Innovation in Obstetric Care: Findings from Four Literature Reviews on Alternative Models of Obstetric Care Provision and Strategies for Recruitment in Underserved Areas

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Incentive-Based Physician Recruitment Programs by Zoë Julian

***Rural Physician Tax Credit*, Georgia Department of Revenue**

- Goal of increasing physician workforce within rural Georgia
- Rural physician, residing in rural county, working ≥ 40 hours/ week, treating or admitting patients to a rural hospital
- $5,000 tax credit for maximum of 5 years

Challenges:

- No available data on physician characteristics receiving credit
- May increase recruitment, unclear impact on retention
- 18 of 111 acute care hospitals in Georgia qualify as rural hospitals; 11 of 18 have labor and delivery units
- May have little impact on rural OB physician workforce

***Physicians for Rural Areas Assistance Program*, Georgia Board for Physician Workforce (GBPW)**

- Loan repayment program: $25,000 per year for 12 months of service, maximum 4 years or $100,000
- Goal of increasing primary care workforce in rural counties
- Practice location determined by need
- Physician must accept new Medicaid patients

Challenges:

- Public data on the utilization and effectiveness is limited
- Emphasis on recruitment with unclear impact on retention

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The Obstetric Hospitalist Model by Zoë Julian

- OB Hospitalist: trained obstetrician-gynecologist who works exclusively with hospitalized obstetrical patients during predetermined shifts
- Aims of OB Hospitalist Model: Improve patient care and safety
  - Directly improve physician well-being and professional satisfaction
  - Increase length of professional practice
  - Decrease physician burnout

Benefits:

- Potential solution for communities faced with a shortage of obstetricians
- Alternative for obstetricians who are considering giving up obstetric practice that requires both prenatal and delivery services
  - Improved patient safety remains driving force for program development (decreased unattended delivery rates, malpractice cases, and overall mortality)

Challenges/ Limitations:

- Purposeful disruption of continuity of care
- Cost-effectiveness in small volume hospitals (<2000 deliveries/ year)
- Challenges of billing and reimbursement

Funding Mechanisms and Cost-effectiveness of the Laborist Model

- COST: ~4.5 full time physician equivalents (-) $1.6-$1.8 million
- INCOME: In house services and procedures (+) $800,000-$1 million
- Ob hospitalists programs become cost-effective with ≥ 2000 deliveries/year

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Medical Education and OB/GYN Maldistribution by Julia Shinnick

Introduction:

- There is a paucity of research on the role that medical school curricula play in effectively supplying obstetricians to shortage areas. However, features of medical education that correlate with practicing primary care in rural areas has been well studied.
- Since Georgia's maldistribution of obstetricians is most severe in non-urban areas, education initiatives that successfully produced primary care physicians in rural areas may be relevant

Identifying medical schools that graduate rural physicians:

- A national cross-sectional analysis of the 2005 AMA and AOA master file of physician data was used to rank schools by the percent of graduates practicing in rural locations[1].
- The most successful schools had from 21% to 36% of graduates practicing in rural settings.
- Of the top ten, five are located in the south or southeastern United States.

Curricular features that correlate with future practice in rural areas:

- Large class sizes and required student clerkships at academic medical centers[2]
- High percentages of rural students, specialized programs for primary care[3,4]
- Being female, older, having a broad undergraduate education, having required family practice clerkships, and longitudinal primary care experiences[5]
- The number of weeks required in a family practice clerkship or rotation showed the strongest association with entering primary care[5]

Table 2: Curricular features of medical schools located in the south or southeast that are deemed amongst the top 10 producers of rural health providers.

	Univ. of Mississippi	Mercer University SOM	East Carolina U: The Brody SOM	East Tennessee State: Quillen COM	University of Arkansas COM
% grads in rural areas	32%	31%	26%	23%	21%
% students in state	100%	100%	100%	91%	87%
School location	Jackson, MS	Macon, GA	Greenville, NC	Johnson City, TN	Little Rock, AK
% Science Majors	39% Biology	None Given.	None Given.	None given.	78%
Avg. Age @ Matriculation	None Given.	None Given.	24	None given.	23
M:F	57: 63	46:46	39:39	34:32	86:79
Exposure to rural medicine?	Rural Physicians Program	Req. LCMP w. preceptorship, Accel. Track in FM	PC preceptorship required	Rural PC track, Generalist track, Electives	Rural Practice Scholarship Program, Electives
Public or Private	Public	Private	Public	Public	Public
Class size	120	92	78	66	165
Family medicine department size	22	18	47	36	13
Teaching hospital: community or academic?	Both	Both	Both	Both	Both
Required 3rd year clerkships	FM, IM, NR, OG, PD, PSY, SG	FM, IM, PD, OG, PSY, SG	FM, IM, OG, PD, PSY, SG, CVC, RO	IM, OG, PD, PSY, SG	MD, SG, OG, NR, PSY, PD, FM
Required 4th year clerkships	Med, Amb Care, PD + SG elect.	CM, ICU, EM, G/P	Community Based PC, NR, ICU, EM	ICU, inpatient, subsp, IM subI, ambulatory care	PC selective, Geriatrics

Table 3: Curricular features of Georgia medical schools found to correlate with an increased percentage of graduates practicing in rural areas.

	MCG	Mercer	Morehouse	Emory
% grads in rural areas	15%	31%	9%	8%
% students in state	98%	100%	50%	31%
School location	Augusta GA	Macon, GA	Atlanta, GA	Atlanta, GA
% science majors	None Given.	None Given.	None Given.	None Given.
Avg. Age @ Matric.	None Given.	None Given.	None Given.	None Given.
M:F	76: 114	46:46	28:28	59:77
Exposure to rural medicine?	Electives.	Req. LCMP w. preceptorship, Accel. Track in FM	1st Yr: Community Health Course, FM and RH clerkship	Electives.
Public versus private	Public	Private	Private	Private
Class size	190	92	56	136
Family medicine department size	23	18	23	26 (including PA)
Teaching hospital: community or academic?	both	both	both	both
Required 3rd year clerkships	FM, IM, NR, OG, PD, PSY, SG	FM, IM, PD, OG, PSY, SG	IM, PD, OG, PSY, SG, FM, RH	IM, SG, PD, PSY, NR, OG**
Required 4th year clerkships	EM, ICU, Ambulatory Care	CM, ICU, EM, G/P	Ambulatory care	EM, ICU

**Also: RO, Adult PD + PC, Dermatology, Urology, Opthomology, Orthopedic Surgery, Otolaryngology, Palliative Care

Abbreviations: FM= family medicine, CVC= cardiovascular care, IM= Internal Medicine, RO= Radiology
NR= Neurology, CM= community medicine, OG= Obstetrics and Gynecology, G/P= Geriatrics/ Palliative Care, PD= Pediatrics, LCMP= Longitudinal Community Medicine Program, PSY= Psychiatry, RH= rural health, SG= Surgery

- Georgia can improve physician recruitment to rural areas by adding rural medicine tracks, creating longitudinal community health exposures, and admitting more in-state students.

Limitations in the application to rural obstetricians:

- Family medicine graduates are the most likely to practice rural medicine: In a cohort of MDs and DOs from 1988 – 1997, the specialty with the highest proportion of graduates practicing in rural areas was family medicine[1].
- Many curricula that specifically seek to provide rural practitioners do so by increasing interest in family medicine.
- The same model cannot be used to address the obstetric provider shortage, as students interested in obstetrics and gynecology are half as likely to enter rural practice as those interested in family medicine[6].
- Further investigation is needed to identify factors that effectively attract obstetricians and gynecologists to shortage areas.

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Box 1. Innovation in Obstetric Care Delivery: Athens Regional Health System – Ob Hospitalist Program in Georgia

- Launched March 2013, developed by Tiffany Parish, Nursing Director of Labor and Delivery, Dr. Chris Swain and the Ob Hospitalist™ Group
- Prior to Ob hospitalist program, obstetric services at ARHS provided exclusively by midwifery practice
- Physician back-up provided by private physicians from solo and group practices
- No hospital-employed physicians covered Ob emergencies
- 1978 – 2006, Athens Women's Clinic, a large group practice, provided a physician on-call (24/7) within the hospital to cover emergencies
- Closure of the group practice created a void and led to the creation of the OB hospitalist program
- The new OB hospitalist program is housed in the Ob emergency department
- Staffed by 7 Ob hospitalists; 3 also work as physician backup for the midwifery practice
- To prevent competition with local providers, hospitalists are restricted from having private practices within Athens
- Billing practices based on an Obstetrical Service Agreement (OSA)
  - Private physician bills for all obstetrical care
  - Hospitalist bills private physician directly for specific services provided

Benefits:

- Improved patient safety? Insufficient data at this point…
- Well received by single practice OBs and labor nursing staff

Challenges:

- Ob ED requires full time staff 24 hours a day, 7 days a week, regardless of demand
- Difficult to cover both the Ob ED and Labor and Delivery unit from the same physician pool

Perinatal Regionalization and Health District Programs in Georgia by Mona Rai

Baby LUV - Lowndes County

- Aims to improve the birth outcomes of high-risk African American mothers ages 12-44 and decrease the county infant mortality rate
- Three primary services:
  - **Health education** for clinics and community members
  - **Home nurse visits** every 3 months and phone consults every 2 weeks during child's first year of life
  - **Resources and referrals** to other services
- Clients eligible for participation based on 31 medical, reproductive and behavioral risk factors

Heart of Healthy Start - South Central Health District

Note: Of four Healthy Start sites in Georgia, this is the only one operated in cooperation with a public health district

Aims to reduce infant mortality through a variety of services:

- Parent to parent support (Healthy Start Advocates)
- Breastpump loan program and breastfeeding counseling
- Childbirth education
- Perinatal case management
- Sudden Infant Death Syndrome (SIDS) risk reduction education

MOMS (Making Our Mothers Successful) Program - Clayton County

- Eligible to high-risk groups: teenage mothers, women with prior low birth weight (LBW) infant, and/or African American women between 30-44 years who are pregnant or recent mothers
- Services available through first year of child's life
- **Home visitation program** by trained volunteers who provide guidance and education on in the following areas:
  - Breastfeeding, nutrition, SIDS, car seat safety, violence and domestic abuse as well as referrals to other health and community services

Due What's Best & Due What's Best Too - Southwest Public Health District

- Due What's Best - CenteringPregnancy program for African American residents
- Complementary CenteringPregnancy pilot program for Hispanic migratory farm workers planned for 2013 (Due What's Best Too)
- Due What's Best Too Aims: to improve birth outcomes among the migratory farm worker population and to create an obstetric public-private service delivery model to deliver consistent high quality prenatal care

Planning for Healthy Babies - Department of Community Health

- Operated out of Georgia's Department of Community Health
- Expands Medicaid eligibility to underinsured/ uninsured qualifying residents for **family planning services** and **inter-pregnancy care (IPC)**
- Goal is to decrease the incidence of LBW and VLBW infants by increasing access to family planning services and interconception care for women aged 18-44 who do not receive Medicaid benefits
- Implemented February 2011, pilot phase to be complete in June 2014
- Family Planning services include: pregnancy tests, STD testing, pap smears, sterilization, family planning counseling and supplies (i.e., contraceptives), vitamins, select immunizations, and referrals to primary care and social services
- IPC available to women with prior VLBW infant who meet all financial requirements
- Includes: up to five primary care visits, substance abuse treatment, limited dental services, prescription drugs for chronic conditions, case management and counseling

Perinatal Health Partners - Southeast Public Health District

- **Perinatal case management** services
- Coordinates among hospitals, ob-gyns, health departments and maternal-fetal medicine specialists
- Limited to women with specified medical conditions; clients must be referred by primary care physician
- Indicated medical conditions for enrollment include: history of miscarriage/fetal loss, previous fetal/infant death, history of preterm delivery or premature rupture of membranes, multiple gestation, diabetes, pregnancy-induced hypertension, pre-existing medical conditions, or an incompetent cervix

Evidenced-Based Models of Alternative Prenatal Care (PNC) by Yoon-Jin Kim

Strong Start for Mothers and Newborns Initiative (Strong Start)

Strong Start began in February 2012 and is a nation-wide four-year long initiative to study evidence based models of alternative PNC delivery. 192 different sites across the country received federal funding to test one of three models:

I. Centering/group Prenatal Care: Weekly prenatal provider-led sessions to groups of 8-10 women of similar due dates

- Compared to traditional PNC, some evidence shows increases in:
  - Gestational age & birth weight
  - Apgar 1 & 5 minutes score
  - Postpartum visits
  - Breastfeeding at discharge and at follow-up
  - Provider and patient satisfaction
- Some research suggests the primary benefit is in increases in the number of vulnerable women who receive PNC and establishing social networks, rather than in specific health outcomes.

Not all studies available are controlled for same risk factors.

II. Birth Centers: Follow a model of "wellness" for non-high-risk pregnancies

- A multi-site, prospective cohort study of 15,574 women was performed from 2007 to 2010 and found midwifery-led birth centers as high-quality, safe and cost-efficient facilities with low obstetric intervention rates. 93% spontaneous vaginal births.

III. Maternity Care Homes (MCH): Primary physician coordinates & accepts responsibility for a woman's health care from the beginning of pregnancy through the post-partum period.

- Integrate payment structure with improved health outcomes; reimbursement is tied to certain practices, such as high-risk assessments.
- *Community Care of North Carolina* (not funded by Strong Start, but is a MCH model):
  - About 1,500 individual providers (obstetricians, family physicians, certified nurse midwives, nurse practitioners, and physician assistants) and 350 groups practices (private practices, hospital clinics, health departments and FQHCs) enrolled
  - Some providers report increased willingness to accept more Medicaid patients than before. About 85% of PCN providers with Medicaid patients enrolled.

Outcomes regarding NC's experience and Strong Start sites is not yet available.

Other programs:

I. Home Visitation: Nurses visit pregnant women (often first time moms) in their homes

The Affordable Care Act created Maternal, Infant, and Early Childhood Home Visiting (MIECHV) to support research, evaluation, and implementation of home visitation as a PNC model. 13 evidence-based home visitation programs were evaluated for favorable and unfavorable primary and secondary outcome measures. Results were published in October 2012.

- **Nurse Family Partnership (NFP)** had the highest number of "favorable" impacts, including reductions in childhood behavioral and intellectual problems AND the greatest number of "unfavorable or ambiguous" in areas including juvenile delinquency and crime.

Limitations:

- Dearth of data from American Indian tribes, military families and immigrant families
- Outcomes of particular programs (including NFP) not replicated across study sites

II. Healthy Babies Are Worth the Wait (HBWW): A multi-level educational initiative that targets patients, providers and community leaders with messages about the dangers of preterm birth & the best practices to avoid them.

- Kentucky received March of Dimes funding to enact HBWW with the goal of reducing preventable singleton preterm births (before 37 weeks) by 15 percent.
- At the program's halfway mark, Kentucky had the largest drop in preterm birth rates of its contiguous states. Ultimately, intervention sites had sustained progressive declines in preterm birth rates compared to control sites.
- HBWW has expanded from 3 to 8 sites in Kentucky. As of 2012, new sites in Newark, NJ and Houston, TX have formed.

III. Telehealth/Telemedicine: Patient-provider contact from remote locations via technology

- High-risk OB care by a Maternal and Fetal Medicine (MFM) specialist is the most commonly available OB-GYN service
- Aims to reduce transportation barriers & to increase patient-provider contact.
- Program in VA: reductions in travel for PNC by 162,126 miles, preterm deliveries by 25 percent, average days in the NICU and missed appointments. There was also earlier (before 20 weeks) entry into care.

- Note: Medicare reimbursement must be in a medical facility, patient's site of care must be in a Health Professional Shortage Area or outside Metropolitan Statistical Area

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