The Community Apgar Project: A Validated Tool for Improving Rural Communities’ Recruitment and Retention of Physicians

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Presentation Overview

• Acknowledgements
• The Community Apgar Questionnaire (CAQ)
  – Validation through research
  – Development in Idaho and initial findings
  – The CAQ Process
  – CAQ value
  – Future applications
• Questions
Acknowledgements

• Contributors
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The Community Apgar Questionnaire

Validation through Research
Background

• How did we get here – Why research?
  – Boise State University: Ed Baker, PhD
  – Family Medicine Residency of Idaho: Dave Schmitz, MD
  – Office of Rural Health and Primary Care: Mary Sheridan
  – An intersection of workforce, education and advocacy
  – Practical knowledge, relationships, experience and investment
  – Answering needs and necessary questions
  – Applied research: Development of tools
  – Partnerships with those with “skin in the game”
Purpose of the CAQ Research

- Development and validation of a tool which identifies and weighs factors important to communities in recruiting and retaining rural family physicians
- Differentially diagnose modifiable factors for strategic planning in individual critical access hospitals
- Presentation of individual CAQ Scores facilitating discussions with key decision makers in each community for specific strategic planning and improvements
- Designed to be applied serially, like a neonatal “Apgar Score”
The Structure of the CAQ

- The Community Apgar Questionnaire (CAQ)
  - Questions aggregated into 5 Classes
    - Geographic
    - Economic
    - Scope of Practice
    - Medical Support
    - Hospital and Community Support
  - Each Class contains 10 factors for a total of 50 factors/questions representing specific elements related to recruitment and retention of family physicians in rural areas
  - Three open-ended questions
CAQ Class/Factor Examples

- **Geographic Class**
  - Schools, climate, perception of community, spousal satisfaction

- **Economic Class**
  - Loan repayment, income guarantee, revenue flow, competition

- **Scope of Practice Class**
  - Obstetrics, C-sections, ER, endoscopy/surgery, nursing home

- **Medical Support Class**
  - Nursing workforce, EMS, call coverage, perception of quality

- **Hospital and Community Support Class**
  - Physical plant and equipment, internet, hospital leadership, EMR
The Community Apgar Questionnaire

Development in Idaho and Initial Findings
Research Design

- **CAQ Target Communities**
  - Selected based on site visits and discussions with the IHA and the State Office of Rural Health and Primary Care
  - Twelve rural communities with critical access hospitals identified
  - Communities classified as alpha [N=6] or beta [N=6] based on historical success in recruiting and retaining family physicians
  - Final sample included 6 alpha and 5 beta communities [91.7% participation rate] as one community declined initial participation but requested to participate in subsequent community assessments
Research Design

• CAQ Respondents
  – Eleven rural critical access hospital administrators and eleven rural physicians with leadership roles in recruitment and retention [Total N=22]

• CAQ Administration
  – Participants mailed the CAQ survey in advance with consent form [IRB approval from Boise State University] and one hour interviews scheduled
  – Separate structured one hour interviews for each participant where consent form was reviewed and executed and CAQ completed
Top 10 Challenge Factors across All 50 Factors

Mean Score

-2

0

-0.2

-0.4

-0.6

-0.8

-1

-1.2

-1.4

-1.6

-1.8

-2

perception of community
allied mental health workforce
social networking
part-time opportunities
EMR
schools
mental health
shopping and other services
C-section
spousal satisfaction

Top 10 Challenge Factors
Summary Class Community Advantages and Challenges Mean Score
Overall by Respondent and Community Type

- Overall
- Administrator
- Physician
- A Community
- B Community

Mean Score
- Overall: p=0.00
Top 10 Important Factors across All 50 Factors

Mean Score

Top 10 Important Factors

- Spousal satisfaction
- Call/practice coverage
- Income guarantee
- Recreational opportunities
- Revenue flow
- Stability of physician workforce
- Physical plant and equipment
- Perception of quality
- Community need/support of physician
- Loan repayment
Summary Class Community Importance Mean Score
Overall by Respondent and Community Type

Mean Score

Overall Administrator Physician A Community B Community

p=0.03
Top 10 Apgar Scores by Factors across All 50 Factors

Mean Apgar Score

Top 10 Apgar Scores by Factors

- access to recreational opportunities
- community need/support of physician
- internet access
- income guarantee
- hospital leadership
- plans for capital investment
- transfer arrangements
- community volunteer opportunities
- perception of quality
- loan repayment
- inpatient care

Overall
Bottom 10 Apgar Scores by Factors across All 50 Factors

Bottom 10 Apgar Scores by Factors
Summary Class Community Apgar Mean Score by Overall Respondent and Community Type

Mean Score

p=0.00

Overall Administrator Physician A Community B Community
Cumulative Community Apgar Score by Hospital

The graph shows the cumulative Apgar scores for two communities, A and B, for different hospitals. Each hospital code (3, 6, 11, 9, 8, 4, 5, 1, 7, 2, 10) is represented on the x-axis, and the cumulative Apgar score on the y-axis.

Community A scores are indicated by orange bars, while Community B scores are indicated by green bars. The mean cumulative Apgar score is represented by a horizontal blue line.

Higher scores indicate better performance in terms of Apgar scores for newborns in the community.
The CAQ Applied in Idaho

• 27 critical access hospitals in Idaho over 4 years; 54 facilitated discussions
• Each community with private information contributes anonymously to the peer data base
• Strategic plans to address gaps are anonymously contributed to identify “best practices” and advocacy priorities
The Community Apgar Questionnaire

The Process
Year 1

• **Visit one:** Dr. Schmitz conducts site evaluation and 2 interviews
  - Hospital CEO and Lead Physician
• Data is analyzed with peer databases
• **Visit two:** Dr. Schmitz presents to hospital leadership and Board of Directors
  - Discussion of community data and comparisons with explanation of differences from peers
  - Strategic planning session for improvement of weaknesses and marketing of strengths
Year 2

- **Visit three**: Dr. Schmitz conducts a second site evaluation and 2 interviews
  - Hospital CEO and Lead Physician
- Data is analyzed with peer databases and prior year scores
- **Visit four**: Dr. Schmitz presents a second time to hospital leadership and Board of Directors
  - Discussion of community data and comparisons with explanation of differences from peers and prior year scores
  - Strategic planning session for improvement of weaknesses and marketing of strengths
  - Discussion of effectiveness of strategic plan implementation and the CAQ Program
CAQ Program

• Each Community Hospital has 4 visits with 2 presentations approximately 1 year apart
• CAQ can be continued or reinitiated years later when community changes or needs arise
• Community is well known to the CAQ consultant who can help in recruitment
Expansion Beyond Idaho

• Successful implementation and state by state databases beyond Idaho
• State and regional data comparisons
• Training of state-specific CAQ consultant partners
• Linkages to State Offices of Rural Health, residency programs, workforce agencies, and others
The Community Apgar Questionnaire

CAQ Value
According to the Research: The Community Apgar Score

- Shown in this retrospective study to prognosticate successful recruitment and retention of family physicians to rural critical access hospitals.
- With further participation may be able to identify additional specific attributes that make communities “recruitable”: mental health, EMR, specific aspects of contracts...
Validation with Research Means Confidence in Outcomes

- CEOs can have confidence in predictive value of the individual findings
- Board members can know this is worth their time and effort to better understand the issues
- Decisions made for strategic planning have individual foundational data
The CAQ Value Proposition

• Beyond “Expert Opinion”
• A new approach to the old problem of physician recruiting
• Self-empowering for the community: knowledge as power, not an outside “headhunter”
• Beyond physician recruitment to community improvement
Community “6”

Example of Initial CAQ Assessment Information
Comparative Apgar Score for Community Six

Cumulative Apgar Score

Overall APGAR
Geographic
Economic
Scope of Practice
Medical Support
Hospital and Community Support

Community Apgar Class

Mean
Community 6

-50
-25
0
25
50
75
100
125
150
175
200
225
250

250
200
150
100
50
0
50
100
150
200
250

Mean
Community 6

Cumulative Apgar Score

Community Apgar Class
Comparative Apgar Score for Geographic Class for Community Six

Access to larger community
demographics/patient mix
social networking
recreational opportunities
spousal satisfaction
schools
shopping and other services
religious/cultural opportunities
climate
perception of community

Comparative Apgar Score for Geographic Class for Community Six

Mean
Community 6
Comparative Apgar Score for Scope of Practice Class for Community Six

Scope of Practice Factor

- Obstetrics
- C-section
- Emergency room coverage
- Endoscopy/surgery
- Nursing home
- Inpatient care
- Mental health
- Mid-level supervision
- Teaching
- Administration

Mean
Community 6
Comparative Apgar Score for Community and Hospital Support Class for Community Six

- Physical plant and equipment: Community 6
- Plans for capital investment: Community 6
- Electronic medical records: Community 6
- Hospital leadership: Community 6
- Internet access: Community 6
- Televideo support: Community 6
- Hospital sponsored CME: Community 6
- Community need/support of physician: Community 6
- Community volunteer opportunities: Community 6
- Welcome and recruitment program: Community 6
Top 10 Apgar Variance Factors Across All 50 Factors in Community Six

- Schools
- Obstetrics
- Competition
- Revenue flow
- Endoscopy/surgery
- Plans for capital investment
- Signing bonus
- Social networking
- Part-time opportunities
- Income guarantee
Bottom 10 Apgar Variance Factors Across All 50 Factors in Community Six

Bottom 10 Apgar Variance Factors

- Administration
- Nursing workforce
- Start-up/marketing costs
- Community volunteer opportunities
- Demographics/patient mix
- Perception of quality
- C-section
- Electronic medical records
- Welcome and recruitment program
- Physical plant and equipment
Community “5”

Example of Initial CAQ Assessment Information
Comparative Apgar Score for Community Five

Cumulative Apgar Score

Overall APGAR | Geographic | Economic | Scope of Practice | Medical Support | Hospital and Community Support

Mean | Community 5

Community Apgar Class

Cumulative Apgar Score

Overall APGAR | Geographic | Economic | Scope of Practice | Medical Support | Hospital and Community Support

Mean | Community 5

Community Apgar Class
Comparative Apgar Score for Geographic Class for Community Five

- Access to larger community
- Demographics/patient mix
- Social networking
- Recreational opportunities
- Spousal satisfaction
- Schools
- Shopping and other services
- Religious/cultural opportunities
- Climate
- Perception of community

Mean vs. Community 5
Comparative Apgar Score for Scope of Practice Class for Community Five
Top 10 Apgar Variance Factors Across All 50 Factors in Community Five

- Signing bonus
- Part-time opportunities
- Loan repayment
- Obstetrics
- Nursing workforce
- Moving allowance
- Schools
- Mental health
- Endoscopy/surgery
- C-section
Variance of Apgar Score from the Mean

Top 10 Apgar Variance Factors Across All 50 Factors in Community Five

Bottom 10 Apgar Variance Factors

- Payor mix & perception of community
- Perception of quality
- Electronic medical records
- Administration
- Demographics/patient mix
- Physical plant and equipment
- Social networking
- Specialist availability
- Call/practice coverage
- Stability of physician workforce
The Community Apgar Questionnaire

Future Applications
CAQ Sister Programs

• Community Health Center CAQ development completed (2010) in partnership with Idaho Primary Care Association
  – Funded for 6 CHCs in Idaho (2010-11)

• Nursing CAQ under development in partnership with Boise State University Department of Nursing
Regional and National Use of the Community Apgar Project

• The Peer Group Data Bases (anonymous):
  – Idaho, Wyoming (possibly adding Wisconsin, Maine, Virginia, Montana, Washington, others)
  – Individual state comparisons
  – Regional database
  – National database
  – Individual communities benefit immediately
  – Further research with a “rising tide raising all boats”
CAQ Funding

• Funding Sources
  – FLEX funds
  – State Office of Rural Health funds
  – Grant funds (e.g. USDA)
  – Direct cost share with institutions
Questions ?

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