Rural Family Medicine in Medical School and Postgraduate Education

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The lack of a primary care focus in the U.S. health care system has resulted in poorer health outcomes for Americans compared with persons in other industrialized countries.

In a comparison with other developed countries, the United States ranked lowest in primary care functions and in health care outcomes despite having the highest level of health care spending.

*American Family Physician, July 2007*
Structure of U.S. Physician Training

4 years
- Pre-Medical College Degree
- Basic Science Curriculum

4 years
- Medical School
- Pre-Clinical Study/Clinical Rotations

3+ years
- Residency Program
- Specialized Training
## Cost of College and Medical School

| Median Cost for 4 years College (Pre-Medical School) | - $80,000 (public institution)  
- $160,000 (private institution) |
| Median Cost for 4 Years of Medical School | - $196,000 (public institution)  
- $268,000 (private institution) |
| Repayment of Debt has a major impact on choice of Specialty | - Median debt at Medical School graduation was $160,000  
- 25% Medical School graduates had debt greater than $200,000 |

Source: Association of American Medical Colleges 2010–2011 data
Medical School Curricula

<table>
<thead>
<tr>
<th>Years 1 and 2</th>
<th>Pre-Clinical</th>
<th>Classroom/Laboratory</th>
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<tbody>
<tr>
<td>Year 3</td>
<td>Clinical</td>
<td>All Major Rotations + Some Specialties</td>
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<tr>
<td>Year 4</td>
<td>Clinical</td>
<td>Major Rotations Part 2 + Specialties, Electives</td>
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Clinical Rotations

- Internal Medicine
- Pediatrics
- Surgery
- Family Medicine
- Obstetrics/Gynecology
- Neurology
- Psychiatry
- Specialties/Electives

- Experience in all major areas
- Choose area of concentration
Attracting students to Rural Family Medicine

- Targeted Medical School admissions for students from rural backgrounds
- Provide elective experiences in rural areas with positive role models beginning in the Pre-Clinical (1st) year
- Regional clinical campuses in smaller communities
- High quality Rural Residency Training programs
Benefits of Rural Experiences during Medical School

Maintain interest in rural practice during Medical School / decrease “urban disruption”*

Address misconceptions of rural practice: less salary vs. lower cost of living; more hours vs. less commute time

Attract high quality students to specialize in Family Medicine and locate to Rural Areas

“Urban Disruption” occurs when rural students attend medical school in an urban setting and become accustomed to big-city amenities and meet friends and future spouses who have urban roots.
Legal Requirements to Practice Medicine

Upon completing Medical School, student is awarded a Medical Degree

Must complete at least one year of Residency training and pass Parts 1,2, and 3 of the USMLE Licensing Exam before allowed to practice medicine
U.S. Residency Programs

- 16,000 Residents
- 9,000 Residency Programs at Teaching Hospitals/Clinics
- 135 Specialties and Sub-Specialties
- 16,000 Residents
The resident practices medicine under the supervision of a licensed physician in a hospital or clinic.

Minimum 3 years in length; longer for many specialties.

Necessary for eligibility for Board Certification in a specialty.

In-depth training within a specific branch of medicine.

Average annual salary of a first year resident is $45,000 for 80 hours a week of work ($11.25 per hour).
Family medicine is the medical specialty which provides continuing, comprehensive health care for the individual and family. It is a specialty in breadth that integrates the biological, clinical and behavioral sciences. The scope of family medicine encompasses all ages, both sexes, each organ system and every disease entity.

–American Board of Family Medicine
Family Medicine Residency

- Pediatrics
- Behavioral Science/Counseling/Community Outreach
- Internal Medicine

3 Year Program
Family Medicine Residency Positions in 2012

U.S. Family Residency Positions Offered: 2,740

Number filled by U.S. Medical School Graduates: 1,322

Total Number of Positions Filled: 2,591

Source: National Resident Matching Program
### Supply and Demand

<table>
<thead>
<tr>
<th>Rural Areas need 20,000 Primary Care Physicians to make up for current shortages</th>
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<tbody>
<tr>
<td>About 20,000 Medical Students graduate each year</td>
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<tr>
<td>11.4% of these graduates choose Primary Care as a specialty</td>
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Family Medicine pros and cons

Advantages

- Continuum in Patient Care (Cradle to Grave)
- Diversity in Practice
- Short (3 year) Residency; Flexibility in Practice Options
- More Outpatient Based = Greater flexibility in schedule

Disadvantages

- Lower Pay than other specialties
- Less prestige than other specialties
- Influx of Non–Physician Providers (NPPs) may affect job opportunities/ pay
- Limited ability to enter subspecialties later
Urban versus Rural: Family Medicine Physicians

Urban:
- Average Yearly Income: $156,000
- Patient Encounters per week: 88 – clinic/ 6 – hospital
- Patient Insurance Plan:
  - Traditional – 40%
  - High Deductable – 12%
  - Medicare – 23%
  - Medicaid – 14%
- Cultural opportunities, better schools, job opportunities for spouses

Rural:
- Average Yearly Income: $178,000
- Patient Encounters per week: 93 – clinic/ 10 – hospital
- Patient Insurance Plan:
  - Traditional – 30%
  - High Deductable – 10%
  - Medicare – 30%
  - Medicaid – 19%
- Quieter environment, less working population (retirees), possible family connection
Primary Care in Rural Areas

- 10% of all U.S. Physicians practice in Rural Areas
- 20% of Family Medicine Physicians practice in Rural Areas (down from 32% in 1994)
- Greater than 20% of the U.S. population lives in Rural Areas

This means that Family Medicine is the only specialty that distributes to Rural Areas based on population expectations, but fewer FM physicians are choosing this option.
Physicians most likely to choose Family Medicine in Rural Areas

Student Characteristics

- Students raised in Rural Areas
- Students that have rural experiences during Medical School
- Graduates of Residency Programs that are located in Rural Areas

Medical Schools

- Special Admissions programs target students from Rural Areas
- Programs that focus training in Rural Areas
- Programs that embed rural experiences into mainstream programs
Residency Options to Increase Supply and Preparedness of Rural Family Medicine Physicians

<table>
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<tr>
<th>Residency Programs located in Rural Areas</th>
<th>Rural Training Tracks that combine training at urban tertiary care centers and rural communities</th>
<th>Fellowships to train in additional skills to enhance service to rural communities</th>
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<tbody>
<tr>
<td>4 Rural Training Programs in Kentucky</td>
<td>2 in Kentucky</td>
<td>Example: Surgical Obstetrics, Geriatrics, Sports, Adolescent Medicine, Palliative Care</td>
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Benefits of a Family Medicine Residency in a Rural Setting

<table>
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<tr>
<th>Strong Educational Quality of Residency Program</th>
<th>Students receive increased patient care exposure and opportunities to perform procedures; frequently develop better rapport with patients</th>
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<tbody>
<tr>
<td>Students demonstrate similar academic performance to urban programs</td>
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| Exposure to Rural Practice and small-town lifestyle help students to decide if Rural Practice is the career path they want to choose | Preceptor Physicians may lose productivity and may/may not be paid for precepting. Incentives include joy of teaching, staying current in medical practice, recruiting future partners |

Rural Family Medicine Residency
Special Issues in Rural Medicine

Mental Health
- Less access to Mental Health Services
- Mental illness usually treated by Primary Care

Transportation
- Services, especially specialists, often distant
- Few public transportation options

Costs
- Many lack insurance and cannot afford high cost of care
- Uninsured residents strain hospital resources
Drug Abuse
- Drug and alcohol abuse often socially acceptable
- Insufficient treatment programs available

Wellness
- Physicians lack time to educate on prevention/wellness
- Healthy behaviors not valued or understood

Illiteracy
- Lack of understanding about disease states and treatments
- Language barriers and lack of interpreters
Special Issues in Rural Medicine

Elderly
- Gerontology issues and over/under medication
- Poverty and Limited care options
- Medicare Issues

Behavior
- Prevalence of Behavioral Health Risks
  - Tobacco Use and Substance Abuse
- Obesity
- Family Violence
- Unsafe Sexual Practices (especially teens)

Dental
- Widespread lack of dental hygiene
The mission of the Department of Family and Geriatric Medicine is to excel in the training of medical students and resident physicians. Our department offers two Residency Programs.

The Louisville Residency Program: offers a diverse patient population in an urban setting, with clinical work based in UofL Family Medicine Centers.

The Glasgow Residency Program: est. 1997, located in rural Kentucky, concentrates on training physicians for practice in a rural-based community.
Louisville Residency Program

- University of Louisville Medical Center: Urban Program
TJ Samson Community Hospital is located in a rural community that spans several counties and supports nearly 200,000 people.
Glasgow Family Medicine Residency

- Curriculum is designed to teach skills to practice Family Medicine in any setting
- Program allows flexibility and elective time to study individual interests
- No competing residencies in the hospital
- Accreditation Council for Graduate Medical Education (ACGME) Certified
Glasgow Family Medicine Residency

1st Year Rotations
- Medicine
- Pediatrics at Kosair Hospital
- Obstetrics/Gynecology
- Surgery
- Perinatology

Plus 1 half-day per week in the Family Medicine Center Clinic
Glasgow Family Medicine Residency

2nd Year

Orthopedics
In-patient Medicine
Cardiology
Sports Medicine
Emergency Medicine
Gynecology
Pulmonary/Critical Care
Surgery

Plus 3 half-days per week in the Family Medicine Center Clinic
Glasgow Family Medicine Residency

3rd Year

Psychiatry

Electives

Outpatient Pediatrics

Ophthamology

Urology

Otorhinolaryngology

Geriatrics

“Chief of Service” In-patient Medicine

Plus 4 or 5 half-days per week in the Family Medicine Center Clinic
**1st Year:**
4 Residents
- In-House call only on weekends
- 16-hour shift on Sat or Sun
- An upper level resident is available for backup, supervision, and rounds
- 1 rotation on Emergency Room/Night Float

**2nd Year:**
4 Residents
- 2 rotations on Emergency Room/Night Float
- 2 rotations “Chief of Service” on Residency Hospital Service: backup call from home and round 6–7 days per week

**3rd Year:**
4 Residents
- 1 rotation “Chief of Service” on Residency Hospital Service: backup call from home and round 6–7 days per week
- No In-House call
# Glasgow Family Medicine Residency

Lectures: 6 hours per week, variety of topics, small group format for discussion and questions

Residents have full access and admitting privileges to all areas of the hospital, including ICU/CCC, Emergency Room, Pediatric Wards, Newborn Nursery, Endoscopy, Labor & Delivery, Same-day Surgery

Each Resident completes a Scholarly Project. Options include Independent Research; Literature Review; Document a Case Study; or Develop a Curricular Element

Training in Advanced Life Support; Certification is provided in Advanced Cardiac Life Support, Pediatric Advanced Life Support, Neonatal Resuscitation, Advanced Obstetric Life Support, option to train for Advanced Trauma Life Support

Opportunities in International Medicine: Germany, Kenya, etc.
To practice medicine in the United States, doctors must be licensed by the state in which they work. Board Certified family physicians voluntarily meet additional standards beyond basic licensing.

Initial Board Certification is earned by passing a written examination by the American Board of Family Medicine, followed by a career-long learning and assessment process required by the rigorous ABFM Maintenance of Certification for Family Physicians (MC–FP) program. To maintain Board Certification, a family physician must actively keep pace with the latest advances in the specialty and demonstrate best practices for patient safety, communications and ethics.

Board certification is a meaningful indicator that a doctor has the knowledge, experience and skills necessary to provide high-quality patient care. Although voluntary, ABFM certification is recognized throughout the world as signifying excellence in the practice of Family Medicine.
The family medicine board certification examination process consists of a written exam with multiple-choice, single-response questions. The questions are developed and validated by Diplomates of the Board of Certification in Family Practice (BCFP) under the direction of the American Board of Physician Specialties (ABPS). The exam is designed to thoroughly test applicants on their knowledge of more than 30 categories related to Family Medicine, including those listed below.

- Allergies/immunology
- Cardiovascular disease
- Dermatology
- Gastroenterology
- Geriatrics
- Infectious diseases
- Orthopedics
- Head and neck disorders
- Pediatrics
- Preventive medicine
- Psychiatry
- Respiratory diseases
- Signs and symptoms of diseases
Initial Certification
Awarded when the following 3 criteria are met:

- Successful performance on the American Board of Family Medicine Maintenance of Certification–Family Practice (MC–FP) Exam
- The Residency Program Director verifies that the resident has successfully met all of the Accreditation Council for Graduate Medical Education (ACGME) Program Requirements including completion of three years of training at an ACGME certified Family Medicine Residency
- The candidate obtains a currently valid, full, and unrestricted license to practice medicine in the U.S. or Canada

Note: Board Certification is not required to practice medicine
Certification Designation

Completion of certification shows mastery of Family Practice experience and knowledge and commitment to adhere to the Medical Code of Ethics.

Candidates passing all phases of the examination process will:

- Receive a certificate suitable for framing
- Be permitted to designate themselves as Diplomates of the American Board of Family Medicine
- Be permitted to use and display on business cards and stationery the certification trademarks of the American Board of Family Medicine; listed as Board-Certified on the ABFM website
The Maintenance of Certification for Family Physicians (MC-FP) process provided by the American Board of Family Medicine (ABFM) consists of four components to continually assess Diplomates.

Part I: Professionalism – A valid license to practice medicine and compliance with the ABFM Guidelines for Professionalism, Licensure, and Personal Conduct

Part II: Self-Assessment/Lifelong Learning – Completion of the required number of Self-Assessment Modules (SAMs) and Continuing Medical Education (CME) during the MC-FP cycle

Part III: Cognitive Expertise – Successful completion of the MC-FP examination every 10 years

Part IV: Performance in Practice – Completion of the required number of Performance in Practice Modules (PPMs) during the MC-FP cycle
The 10-year process is broken down into three 3-year stages.

- At least 1 Part II self-assessment module (SAM) every 3 year stage
- At least 1 Part IV performance in practice module (PPM or approved alternative) every 3 year stage
- Additional Part II module or Part IV module every 3 year stage
- At least 50 MC–FP points (acquired by completion of modules) per three year stage
- Complete 150 Continuing Medical Education (CME) credits every 3 year stage
- Continuously maintain a currently valid, full, unrestricted license to practice medicine in the U.S. or Canada
- Pay an MC–FP process payment for each year of MC–FP and an exam application fee to register for the MC–FP examination.

Successful Completion of the MC–FP Exam in Year 10
# Delivery of Care by Family Medicine Physicians

<table>
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<th>Percentage</th>
<th>Services</th>
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<tbody>
<tr>
<td>82%</td>
<td>Hospital Privileges</td>
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<tr>
<td>60%</td>
<td>Care for Newborns</td>
</tr>
<tr>
<td>40%</td>
<td>Manage patients in ICU or CCU</td>
</tr>
<tr>
<td>90%</td>
<td>Geriatrics: treat Medicare patients</td>
</tr>
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</table>

- **Broad medical training and array of services**
- **Establish long-term relationship with patients and their family members**
- **60% care for Newborns**
- **15% of office visits are Pediatrics**
- **82% have Hospital Privileges**
- **40% manage patients in ICU or CCU**
## Delivery of Care by Family Medicine Physicians

| 30% of E.R. physicians completed Family Medicine residencies | 20% provide Maternity care and deliver babies | Procedures include Nail/ skin procedures; Colposcopy; flexible sigmoidoscopy; |
| Many serve on local Board of Health, Nursing Home Boards, Mental Health Board, etc | Pulmonary function tests; joint injections; Intubations; Wound Care | Supervise patient care in Nursing Homes, Home Health; Hospice |
Technology: Computerized Physician Order Entry (CPOE)

**Patient Management Software**
- Electronic entry of Physician Instructions for patient’s care
- Devices include wireless Personal Computers and Tablet Computers

**Secure Access**
- Orders are communicated over a network to other departments (pharmacy, radiology, laboratory)

**Standardized Orders**
- Order sets may be created for each specialty within a facility
- Use of evidence-based clinical guidelines
Patient Safety Benefits

- Handwritten reports or notes, manual order entry, non-standard abbreviations and poor legibility lead to errors and injuries to patients
- Studies suggest CPOE can reduce the medication error rate by 80%
- Disease Prevention Measures and Chronic Disease Management

Billing

- Documentation is improved by linking diagnoses codes to orders at the time of order entry to support appropriate charges

Management

- Optimize speed, productivity, scheduling, staffing, inventory within the healthcare facility
Computerized Physician Order Entry (CPOE) – Problems

New Types of Errors

- Can scatter patient information among multiple screens
- Default selections can override non-standard medication regimens for elderly patients, resulting in toxic doses

Disrupts Flow and Communication

- Between Physician and Nurse; Between Physician and Patient
- Slower in An Emergency situation

Length of Time to Install and Configure – may take years

- Costs and training time involved (Physicians, Nurses, Staff)
- Delayed reimbursement payments
- Interoperability with other systems
- Uncertain capability to comply with Future National Standards
Non–Physician Providers (NPPs)

- Nurse practitioners (NPs) are registered nurses who have completed either an advanced certificate program or a master's degree program of study.

- Physician assistants (PAs) are graduates of the physician assistant training program and licensed to perform medical procedures under the supervision of a physician.

- Certified nurse midwives (CNMs) are registered nurses with additional training in midwifery from a nurse–midwifery program that includes maternal and fetal procedures and patient assessment.
# Use of NPPs in Rural Areas

Goal: use of NPPs to achieve cost containment and improve access to quality primary care for those residing in medically underserved areas.

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<tr>
<th>Legal constraints for NPPs include terms of prescription authority, physician supervision, and reimbursement eligibility.</th>
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<tbody>
<tr>
<td>NPPs are more likely than physicians to work in medically underserved areas.</td>
</tr>
<tr>
<td>NPPs can be trained and placed in less time than physicians.</td>
</tr>
<tr>
<td>Chronic shortage of Primary Care Physicians in rural areas is likely to continue</td>
</tr>
<tr>
<td>NPPs are capable of providing quality care at much lower costs.</td>
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Issues in Family Medicine

Shortage of Rural Care Primary Care Physicians

- Reimbursement Issues – Medicare and the Affordable Care Act
- Increasingly specialized nature of medical practices
- Rapid pace of technological advancement
The Face of Rural Family Medicine in Glasgow, Kentucky