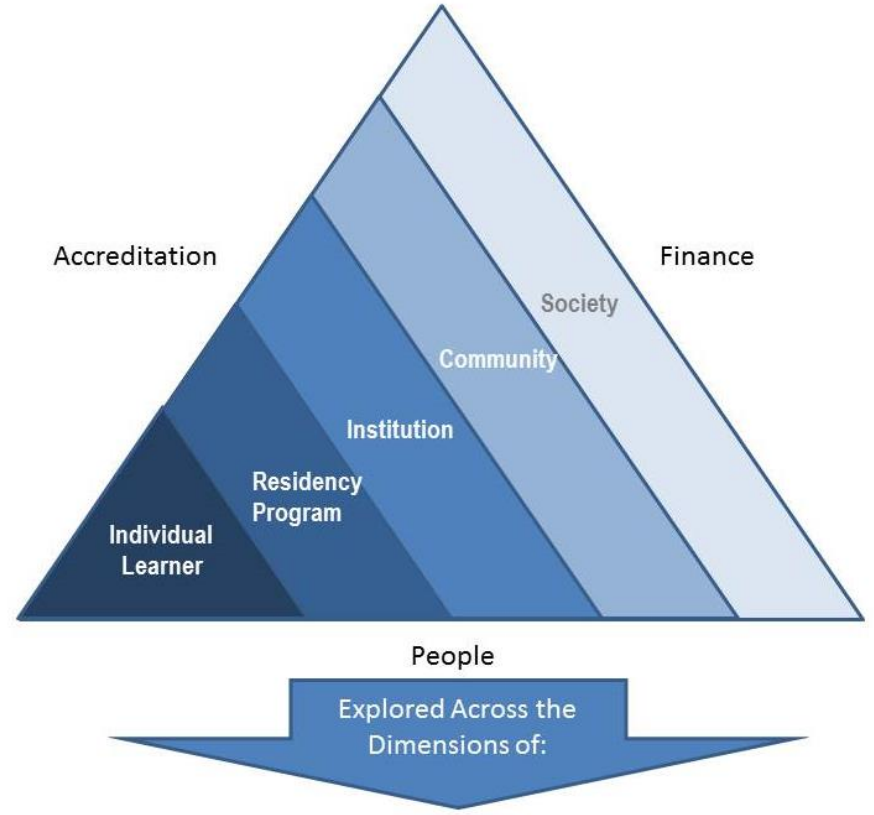
Please provide a roster or list of all medical staff members including specialty

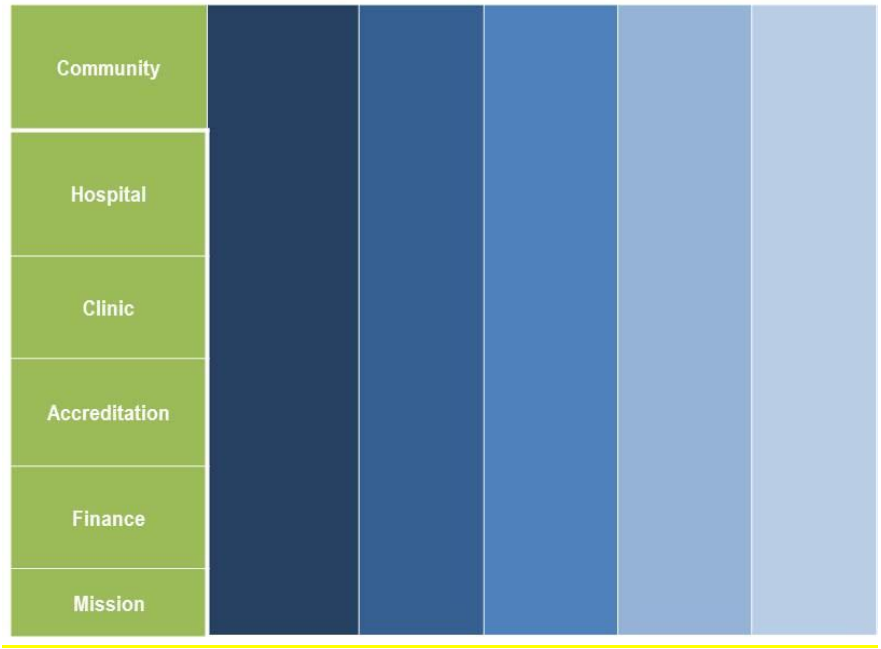
Please provide a copy of an application for core privileges for family medicine physicians and any other privileges held or considered special privileges for family medicine physicians.

Does your hospital have existing by-laws for resident care of patients (such as a 'limited staff privileges' category)? Please provide a copy.

Crosswalk for Community Engaged Residency Education

An organic architectural approach to building a community centered educational home for medical students and residents in a rural neighborhood and within a larger academic community of practice





***See Values and Capacity Crosswalk for a sample of how this can be operationalized – EXCEL attachment**

A Portfolio of Templates, Links, and References

Appendix A: Roadmap to Rural Residency Development (Rural Residency Planning and Development), also available from JGME with a full article describing its development. This outline, developed from the collective experiences of successful rural programs, can serve as a general guide to planning and a measure of progress. For a full array of resources register for portal access on https://ruralgme.org and visit the searchable toolbox. Use the search function for all categories if you are having difficulty finding what you need or send a question to info@ruralgme.org.

Appendix B: ACGME links including the ACGME Division of Medically Underserved Areas and Populations, including the process for pre-accreditation endorsement as a separately accredited or not-separately-accredited 'rural track program (RTP1 and RTP2).'

Appendix C: 2-2-2 Curriculum Graphic 2010 – Integrated "2-2-2" RTT (Longenecker)

Appendix D: Community Impact Exercise – An EXCEL workbook you can use to enter your own assumptions around the indirect financial impacts of residency training your community (Longenecker)

Appendix E: History of Rules and Regulations regarding Rural Programs (Longenecker)

STAGE 1 Exploration

Community Assets

Identify community assets and interested parties.

Leadership

Assemble local leadership and determine program mission.

Sponsorship

Identify an institutional affiliation or sponsorship. Begin to consider financial options and governance structure.

To advance to the next stage:
Make an organizational decision to proceed with investing significant resources in program development.

STAGE 2 Design

Initial Educational & Programmatic Design

Identify Program Director (permanent or in development). Consider community assets, educational vision, resources, and accreditation timeline.

Financial Planning

Develop a budget and secure funding. Consider development and sustainability with revenues and expenses.

Sponsoring Institution Application

Find a Designated Institutional Official and organize the GME Committee. Complete application.

To advance to the next stage:
Finalize a draft budget. Complete program design to include curriculum outline and site mapping. Submit a Sponsoring Institution (SI) application & receive initial accreditation.

STAGE 3 Development

Program Personnel

Appoint residency coordinator. Identify core faculty and other program staff.

Program Planning & Accreditation

Develop curricular plans, goals and objectives; evaluation system and tools; policies and procedures; program letters of agreement; faculty roster. Complete ACGME application and site visit.

To advance to the next stage:
Achieve initial program accreditation – requires successful site visit and letter of accreditation from the ACGME.

STAGE 4 Start-Up

Marketing & Resident Recruitment

Create a website. Register with required systems. Market locally and nationally.

Program Infrastructure & Resources

Hire core faculty and other program staff. Ensure faculty development. Complete any construction and start-up purchases. Establish annual budget.

Matriculate

Welcome and orient new residents.

To advance to the next stage:
Complete contracts and orient first class of residents. Hire all required faculty.

STAGE 5 Maintenance

Ongoing Efforts

Report annually to ACGME and the Sponsoring Institution. Maintain accreditation and financial solvency. Recruit and retain faculty. Track program educational and clinical outcomes. Ensure ongoing performance improvement.

RuralGME.org

The Accreditation Council for Graduate Medical Education (ACGME)

Common Program Requirements for all specialties, and links to the specialty requirements in family medicine and internal medicine (specialties with primary care potential), and psychiatry, general surgery, and obstetrics & gynecology (specialties of primary importance to rural communities)

Common Program Requirements (including a downloadable e-book)
https://www.acgme.org/program-directors-and-coordinators/welcome/program-directors-guide-to-the-common-program-requirements/

Family Medicine:
https://www.acgme.org/specialties/family-medicine/program-requirements-and-faqs-and-applications/

Internal Medicine:
https://www.acgme.org/specialties/internal-medicine/program-requirements-and-faqs-and-applications/

Psychiatry:
https://www.acgme.org/specialties/psychiatry/program-requirements-and-faqs-and-applications/

General Surgery:
https://www.acgme.org/specialties/surgery/program-requirements-and-faqs-and-applications/

Obstetrics & Gynecology:
https://www.acgme.org/specialties/obstetrics-and-gynecology/program-requirements-and-faqs-and-applications/

ACGME Division of Medically Underserved Areas and Populations, including the process for pre-accreditation endorsement as a 'rural track program (RTP).'
https://www.acgme.org/what-we-do/accreditation/medically-underserved-areas-and-populations/

Rural Track Program Designation
https://www.acgme.org/what-we-do/accreditation/medically-underserved-areas-and-populations/rural-tracks/

For a recent list (February 2022) list of rules and regulations relevant to rural programs, see this PDF download:
https://www.acgme.org/globalassets/pdfs/rural-track-regulation-references_web.pdf

For a recent bibliography of selected rural program references and links, see this PDF download from the ACGME:
https://www.acgme.org/globalassets/pdfs/selectedruralgmepublicationsandresources_web.pdf

The OSU Rural Program – Three Year Curriculum

Intensive immersion experiences embedded in a continuing rural practice

1	2	3	4	5	6	7	8	9	10	11	12	13

YEAR 1

Hospital Care (Shared)	Hospital Care	Pediatrics Inpatient	Hospital Care (NRP)	Special Care Nursery	OB – Newborn	Hospital Care	Cardiology	Hospital Care (Wound Healing)	MICU	Hospital Care (ATLS)	Peds ER	Scholarly Activity (Shared)
MRH	MRH	CHC	MRH	OSUH	MRH	MRH	OSUH	MRH	OSUH	MRH	CHC	MRH
Mad River Family Practice -- Periodic office patient care, daily hospital rounds												
2 Half-days	2 Half-days	1 Half-day	2 Half-days	1 Half-day	2 Half-days	1 Half-day		2 Half-days	1 Half-day	2 Half-days	1 Half-day	3 Half-days

YEAR 2

Ambulatory Cardiology	Elective	OB - Newborn	OB – Newborn (High Risk Immersion)	Derma-tology	Pediatrics Outpatient	ICU – Intern Med	Orthopedics	Medical Sub - specialty	Elective	GYN
MRH/Offic		MRH	MRH	Office	Office	MRH	MRH/Office	MRH/Office		Office
Mad River Family Practice -- Periodic office patient care, daily hospital rounds Scholarly Activity and Community Medicine										
4 Office Half-days	0-4 Half-days	2 Half-days	2 Half-days	4 Half-days	2 Half-days	8 Half-days one week None the next	4 half-days	4 Half-days	0-4 Half-days	3 Half-days

YEAR 3

Elective	Geriatrics, Physical Medicine, and Psychiatry	GYN	Elective	Surgical Subspecialiies – Opthalmology, ENT, Urology, Podiatry	Elective	Sports Medicine	Elective	Medical Sub - specialty
	Office	Office		Office		OSU Sports Ctr		MRH/Office
Mad River Family Practice -- Periodic office patient care, daily hospital rounds Practice Management and Community Intervention								
0-4 Half-days	5 Office Half-days	4 Half-days	0-4 Half-days	5 Office Half-days	0-4 Half-days	4 Half-days	0-4 Half-days	0-4 Half-days

[Gray shaded rotations occur at least in part in Columbus, Ohio]

The RTT Collaborative
in rural health professions education and training
Growing our own…together

RTTs: A Two-Page Reference Regarding Federal Definitions and Regulations

Prepared by Randall Longenecker MD, Executive Director, The RTT Collaborative

Updated February 2022

An Aligned Nomenclature

A **Rural Program** of any type is an accredited residency program in which residents spend the majority of their total training time in a rural place.[1] A rurally located program is primarily anchored in a rural community and residents have minimal if any urban experience (e.g., in family medicine, one or two months in an urban children's hospital for intensive pediatric training)

A **Rural Track Program (RTP)** is defined in regulations as of October 1, 2022, as "*an ACGME-accredited program in which all, or some, residents/fellows gain both urban and rural experience with more than half of the education and training for the applicable resident(s)/fellow(s) taking place in a rural area*." CMS uses this term for a track, whether or not it is a separately accredited program, in qualifying hospitals for financing of residency training under a 'rural FTE limitation' or 'RTP cap.' This term is also used by the ACGME for a separately accredited program. The ACGME has a pre-accreditation process in place to endorse new programs as such. *https://www.acgme.org/what-we-do/accreditation/medically-underserved-areas-and-populations/*

A **Rural Track** is the term used by the ACGME to describe a not-separately-accredited track within an accredited program where more than 50% of the training of track participants occurs in a rural area (using the CMS definition).

A **Rural Pathway** is an identified sequence of training activities or rotations as part of an accredited urban program in which trainees in any specialty spend significant time training in a rural location, but less than 50% of their total initial residency training period (Sometimes described as an "Area of Concentration").

An Expanded Federal Definition, effective October 1, 2022:

*"Rural Track Program means, effective for cost reporting periods beginning on or after October 1, 2022, an ACGME-accredited program in which all, or some, residents/fellows gain both urban and rural experience with more than half of the education and training for the applicable resident(s)/fellow(s) taking place in a rural area as defined at 42 CFR 412.62(f)(iii). In the finalized regulations text at 42 CFR 412.105(f)(1)(v) and (x) and 42 CFR 413.79(k), effective for a cost reporting period beginning on or after October 1, 2022, if those programs (either the whole program, or a subset of residents in the program) consist of greater than 50 percent of the training time in a rural area, we will use the term 'Rural Track Program.'" (*For the purpose of this regulation a 'rural area' is defined as any area outside of a Metropolitan Statistical Area, i.e., in a Micropolitan CBSA or a Non-CBSA)

Going forward, this replaces prior language around 'rural training tracks' or RTTs. For a history of the nomenclature around RTTs see JGME article in 2017.[1]

Basic Federal Regulations Relevant to Rural Training Tracks (from the Electronic Code of Federal Regulations, Title 42 → Chapter IV → Subchapter B → Part 413, accessed February 21, 2021)

Subpart F, Specific Categories of Cost, Direct GME payments, **42 §413.75 to 413.83**

[1] Longenecker R. Rural Medical Education Programs: A Proposed Nomenclature. Journal of Graduate Medical Education June 2017;9(3):283-286. https://doi.org/10.4300/JGME-D-16-00550.1

[Search for these sections for "rural" and "GME," especially]

Specific Federal Register Final Rule Notices
(As of January 5, 2021)

FY01 IPPS Final Rule, August 1, 2000, Implementation of BBRA, page 47032ff ("Rural track FTE limitation" determined, page 47033-47): https://www.gpo.gov/fdsys/pkg/FR-2000-08-01/pdf/FR-2000-08-01.pdf

FY02 IPPS Final Rule, August 1, 2001, Responses to public comments from August 1, 2000 interim final rule and to finalize the rule, page 39901ff: http://www.gpo.gov/fdsys/pkg/FR-2001-08-01/pdf/01-18868.pdf

FY04 IPPS Final Rule, August 1, 2003, "Integrated rural track" defined as a separately accredited program; residents must train more than one-half of the program duration in rural areas for urban hospitals to qualify for a rural FTE limitation, page 45454ff: https://www.gpo.gov/fdsys/pkg/FR-2003-08-12/pdf/03-20280.pdf

FY10 IPPS Final Rule, August 27, 2009, Clarification of definition of new medical residency training program (74 FR 43908 - 43919): https://www.gpo.gov/fdsys/pkg/FR-2009-08-27/pdf/FR-2009-08-27.pdf

FY15 IPPS Final Rule: August 19, 2014, Reclassification of rural hospitals to urban, example calculation of FTE limitation (cap), pages 50116 – 50117: https://www.gpo.gov/fdsys/pkg/FR-2014-08-22/pdf/2014-18545.pdf

FY17 IPPS Final Rule: August 1, 2016, Policy Changes Relating to Rural Training Tracks at Urban Hospitals – Cap building period, other; pages 57026 – 57031: https://www.gpo.gov/fdsys/pkg/FR-2016-08-22/pdf/2016-18476.pdf

FY20 IPPS Final Rule: August 2, 2019, Changes in payment for GME in Critical Access Hospitals and rules for claiming of residents training in a CAH as training in a "non-provider setting," effective October 1, 2019; pages 42411 – 42415: https://www.govinfo.gov/content/pkg/FR-2019-08-16/pdf/2019-16762.pdf

FY22 IPPS Final Rule: December 27, 2021
Implementation of Sections 126, 127, and 131 of the Consolidated Appropriations Act of 2021 (signed into law December 27, 2020); created an expanded definition of a 'rural track program' to include those not separately accredited, allowed urban hospitals to expand rural track programs to additional rural sites, and eliminated the 3-year rolling average for rural track programs in their 5-year cap-building period. It also creates new residency positions in rural and underserved settings and allows hospitals an opportunity to reset a low or "$0" PRA.

> Official Executive Summary from CMS: https://www.federalregister.gov/d/2021-27523
>
> Webpage with supporting materials for Section 126 and Section 131 applications: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/DGME

[Note: To search any of these documents for relevant regulations, I recommend the reader search (or "find") the terms "rural training" or "rural track;" in addition, for a summary of all of the regulations to date, one can read the last Final Rule, which generally references the previous rules in a Background section]

Select References:

Community Engaged Medical Education

Markham R. Hunt M, Woollard R, Oelke N, Snadden D, Strasser R, Betkus G, Graham S. Addressing Rural and Indigenous Health Inequities in Canada through Socially Accountable Health Partnerships. BMJo. 2021. 11: e048053. doi:10.1136/bmjopen-2020-048053 Available at https://bmjopen.bmj.com/content/11/11/e048053

R. H. Ellaway, L. O'Gorman, R. Strasser, D. C. Marsh, L. Graves, P. Fink & C. Cervin (2015): A critical hybrid realist-outcomes systematic review of relationships between medical education programmes and communities: BEME Guide No. 35, Medical Teacher. Available at http://dx.doi.org/10.3109/0142159X.2015.1112894

Strasser R; Worley P; Cristobal F; Marsh DC; Berry S; Strasser S; Ellaway R. "Putting Communities in the Driver's Seat: The Realities of Community-Engaged Medical Education," *Academic Medicine*, Published ahead of print, May 2015. Available at *http://www.researchgate.net/profile/Rachel_Ellaway2*

Strasser R, Hogenbirk J, Jacklin K, et al. Community engagement: A central feature of NOSM's socially accountable distributed medical education. CMEJ 2018, 9(1):e33-e43 Available at http://www.cmej.ca

Tesson G; Hudson G; Strasser R; Hunt D, Editors. *The Making of the Northern Ontario School of Medicine: A Case Study in the History of Medical Education.* Montreal/Kingston: McGill-Queen's University Press, 2009.

Place-Based Medical Education

Beccaria L, McIlveen P, Fein EC, Kelly T, McGregor R, Rezwanul R. Importance of attachment to place in growing a sustainable Australian Rural Health Workforce: A rapid review. Aust J Rural Health. 2021 Oct;29(5):620-642. doi: 10.1111/ajr.12799. Epub 2021 Oct 6. PMID: 34612538.

Cutchin M. "Physician Retention in Rural Communities: The perspective of experiential place integration," *Health & Place* 1997; 3(1):25-31.

Hancock C; Steinbach A; Nesbitt TS; Adler SR; Auerswald CL. "Why doctors choose small towns: A developmental model of rural physician recruitment and retention," *Social Science & Medicine* 2009; 69:1368–76.

Longenecker R. An Organic Approach to Health Professions Education and Health Equity: Learning In and With Underserved Communities, J Health Care for the Poor and Underserved, November 2020, Supplement;31(4):114-119.

Longenecker R. Curricular Design: A Place-Based Strategy for Rural Medical Education, in Bell E; Zimmitat C; Merritt J Eds. Rural Medical Education: Practical Strategies, New York: Nova Science, 2011.

Longenecker R. Sustaining Engagement and Rural Scholarship, *J of Higher Education Outreach and Engagement,* Fall 2002/Winter 2003; 8(1):87-97.

Rural Generalist Training

Cairns consensus statement on rural generalist medicine. 2015 World Summit: Rural Generalist Medicine; 2015 Apr. 8–9; Montréal. Available: http://www.acrrm.org.au/docs/default-source/documents/about-the-college/cairns-consensus-statement-final-3-nov-2014.pdf?sfvrsn=4 (accessed 2015 May 21).

National Rural Generalist Pathway – Australia. https://www.health.gov.au/initiatives-and-programs/national-rural-generalist-pathway

Council on Graduate Medical Education (COGME) Reports – 2000 to the present
https://www.hrsa.gov/advisory-committees/graduate-medical-edu/reports.html

- Strengthening the Rural Health Workforce to Improve Health Outcomes in Rural Communities - Twenty-Fourth Report (2022) (PDF - 307 KB)
- Towards the Development of a National Strategic Plan for Graduate Medical Education - Twenty-Third Report (2017) (PDF - 230 KB)
- The Role of Graduate Medical Education in the New Health Care Paradigm - Twenty-Second Report (2014)(PDF - 463 KB)
- Improving Value in Graduate Medical Education - Twenty-First Report (2013) (PDF - 270 KB)
- Advancing Primary Care - Twentieth Report (2010) (PDF - 2.18 MB)
- Enhancing Flexibility in Graduate Medical Education - Nineteenth Report (2007) (PDF - 113 KB)
- New Paradigms for Physician Training for Improving Access to Health Care - Eighteenth Report (2007) (PDF - 92 KB)
- Minorities in Medicine: An Ethnic and Cultural Challenge for Physician Training, an Update-Seventeenth Report (2006) (PDF 771 KB)
- Physician Workforce Policy Guidelines for the United States, 2000–2020 Sixteenth Report (2005) (PDF - 1.01 MB)
- Financing Graduate Medical Education in a Changing Health Care Environment - Fifteenth Report (2000)(PDF - 467 KB)

Rural Training Tracks: History

Longenecker R. Rural Medical Education Programs: A Proposed Nomenclature. Journal of Graduate Medical Education June 2017;9(3):283-286. https://doi.org/10.4300/JGME-D-16-00550.1 (Accessed October 26, 2017)

Longenecker R, Schmitz D. Building a community of practice in rural medical education: Growing our own together. Rural and Remote Health, 17: 4195. (Online) 2017. Available at http://www.rrh.org.au/articles/subviewnew.asp?ArticleID=4195

Maudlin RK; Newkirk GR. Family Medicine Spokane Rural Training Track: 24 Years of Rural-based Graduate Medical Education, *Fam Med* 2010;42(10):723-8.

Patterson DG, Schmitz D, Longenecker R, Andrilla CHA. Family medicine Rural Training Track residencies: 2008-2015 graduate outcomes. Seattle, WA: WWAMI Rural Health Research Center, University of Washington. Feb 2016. Available at https://depts.washington.edu/fammed/rhrc/wp-content/uploads/sites/4/2016/02/RTT_Grad_Outcomes_PB_2016.pdf

Rural health: a challenge for medical education. Proceedings of the 1990 invitational symposium. San Antonio, Texas, February 1-3, 1990. Proceedings. Supplement Article in *Academic Medicine* December 1990. 65(12): S1-126.

Rural-based Graduate Medical Education: A Workshop. Proceedings of a conference. February 16-18, 2000. San Antonio, Texas, USA. Theme issue of *J Rural Health* Summer 2000; 16(3):196-306.

Rural Medical Education and Rural Track Programs: Other

Bazemore, A., Bennett, K., Dodoo, M. S., Legagneur, C., Petterson, S., ... & Xierali, I. (2009). Specialty and Geographic Distribution of the Physician Workforce--What Influences Medical Student and Resident Choices? Robert Graham Center.

Chan BT; Degani N; Crichton T; Pong RW; Rourke JT; Goertzen J; McCready B. Duration of rural training during residency: rural family physicians prefer 6 months. *Can Fam Physician*, February 2006; 52:210-1.

Chen C; Xierali I; Piwnica-Worms K; Phillips R. The Redistribution of Graduate Medical Education Positions In 2005 Failed to Boost Primary Care or Rural Training, *Health Affairs* 2013):32(1):102-110.

DeWitt DE; Migeon M; LeBlond R; Carline JD; Francis L; Irby DM. Insights from outstanding rural internal medicine residency rotations at the University of Washington, *Acad Med* March 2001; 76(3):273-81.

Evans D; Patterson D; Andrilla CH; Schmitz D; Longenecker R. Do Residencies that Aim to Produce Rural Family Physicians Offer Relevant Training? *Fam Med* 2016;48(8):596-602.

Hawes EM, Fraher E, Crane S, Weidner A, Wittenberg H, Pauwels J, Longenecker R, Chen F, Page CP. Rural Residency Training as a Strategy to Address Rural Health Disparities: Barriers to Expansion and Possible Solutions, J Grad Med Educ (2021) 13 (4): 461–465. Available at https://doi.org/10.4300/JGME-D-21-00274.1

Hawes EM, Weidner A, Page C, Longenecker R, Pauwels J, Crane S, Chen F, Fraher E. A Roadmap to Rural Residency Program Development, Journal of Graduate Medical Education August 2020;12(4):384-7. Available at https://meridian.allenpress.com/jgme/article/12/4/384/445472/A-Roadmap-to-Rural-Residency-Program-Development

Longenecker R, Hawes E, Page C. Cultivating Healthy Governance in Rural Programs, *J Grad Med Educ* (2021) ;13(2):174–176. Available at https://doi.org/10.4300/JGME-D-20-00825.1

Longenecker RL, Andrilla CHA, Jopson AD, Evans DV, Schmitz D, Larson EH, Patterson DG. Pipelines to Pathways: Medical School Commitment to Producing a Rural Workforce. *J Rural Health* 2021 Sep;37(4):723-733. doi: 10.1111/jrh.12542. Epub 2020 Nov 26.

Longenecker R, Wendling A, Hollander-Rodriguez J, Bowling J, Schmitz D. Competence Revisited in a Rural Context, Fam Med, January 2018; 49(10):28-35. Available at https://journals.stfm.org/familymedicine/2018/january/longenecker-2017-0030/

Longenecker R. Rural Medical Education Programs: A Proposed Nomenclature. Journal of Graduate Medical Education June 2017;9(3):283-286. Available at https://doi.org/10.4300/JGME-D-16-00550.1

Mian O; Hogenbirk JC; Warry W; Strasser RP. How underserviced rural communities approach physician recruitment: Changes following the opening of a socially accountable medical school in northern Ontario, *Can J Rural Med* 2017; 22(4):139-147.

Meyers P, Wilkinson E, Petterson S, Patterson DG, Longenecker R, Schmitz D, Bazemore A. Rural Workforce Years: Quantifying the Rural Workforce Contribution of Family Medicine Residency Program Graduates, *J Grad Med Educ* December 2020;12 (6): 717–726. Available at https://doi.org/10.4300/JGME-D-20-00122.1

Parlier AB; Galvin SL; Thach S; Kruidenier D; Fagan EB. The Road to Rural Primary Care: A Narrative Review of Factors That Help Develop, Recruit, and Retain Rural Primary Care Physicians. Acad Med. 2018;93:130–140.

Patterson DG, Schmitz D, Longenecker RL. "Family Medicine Rural Training Track Residencies: Risks and Resilience" *Family Medicine* 2019;51(8):649-656. https://journals.stfm.org/media/2569/patterson-2018-0532.pdf

Patterson DG, Andrilla CHA, Garberson LA. Preparing Physicians for Rural Practice: Availability of Rural Training in Rural-Centric Residency Programs. J Grad Med Educ. 2019 Oct;11(5):550-557. doi: 10.4300/JGME-D-18-01079.1. PMID: 31636825; PMCID: PMC6795329.

Pugno PA, Gillanders WR, Kozakowski SM (*2010*). The Direct, Indirect, and Intangible Benefits of Graduate Medical Education Programs to Their Sponsoring Institutions and Communities. *Journal of Graduate Medical Education* June 2010; 2(2):154-159.

Patterson DG, Schmitz D, Longenecker RL. "Family Medicine Rural Training Track Residencies: Risks and Resilience" *Family Medicine* 2019;51(8):649-656. Available at https://journals.stfm.org/media/2569/patterson-2018-0532.pdf

Skariah JM; Ransmussen C; Hollander-Rodriguez J; Carney PA; Dexter E; Waller E; Eiff P. Rural Curricular Guidelines Based on Practice Scope of Recent Residency Graduates Practicing in Small Communities, *Family Medicine* September 2017;49(8):594-9.

Schmitz D. The Role of Rural Graduate Medical Education in Improving Rural Health and Health Care. Fam Med. 2021;53(7):540-543. Available at https://doi.org/10.22454/FamMed.2021.792533.

Xierali, I. M., Sweeney, S. A., Phillips, R. L., Bazemore, A. W., & Petterson, S. M. (2012). Increasing Graduate Medical Education (GME) in Critical Access Hospitals (CAH) Could Enhance Physician Recruitment and Retention in Rural America. The Journal of the American Board of Family Medicine, 25(1), 7-8.

Zhang Y, Moore TE, Weidner A, Nguyen V, Longenecker R, Schmitz D, Bergeson K, Evans D. Exploration of Remote Didactics at Rural Family Medicine Training Programs, Fam Med. 2022;54(5):362-8. Available at https://doi.org/10.22454/FamMed.2022.657132

Rural Medical Education and Rural Training Tracks: Online Resources

The RTT Collaborative is a board directed cooperative of participating programs and individuals committed to sustaining health professions education in rural places.
http://www.rttcollaborative.net

- Annual Meeting Downloads 2014-present
  https://rttcollaborative.net/meetings/annual-meeting-archives/
- Resources and information for students, including a list of rural residencies
  https://rttcollaborative.net/students/
- Technical assistance for existing and developing rural programs in medical school or residency
  https://rttcollaborative.net/about/tools-and-assistance/
- An interactive map of rural programs in family medicine, internal medicine, psychiatry, and general surgery
  https://rttcollaborative.net/rural-programs/residency-map/
- And much more...

Rural Residency Planning and Development Technical Assistance Center
https://ruralgme.org
The RRPD-TAC site is a treasure trove of information and tools for rural residency development. Register for access to the portal and a library of resources, including webinars and practical tools

National Organization of State Offices of Rural Health (NOSORH)
Webinar slide sets regarding RTTs can be found at:
https://nosorh.org/past-webinar-materials/

Collaborative for Rural Primary care Research Education and Practice (Rural PREP)
Teaching Kits, research, and other resources for rural medical education
https://ruralprep.org

Wisconsin Collaborative for Rural GME (WCRGME)
For additional resources and examples from Wisconsin:
http://wcrgme.org

Definitions of Rural

Rural Health Information Hub (RHIhub)
This national library of resources for rural health is invaluable in exploring resources for teaching, for program development, for grant assistance, and for research.
https://www.ruralhealthinfo.org

- Am I Rural? – Geocoding tool and discussion of What is Rural, including links to the USDA Economic Research Service
- Search site for "RTT" or "Rural medical education and training"
- Rural Workforce Education and Training:
  https://www.ruralhealthinfo.org/topics/workforce-education-and-training
- Rural Economic Analysis Impact Tool https://www.ruralhealthinfo.org/econtool

WWAMI Rural Health Research Center
For information regarding definitions of rural: "Rural Urban Commuting Area (RUCA) codes". http://depts.washington.edu/uwruca/(depts.washington.edu).