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The authors would like to thank Scott Morris, JD, Jennifer Bassett, JD, and Jacob Mitchell, JD, with the Lubbock County District Attorney's Office for their assistance with the curriculum. Sarah McCartney provided assistance in evaluation of the curriculum.

New Ideas

Implementation of a Monitored Educational Curriculum and Impact on Pediatrics Resident In-Training Examination Scores

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Setting and Problem

Due to changes in duty hour restrictions implemented in 2011, the number of formal didactic sessions for pediatrics residents at the University of Maryland Children's Hospital was reduced by half.

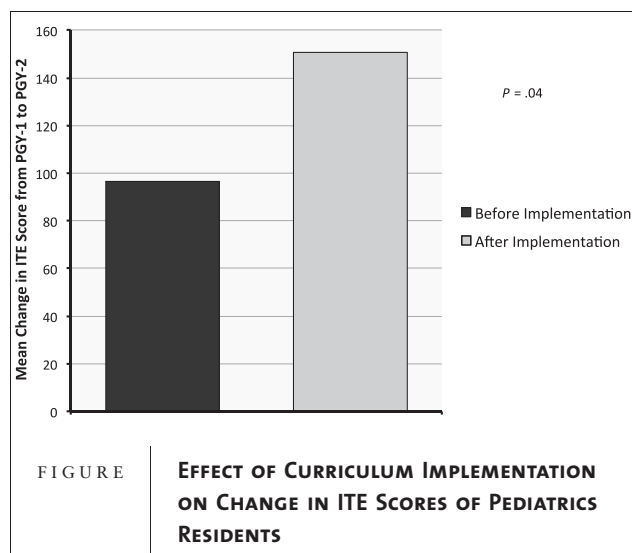
The potential negative impact on resident education resulting from restricted duty hours has been a frequent topic in the graduate medical education literature. This was echoed by our residency leadership who were concerned that the decrease in didactic time would adversely affect resident education, resulting in a decrease in the board pass rate and in preparedness for independent practice.

Intervention

To offset the potential negative impact of decreased didactic time, we implemented a monitored educational curriculum, partially modeled after the continuing medical education requirements of state licensing boards. Our objective was to determine the effect of this intervention on resident learning as measured by the change in residents' pediatric in-training examination (ITE) scores over time.

The ITE scores were chosen due to their strong association with scores on the American Board of Pediatrics (ABP) certifying examination.

We created a central online repository for all required learning materials, selected by consensus by the pediatric education leadership, using the Blackboard Learn online coursework management system. Residents are required to complete a prespecified number of learning activities in 2 categories: (1) Category-A activities are required of all residents, and include PREP questions, the Yale Primary Care Pediatrics Curriculum, and monthly *Pediatrics in Review (PIR)* articles; and (2) Category-B activities are individualized and chosen based on residents' interests. They include attendance at daily conferences and a variety of other learning activities. Residents' achievement of required points is monitored by the chief residents through Pedialink for PREP questions and Blackboard Grade Center for most other activities. E-mail confirmations of educational activities not on Blackboard are also accepted for points. Points are recorded on a spreadsheet that is publically shared with the residents on a monthly basis. We implemented this innovation in the 2011–2012 academic year, assessed the impact on ITE scores (for graduating classes of 2011–2015), and collected resident feedback.



Abbreviation: ITE, in-training examination.

The data were analyzed with standard *t* tests to compare the mean increases in ITE scores by postgraduate year (PGY) level between residents who trained prior to the curriculum (control group) and after its implementation (intervention group).

Outcomes to Date

Outcomes were measured for 2 resident levels, PGY-1 to PGY-2 and PGY-1 to PGY-3. The PGY-1 to PGY-2 control group had 33 residents, with 27 in the intervention group. The mean difference in ITE scores from PGY-1 to PGY-2 in the intervention group was greater than the control group (150.7 points versus 96.7 points, respectively, $P = .04$; FIGURE). The PGY-1 to PGY-3 control group had 19 residents, with 13 in the intervention group. The mean difference in ITE scores from PGY-1 to PGY-3 in the intervention group was not statistically different than the control group (209.2 points versus 147.4 points, respectively, $P = .06$). The 2012 survey demonstrated improvement in completion of monthly educational activities (*PIR* articles 3.0 ± 1 versus 1.7 ± 1.4 , $P < .001$; PREP questions 16.0 ± 5.3 versus 11.3 ± 7.6 , $P < .001$; Category-B points 5.5 ± 3.9 versus 3.5 ± 3.9 , $P = .02$), with positive feedback.

Our findings suggest that the implementation of our monitored educational curriculum has positively influenced the residents' ITE scores. We anticipate the ability to show a statistically significant mean difference in ITE scores from

PGY-1 to PGY-3 with the availability of more data. As the ITE scores are predictive of passage of the ABP certifying examination, we predict that this curriculum will also have a positive impact on the examination pass rate for first-time test takers, and intend to evaluate this once data are available.

Conclusions

Our monitored curriculum can be adopted or easily adapted by pediatrics residency programs across the country, and a similar set of educational requirements could be created for nonpediatrics programs, potentially improving readiness for practice and board pass rates among residents nationally.

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