

MARSHALL UNIVERSITY JOAN C. EDWARDS SCHOOL OF MEDICINE

ACADEMY OF AEDICAL EDUCATORS

PURSUING YOUR PASSION WITH EXCELLENCE IN TEACHING



MESSAGE FROM THE DEAN

Since its inception, the Academy of Medical Educators has provided some of our school's most outstanding faculty and residents with a breadth and depth of teaching resources that are taking our educational program to a new level of excellence.

As we conclude the third successful year for this innovative program, the list of trend-setting educational experts visiting our campus is impressive. The scholarly activity generated by the members themselves continues to bring honor and recognition to Marshall.

Truly Academy members represent the best among us in their dedication to excellence in teaching. We are indebted to the faculty members and residents who have invested their time in the Academy, and we look forward to recognizing the unique talents and contributions our incoming class of master educators and scholars will bring.

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GOALS FOR THE ACADEMY

- Provide a platform for the continuous recognition of excellence in teaching
- Stimulate interest and visibility in teaching
- Provide an interdisciplinary support network for medical educators
- Develop a pool of knowledge and skills that will lead to innovation in teaching/learning



Joan C. Edwards School of Medicine featured on cover of March 2008 issue of *Academic Medicine*





Does Emotional Intelligence Affect Residency Selection?

Samer Abu-Sultaneh, M.D. **Department of Pediatrics** Joan C. Edwards School of Medicine Marshall University, Huntington, WV

Background: Emotional intelligence (EI) has been used in many fields to predict success. El has become popular in medical education. Some studies suggest a relationship between El and patient satisfaction, empathy and communication skills. Other interesting questions are not answered yet. Does the El affect the future career plans of medical students? Can we teach medical students how to improve their EI?

Objective: Evaluate the effect of emotional intelligence of fourth-year medical students on residency selection.

Methods: An online survey using the Schutte Emotional Intelligence Scale (SEIS) was sent to fourth-year medical students. In addition to the SEIS questions, students were asked to indicate their age, gender, USMLE 1 score, USMLE 2 CK score and residency selection. Emotional Quotient (EQ) was calculated based on their responses to the 33 questions of the SEIS (which produces scores ranging between 33 and 165). EQ was compared between groups using multivariate regression analysis, with p value <0.05 considered as statistically significant.

Results: 29 students completed the survey; 62.1% males and 37.9% females. The average EQ for fourth-year medical students was 128.4. The average EQ was 127 for males and 130.7 for females (Table 1). Students between 26 to 30 years of age had the highest EQ, 130.1 (Table 2). Students who scored between 201 and 220 in both USMLE 1 and USMLE 2 CK had the highest EQ; 132.7 and 132.1, respectively (Table 3 & Table 4). EQ was different between specialties. The group that included students who choose subspecialties like anesthesia and neurosurgery scored the highest (131), followed by obstetrics and gynecology (130.8), family medicine (130), surgery (129.8), pediatrics (129.4), emergency medicine (125), and internal medicine (114) (Table 5). With the small sample size, our results did not reach statistical significance.

Conclusion: Emotional intelligence is an interesting new concept in medical education. More studies are needed to explore its effect on medical students' specialty selection.

Table 1- EQ by gender			
	Number (%)	Mean±SD	p value
Medical Students	29 (100%)	128.4±8.1	NS*
Males	18 (62.1%)	127±7.5	NS*
Females	11 (37.9%)	130.7±9	NS*

Table 2 - EQ by age			
	Number (%)	Mean±SD	p value
20 - 25 years	14 (48.3%)	127.2±8.1	NS*
26 - 30 years	13 (44.8%)	130.1±8.8	NS*
>30 years	2 (6.9%)	125.5±0.7	NS*

Table 4 - EQ by USMLE 2 CK score			
	Number (%)	Mean±SD	p value
200 or less	2 (6.9%)	129.5±7.7	NS*
201 - 220	7 (24.1%)	132.1±8.8	NS*
121 - 240	11 (38%)	125.9±9.1	NS*
241 or more	9 (31%)	128.3±6.5	NS*

Table 5 - EQ by specialty			
	Number (%)	Mean±SD	p value
Pediatrics	7 (24.2%)	129.4±10.6	NS*
Internal Medicine	2 (6.9%)	114±9.9	NS*
Family Medicine	6 (20.7%)	130±7	NS*
Obstetrics and Gynecology	5 (17.2%)	130.8±3.7	NS*
Surgery	4 (13.8%)	129.8±4.8	NS*
Emergency Medicine	3 (10.3%)	125±6.5	NS*
Others	2 (6.9%)	131±11.3	NS*

* No statistical significance

1 Anesthesia, 1 Neurosurgery

Table 3 - EQ by USMLE 1 score

	Number (%)	Mean±SD	p value
200 or less	3 (10.3%)	121±12.7	NS*
201-220	10 (34.5%)	132.7±7.6	NS*
121 - 240	10 (34.5%)	126.5±5.7	NS*
241 or more	6 (20.7%)	128.2±8.1	NS*

Designing an effective learning experience for the third-year surgery clerkship *Ben Moosavi M.D.*

Department of Surgery Marshall University Joan C. Edwards School of Medicine

Background: Computer technology is becoming more pervasive throughout medical education. Students, faculty, and institutions are applying technology to modern medical practice. However, no formal curriculum for use of the computer technology is currently being used. In this era of computer-based education, the learning process is becoming more convenient and interactive. The use of web-based technologies may allow deeper understanding of clinical knowledge if used in the proper educational format.

Currently within the medical student surgery clerkship, didactic lectures occur 1 day per week with 2 days at the beginning and end of the rotation for orientation and review. Faculty members are responsible for preparing lectures on their given surgical topics. They use differing modalities to disseminate the core content of surgical information including formal lectures and case based discussions. Difficulties with this format include missed lectures, differing information per rotation, lack of defined material covered, and difficulty coordinating timing of lectures with clinical learning.

Conversion to an Internet-based lecture series would allow self-learning on the part of the medical students. It would improve attending-student interactions by allowing a case-based format for discussion during scheduled meeting times. Core content could be better identified, and scheduling difficulties would be alleviated. In addition, further content on specific surgical procedures could be added to the lecture bank to further prepare students for the operating room environment and expectations.

Proposal: My proposal is to establish a web-based lecture series. The lectures would be performed on Adobe multimedia application software. The series would incorporate audio, video, PowerPoint, and interactive modalities to parallel the live lecture format. Further learning and attending interaction will be provided via interactive case-based discussions during weekly meetings. For further research, the web-based didactic lectures will involve pretest and posttest quizzes for quantitative evaluation. At the conclusion of the rotations, the web-based lectures as well as the case-based discussions will be qualitatively evaluated using a questionnaire.

Conclusion: The change to web-based lectures and case-based discussions as the primary modalities for delivering curriculum on surgical diseases during the third-year surgical clerkship should improve overall comprehension of material. Multimedia-based learning may also offer a more interactive and conceptual representation of information that would otherwise require multiple references to achieve similar understanding. Expected benefits of the curriculum change include autonomy of learning, availability of lecture materials to be viewed at any time or any number of times, and decrease of time constraints on both faculty and student schedules.

MASTER EDUCATOR

Self Reflection

I took the Master Educator's Course to become a more effective teacher. I not only learned those skills, but learned the intricacies of testing our students, and the impact that evaluations have on instruction. I went expecting one thing, and got more.

The classes were with other people of a like mind – people who wanted to become "Masters" at one of the things they do for medical students. We all have the teaching models that we observed during Medical School. The greatest advantage to the course was our exposure to other models, presented by some of the people who created those models. Tips on how to make students focus on one or more aspects of patient care-from history and physical, to the differential diagnosis are ones that I am using today.

I also remember an extended class we had on testing, and validating our testing. It is easy to "make up" questions based on what we think we've taught. Looking at the results of those tests and how we evaluate whether we have actually allowed the students to understand the topic is a critical part of instruction that is not part of our faculty preparation. While we think we know what we are teaching, few of us know how to validate that assumption. I now have a better understanding on how to phrase and verify my evaluations. Chuck Clements, M.D.

Master Educator 2007

I feel very fortunate to have been able to participate in the academy as a resident physician.

My encounters with both the faculty members in the academy as well as the excellent guest speakers will surely prove to be invaluable.

Matt Weimer, M.D. Teaching Scholar 2007

ACADEMY SPONSORED PROGRAMS Summer Academy: A Day long Educational Retreat ABC's of Teaching and Learning Medicine

Teri Turner M.D. and Nancy Searle EdD Baylor College of Medicine

Professional and Institutional Enhancement Seminar (PIES)

monthly seminar on teaching and learning for School of Medicine faculty <u>http://musom.marshall.edu/</u> <u>fdp/private/pies2007/</u>

"Academic Medicine" Fourth-Year

Elective: This elective is designed to empower senior medical students in their roles as teachers and team leaders, provide them with basic adult learning theory and practical teaching skills, and increase their awareness of how to identify goals for their learners and provide feedback

Student Presentation: "The Use of Innovative Teaching Methods To Prepare Students For USMLE Step 2" Lucia Soltis MSIV Marshall University Joan C. Edwards

Marshall University Joan C. Edwards School of Medicine

Presented at West Virginia Rural Health Education Partnership Faculty Development Conference 2008

INVITED GUEST SPEAKERS FOR THE ACADEMY Terry Turner M.D. & Nancy Searle EdD Baylor College of Medicine

Sheila Chauvin M.Ed., Ph.D.

Professor, Department of Internal Medicine and School of Public Health, Louisiana State University Health Science Center

Perry A. Pugno, M.D., MPH, CPE

Director, Division of Medical Education, American Academy of Family Physicians

Mary Moran M.D.

Associate Professor of Pediatrics Associate Dean for Faculty Affairs & Professional Development Drexel University College of Medicine

Faculty Learning Style and Student Satisfaction Vincent E. Sollars, Ph.D.

Department of Biochemistry and Microbiology Joan C. Edwards School of Medicine at Marshall University

Background: We make sense of the world by the use of specific mental qualities that affect the way we perceive and order the world around us, i.e. the way we learn. According to Dr. Anthony F. Gregorc, these mental qualities can be divided into four groups of concrete sequential, abstract sequential, abstract random, and concrete random. All people have the ability to learn by each of these four methods, but tend to favor one or two. The method a teacher prefers to learn by can heavily influence their teaching methods. When the teaching method best matches a student's learning style, those students will tend to be better satisfied with that teacher. We will be testing the hypothesis that teachers with a learning style similar to that of medical students, concrete sequential, have higher student satisfaction scores.



Methods: All faculty at the Joan C. Edwards School of Medicine at Marshall University were requested to complete a survey to determine their learning style. Linear regression analysis was performed to determine the degree of correlation and analysis of variance was used to determine significance of correlation of each learning style to overall student satisfaction as determined by teaching evaluations by the student population.

Results: Nineteen of 178 faculty were surveyed at the Joan C. Edwards School of Medicine, representing 10.7% of the total faculty. The accompanying figure illustrates the results of the survey for the faculty as a whole, with higher scores in each category representing stronger preference. The median scores along with the first and third quartile limits are shown for each learning style. The gray area of the figure represents the normal ranges for most people, while the white areas represent low and high preference for the particular learning style. There is a favoring of sequential learning styles of both the abstract and concrete varieties in the faculty of our medical school. None of the learning styles showed a significant correlation with student evaluations. However, concrete sequential did show the best correlation with teaching evaluation using multiple linear regression analysis.

Conclusions: We were unable to offer statically significant results to support our hypothesis. However, it still represents the best-fit model when comparing teacher learning styles with student satisfaction. A larger sample size may be able to offer stronger support of our hypothesis.

Teaching Medical Students Patient Medication Compliance During a Third Year Medical Student Rotation in Psychiatry Anne Zappacosta M.D.

Department of Psychiatry and Behavioral Medicine Marshall University Joan. C. Edwards School of Medicine

Background: Patient medication compliance for chronic medical conditions is poor overall and even worse for psychiatric patients taking psychotropic medication.¹ Many psychiatric patients stop their medications when they feel well despite the consequences of relapse and hospitalization. Experiential training has been shown to enhance health professionals' awareness of patient compliance issues.² Although there have been a few studies with medical students simulating patient medication compliance with placebos or candies, none has lasted longer than 1-2 weeks, and only one study has been completed during a clinical clerkship (medicine³)—most were done during preclinical years⁴⁻⁶

Objectives: To teach medical students about the difficulties encountered in psychiatric patient compliance to psychotropic medication and to allow the students to develop their own compliance strategies.

Methods: All third year medical students during their 8-week psychiatric rotation were presented with medication regimens taken by real psychiatric patients. Their "medications" were in the form of candies (Tic Tacs, Gobstoppers, Skittles, Breath savers, Hot Tamales) as close to the color, size and shape of the actual medications as possible. The medications were ingested (or simply discarded) for the entire 8-week rotation. The "medications" were presented to the medical student as a full 8-week supply in actual pill bottles with pharmacy labels in white paper bags with a bill of sale attached (the cost for an 8-week supply). Also included were medication information handouts and disease handouts for each medication and each condition the medications are meant to treat. Initially each student completed a survey assessing his or her attitudes towards patient compliance factors. This survey was repeated at the end of the 8-week rotation. At weeks 1, 2, and 4 students were asked about their compliance. They were asked to supply pill counts and to discuss why they had not been compliant and ways in which they might be more compliant in the future. At week 4, they were asked to read the patient's chart of the medication regimen they were taking paying close attention to the consequences of noncompliance with medication. They were then asked at week 8 if reading this patient chart had made any impact on their own compliance.

Results: 35 students have completed their 8-week medication trial, but not all students have completed the exit survey. One hundred percent of the 35 students had difficulty with compliance and had to develop at least one compliance strategy--49% developed 1 strategy, 34% developed 2 strategies, and 17% developed 3 strategies. The compliance strategies developed were as follows; Location of pills (14), Using a pill box (13), Time of day reminder (7), Other (7), Meal times (6), Reminder notes (4), Brushing teeth (3), Another person reminding (2), Setting alarms (2), and Using a calendar (1). Having the students read patient charts did not prove to be as helpful for motivating compliance as anticipated. Only 26%(9) of the students found reading the patient's chart encouraged better compliance on their part. However of the 60% (21) who felt it was not helpful to read the patient's chart, 6 students admitted to not reading the chart as scheduled, and it was therefore too late to make a difference. Four students (11%) did not read the patient's chart at all. One student (3%) was "not sure." And even though most students did not feel reading the patient's chart was helpful for their own compliance, 5 of these students found reading the chart helpful in other ways, such as learning about psychiatric medications and developing empathy for the patient.

Only 18 students have completed the entire experiment at this time. Of the 18 students, 89% either agree (12) or strongly agree (4) this teaching method was effective for learning about compliance. 2 students (11%) disagree, but no student strongly disagrees. However, all 18 students learned at least one new thing about compliance issues during the experiment. As one student commented, "Following a complicated medication schedule is a full time job."

Conclusion: Innovative teaching modality was effective in promoting learning the value and understanding of psychiatric patient compliance to psychotropic medication. This learning exercise enabled students to develop their own compliance strategies from their empathic experience.

¹ Hack S, Chow B. Pediatric Psychotropic Medication Compliance: A Literature Review and Research-Based Suggestions for Improving Treatment Compliance. J Child Adolesc Psychopharm. 2001; 11:59-67. ² Morse E. Simon P. Balson P. Using Experiential Training to Enhance Health Professionals' Awareness of Patient Compliance Issues. Acad Med. 1993; 68: 693-697

³ Sutton E, Transue E. Comes S. Paauw D. Placebo HAART Regiment as a Method for Teaching Medication Adherence Issues to Students. J Gen Intern Med. 2005; 20:541-545.

⁴ Kastrissios H. Flowers N. Blaschke T. Introducing medical students to medication noncompliance. Clin Pharmacol & Ther. 1996; May: 577-582.

⁵Rudd P. Bell D. Esthima I. Medication Noncompliance: A Randomized Trail For Primary Care Skill Instruction. J Med Ed. 1981; 56:59-61. Blackwell B. Griffin B. Magill M. Bencze R. Teaching Medical Students About Treatment Compliance. J Med Ed. 1978; 53: 672-675.

Enhancing Competence Of Mechanical Ventilation Skills Among Medical Residents: An Innovative Approach *Mumtaz Zaman M.D.*

Department of Internal Medicine Marshall University School of Medicine, Huntington, WV

Introduction: Annually 1.5 million U.S patients require ventilatory support for various disease. It is known that effective methods of mechanical ventilator management can reduce the number of deaths, as well as reduce the duration of mechanical ventilation, ICU length of stay, complications and cost. It is incumbent on residency training programs to teach medical residents important elements of the management of mechanical ventilatory support in order for these physicians to provide evidence-based standards of care, yet there is a pervasive lack of satisfaction about training of mechanical ventilatory support among residents. This study provides an effective model of mechanical ventilation education.

Objectives: The objectives of the research are To improve understanding of respiratory mechanics among resident physicians To enhance their recognition and management of mechanical ventilation complications To explain volume and pressure modes of ventilation To elucidate the graphic display panels of mechanical ventilation

Methods: The same ten-item questionnaire in a multiple choice format was administered to 24 medical residents on ICU and elective rotations before and after a one hour tutorial on mechanical ventilation. The tutorial consisted of a PowerPoint presentation on graphic display of mechanical ventilator waveforms, a detailed discussion of respiratory mechanics, recognition and management of mechanical ventilator related complications and basic concepts regarding settings for volume and pressure control ventilation.

Results: The study group of 24 medical residents was equally distributed among the1st, 2nd, and 3rd years of training. The study was conducted in medical ICU and participants were required to attend the complete session. All participants completed the pre and post-test test questionnaire. The results were compiled by an independent analyst other than the principal investigator.

Resident physician scores improved dramatically after taking the tutorial. The mean raw score in pretest was 5.1 (+/- 1.6 SD) while on post-test it was 6.4 (+/- 1.5 SD) (Signed Rank Test p < 0.0001). After the tutorial the post-test scores showed a smaller SD, meaning more scores were near the means.

Conclusion: Instructors in critical care medicine should update their curriculum and develop specific mechanical ventilator learning objectives to achieve improved educational outcomes.

PROPOSED PROJECTS

Adding the Human Element to Patient Care Chuck Giangarra M.D.

Department of Orthopaedic Surgery Marshall University Joan C. Edwards School of Medicine

Purpose: To introduce to the medical student curricula a link between the concepts of humanism, compassion and empathy with professionalism.

Rationale: Students enter medical school, for the most part, due to their desire to help others. While the volume of scientific knowledge and technology has increased exponentially over the years, the curriculum has remained four years. Therefore, the amount of scientific knowledge the students acquire, along with the advancing technology, has made the practice of medicine a lot more technical and a lot less human. Empathy and compassion, traits essential for a good physician, have taken a back seat to technological advances.

I am convinced that the student's initial motivation can be rekindled by reminding them they are dealing with people with emotions not simply diagnoses. Having been a patient myself for a prolonged period of time I have witnessed the "dehumanization" of physicians first-hand.

Methods: Incorporate into the existing "approach to patient care" curricula, in second and third years, two 2-hour seminars each semester to discuss the issue of humanism in medicine. Utilizing case based-self reflective practice and/or group discussions based on a prearranged scripts or movie clips and role play, the students will be introduced to various scenarios including but not limited to delivering bad news to patients.

Multidisciplinary Teaming And Impact On The Professional Identity Of Faculty In Medical Education *Tracy L. LeGrow, Psy.D.*

Department of Psychiatry and Behavioral Medicine Marshall University Joan C. Edwards School of Medicine

Previous research has shown that training within settings where a multidisciplinary framework has been utilized has been helpful to students in terms of their ability to apply theory to practice, to the development of professional identity and to their understanding of how these disciplines work together to provide treatment to patients.

This model is widely used within the mental health field. However, little has been done to look at the perceptions of the faculty participating on these multidisciplinary teams. Faculty working in medical education typically work as clinician-educators, managing a clinical caseload and maintaining productivity while providing high quality teaching and access to experiential learning opportunities for undergraduate medical students as well as residents. The question of what impact that type of work has on faculty members' own professional identity and development will be a focus of this study.

The current project explores how multidisciplinary teaching impacts faculty members. Ethnographic interviews of all treatment providers as well as review of student evaluations of their clerkship experience will be analyzed using inductive content analysis to identify major themes.

Measuring Effectiveness of Ob-Gyn Third Year Clerkship *Karima Zwawi M.D.*

Department of Obstetrics and Gynecology Marshall University Joan C. Edwards School of Medicine

This study was conducted to evaluate the effectiveness of the OB- GYN rotation on the clinical and academic education of the third year medical students, to improve and to maximize the education benefits gained from the academic and clinical learning experience in the rotation.

Methods: This is a retrospective study based on reviewing an already answered questionnaire. The survey is from the evaluation reports of third year students after completing their rotation in the OBGYN department in 2007. The data source is the end-of-course student evaluation and feedback.

Conclusion: From my preliminary review of the data there is strong indication and evidence showing the positive effects of the degree of organization, the hands-on experience and the night float on the student rotation.

MASTER EDUCATOR

"One of the best educational experiences is one that raises a whole new set of questions. The Academy is an opportunity to think about effective educational techniques, beyond simply delivering information. As medical professionals, we are not routinely made aware of adult learning principles, as well as concepts such as effective generation of test questions. The Academy should be more widely available, and form the basis of a primer on educational technique for medical school teaching staff at all levels. In addition, it was fun."

> Bill Triest M.D. Master Educator 2007

Participating in the Academy of Medical Educators exposed me to new and exciting educational techniques. The foundation in the principles of adult learning and education that I obtained by participating in the academy continues to provide me with opportunities to share ideas with other medical educators on a local and national level.

> Bob Miller M.D. Master Educator 2007

The academy experience was wonderful. It helped me shore up my weak points and revealed my strengths. The varied format made it interesting, the outside speakers were great and the dialogue with peers was very informative and revealing. I recommend it strongly to anyone who is serious about teaching.

> Ed Pino M.D. Master Educator 2007

THE ACADEMY SALUTES NOTEWORTHY SCHOLARSHIP



Paulette S. Wehner, M.D.

several educational venues. Since 2005 she has presented a dozen posters and abstracts at the Southern Medical Society, the Fourth Mediterranean Emergency Medicine Congress, and the AHA Council on Atherosclerosis, Thrombosis and Vascular Biology. In addition, she has co-authored another twelve posters and abstracts presented at the WV STaR star symposium, The Interamerican Society of Hypertension, Experimental Biology, the ACSM Conference on Integrative Physiology Exercise, and others. Dr. Wehner continues to expand her scholarship

Dr. Paulette Wehner is an inaugural member of the Academy. Her dedication to education extends beyond the JCESOM. Her enthusiasm for scholarly activity is reflected in beyond the national platform. She is the primary author of the chapter on heart disease and other problems of the cardiovascular system for the AMA's "Guides to the Evaluation of Permanent Impairment, Sixth Edition." The book is internationally used for impairment evaluations. The Academy honors and congratulates Dr. Wehner for all her accomplishments.

THE ACADEMY Salutes Excellence In Teaching

Dr. Mitch Charles, outstanding teacher, has been a member of the Academy of Medical Educator since 2005. In joining the Academy he predicted the knowledge and skills he would gain from becoming a Master Educator would benefit all fourth-year students thorough both the Emergency Medicine rotation and the new Residency Survival Skills elective. His passion for teaching has been recognized by medical students through at least six awards for teaching excellence.

In naming him a 2008 "Hero of the Emergency Medicine," The American College of Emergency Physicians described him as "an exemplary physician who strives to harvest an interest in learning in all students

of medicine." In addition to his scholarly teaching, Dr. Charles has authored and co-authored multiple scientific presentations in the United States and abroad.



Mitch Charles, M.D., FACEP

Dr. Charles is a true inspiration for all passionate educators.

GRADUATES OF THE ACADEMY

2007 MASTER EDUCATORS

Bobby L. Miller, M.D. Chuck Clements M.D. Eduardo Pino, M.D. Mehiar O. El-Hamdani, M.D. William E. Triest, M.D.

Teaching Scholars 2007 Mathew Weimer, M.D.

2006 MASTER EDUCATORS

Adam Franks, M.D. A. Betts Carpenter, M.D. Todd Green, Ph.D. Gerald McKinney, M.D. Mitch Charles, M.D.

Teaching Scholars: Sarah Rinehart, M.D.

Hisham Keblawi, M.D.

2005 MASTER EDUCATORS

David Denning, M.D. Brenda Dawley, M.D. Joe Evans, M.D. Vern Reichenbecher, Ph.D. Darshana Shah, Ph.D. Paulette Wehner, M.D.

Teaching Scholars:

Rafael Molina, M.D. Mehdi Akhavan-Heidari, M.D. Ben Allan, M.D.



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