# Building Bridges Between Silos: An Outcomes-Logic Model for a Multidisciplinary, Subspecialty Fellowship Education Program

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GRADUATE MEDICAL EDUCATION program directors face new challenges as the Accreditation Council of Graduate Medical Education (ACGME) modifies curriculum standards. Current standards require "a formally-structured educational program in clinical and basic sciences related to the subspecialty," and these requirements involve training in areas beyond direct patient care.[1] Similarly, the American Board of Pediatrics (ABP) has expanded curriculum requirements for fellowship training,[2] and the Federation of Pediatric Organizations has added that training in scholarship, core competencies, and skills in lifelong learning and teaching also should be incorporated.[3]

The Council of Pediatric Subspecialties was formed in part to address the extent to which pediatrics fellowship programs provide comprehensive training for successfully transitioning to subspecialty academic careers. It has yet to respond to the substantial need for shared curricula common to pediatric fellowships.[4] Some pediatric subspecialty organizations have collaborated across institutions to develop subspecialty-specific curricula.[5–7] However, their priorities are specific, rather than general, in scope.

Adding to the challenge is the paucity of examples in the literature of methods to develop, implement, and evaluate a comprehensive fellowship curriculum within an institution or department. We describe the initial steps we took to address these challenges and the use of a logic model to create Fellows' College (FC), a centralized educational program for subspecialty trainees in the Department of Pediatrics at Baylor College of Medicine (BCM), Houston, Texas.

Ethical approval was obtained from the Baylor College of Medicine institutional review board (approval H32258).

## SITUATION

In 2010, several subspecialty fellowship programs received citations related to deficiencies in core curriculum requirements, inadequate practice-based learning and improvement opportunities, and lack of individualized development plans for trainees. At that time, each program functioned independently. Recognizing that subspecialty silos contributed to these deficiencies and variations in duration of accreditation cycles, one of us (JRC) suggested creating a centralized educational program for all pediatric fellows as a mechanism to address these challenges. The goals were to enhance subspecialty education for fellows and to support program directors and coordinators. Department leadership supported the vision and provided resources for our planning process.

## PLANNING

We first conducted an in-depth review of the literature and the ACGME and ABP requirements. We then performed a needs assessment to identify common educational deficiencies in our fellowship programs. Valuing models of best practices in education, we identified and consulted with an established centralized educational program at the University of California, San Francisco. Departmental leadership provided funds to bring the director of this program to BCM as a visiting professor. Insights gained from that consultation helped us define an innovative leadership structure and select the best model for developing our program.

## DEFINING A LEADERSHIP STRUCTURE

The leadership structure of FC was based on the principles outlined in Jim Collins's monograph *Good to Great and the Social Sectors*.[8] We formed a steering committee consisting of junior and senior faculty members from 8 pediatric subspecialties to serve as an advisory board. With broad representation, we were able to "get the right

people on the bus"[8] and identify and eliminate deficiencies in our subspecialty training programs.

## SELECTING AND DRAFTING A LOGIC MODEL

A logic model is a "systematic and visual way to present and share your understanding of the relationships among the resources you have to operate your program, the activities you plan to do, and the changes or results you hope to achieve."[9] These models are helpful tools for guiding the development, implementation, and evaluation of a multifaceted program.[10] The 3 approaches for a logic model are: 1) theory (conceptual), 2) outcomes, and 3) activities (applied). To ensure a shared understanding of and focus on the goals of FC, we chose to implement an outcomes-logic model.

An outcomes-logic model includes inputs, outputs, and outcomes (Fig). The inputs consist of the resources available to the program (items or people needed to make the program happen). The outputs are activities/strategies (how the program uses the resources to achieve its mission) and the intended participants. Usually outcomes are grouped into 3 separate categories on the basis of length of time: 1) immediate results (<1 year), 2) intermediate benefits (1–3 years) for fellowship programs and participants, and 3) the impact (eg, changes or benefits) of the program on the organization (3–5 years).

We organized a half-day retreat for 16 key stakeholders (eg, vice chair of education, core pediatric program director, departmental educational leaders, and selected influential fellowship program directors) and leaders of our FC to develop our outcomes-logic model. Before the meeting, we gave the participants 3 items: 1) a paper from the W. K. Kellogg Foundation describing the development of a logic model[9]; 2) an article by Armstrong and Barsion[10] describing how they used an outcomes-logic model to evaluate a faculty development program; and 3) an example of an outcomes-logic model from another BCM program.

Retreat participants received a blank outcomes-logic model template as described above. The preretreat assignment was to identify inputs (resources), proposed activities, participants, and desired outcomes (immediate, intermediate, and impact) considered to be goals that FC should accomplish. The retreat was facilitated by one of the authors (TLT), who had developed the example outcomes-logic model given to the participants. Stating proposed outcomes up front was instrumental in determining the content to include and the parameters to evaluate, as well as in developing a structured proposal to present to the departmental leadership. The Figure is an abbreviated visual representation of the complete outcomes-logic model developed and presented to the departmental leadership.

## INPUTS

Educational leaders in the department agreed to serve as advisors and mentors for the directors of FC. This support was vital to the implementation of the program. We applied for and were awarded a competitive grant from Texas Children's Hospital, which provided $80,000 over 2 years to implement the program. Budget categories included: travel and registration for faculty to attend ACGME and Association of Pediatric Program Directors meetings, FC

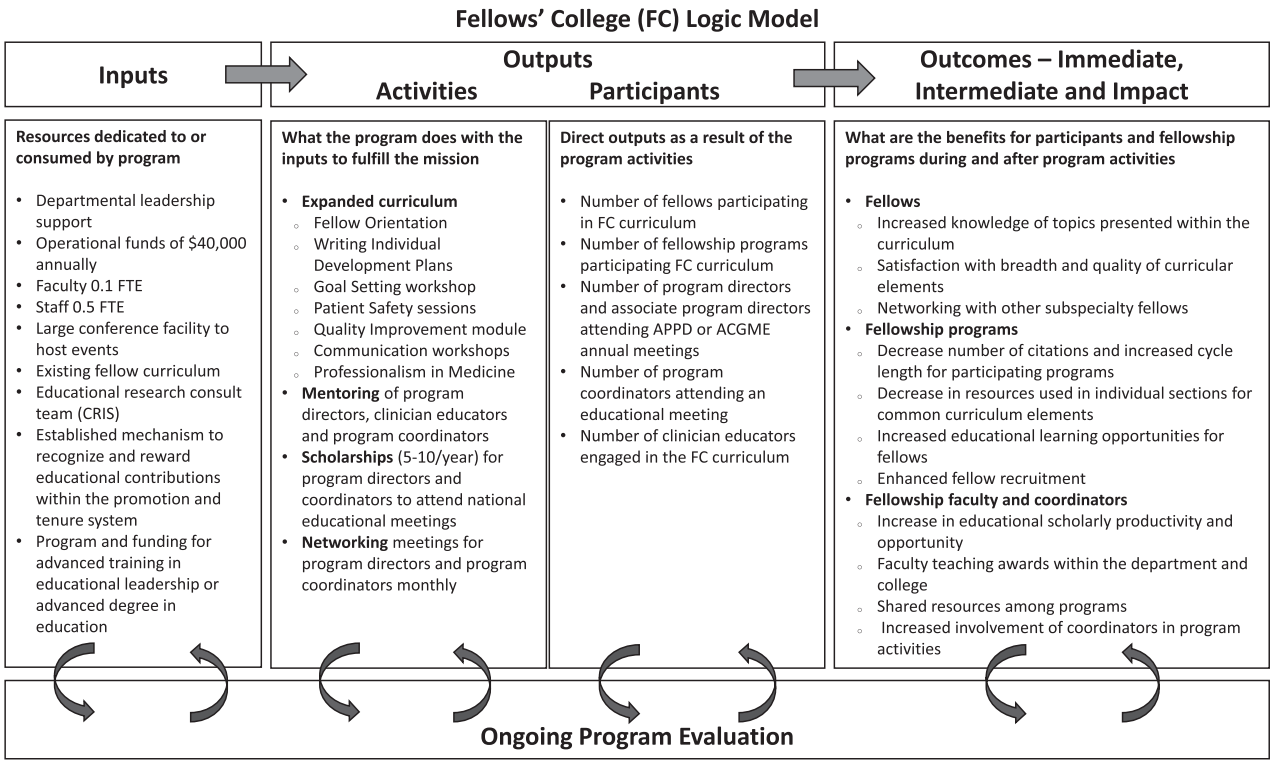


**Figure.** *Illustration of an abbreviated version of the BCM Fellows' College Logic Model.*