FROM ENRICHMENT TO EQUITY: COMMENTS ON DIVERSIFYING THE K-12 MEDICAL SCHOOL PIPELINE

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Educating a physician workforce that reflects the increasing racial and ethnic diversity of our nation is an ongoing challenge of urgent concern. Many medical school kindergarten through 12th grade (K-12) pipeline programs focus on "enriching" underrepresented minority (URM) students using strategies to change or "improve" individual students.

This discussion raises concerns over longstanding racial and ethnic inequities in America's public schools that, in part, result in the predictable and systematic underachievement of URM students. These insidious processes can disqualify URM students from successful participation in the medical school pipeline at its earliest stages. The paper also discusses the cultural challenges URM students often face in aspiring to exceptional academic achievement within America's schools. Finally, this paper highlights the need for illustrative examples of medical school-public school partnerships that pursue an agenda of equity to balance the current downstream focus on the enrichment of individual students. (J Natl Med Assoc. 2002;94:721-731.)

Key words: minority groups ◆ cultural diversity ◆ medical education ◆ undergraduate

As the nation becomes more ethnically, culturally and linguistically diverse, concerns continue to be raised about the lack of diversity within the physician workforce.[1,2] Past and current challenges to affirmative action programs have reduced the number of underrepresented minority (URM)* medical students and undergraduates in the medical school pipeline and threaten to further delay the realization of parity goals.[1-3]

Over the past several decades, sincere efforts have been made to design and implement programs to diversify the medical school pipeline from kindergarten through 12th grade (K-12).[4,5] Program intervention strategies have been categorized as containing one of several elements of role-modeling, motivation, academic enrichment, mentorship, research apprenticeships, and/or academic partnerships

*The Association of American Medical Colleges has traditionally defined underrepresented minorities as African Americans, Mexican Americans, Native Americans, and mainland Puerto Ricans. This definition is currently under further review. (See: http://www.aamc.org/meded/urm/start.htm.)

between medical schools and public school districts.[4] These efforts have focused on "enriching" individual students, making them more adequate, more prepared, or more "qualified" medical school applicants.

We argue that it is not simply that URM youth lack adequate science knowledge, interest in science, correct information about academic and application requirements, effective study skills, et cetera. Although these are certainly important factors leading to underrepresentation, there are also longstanding, insidious, and powerful processes of sorting and stratifying students by race and ethnicity within America's public schools that occur apart from an individual student's intellectual potential, motivation, and effort.

First, we review evidence that the common practice of ability-tracking disproportionately excludes URM students physically from advanced academic classrooms and excludes them psychologically from believing that they are meant to participate fully in what schools as social institutions have to offer. Second, we examine the more subtle, more difficult to document aspects of the institutional milieu of public schools, which often differentially nurture by race and ethnicity the potential of students, to the detriment of URM pupils. Third, we discuss the profound issues of cultural and personal identity that often prevent URM students from being welcomed or from embracing a welcome into the complex professional culture of medicine, a culture that closely parallels that of America's White dominant culture.[6,7]

ABILITY TRACKING BY RACE/ETHNICITY

"Ability tracking" is the elementary and secondary school practice of separating students into classrooms designed for so-called "bright, average and slow learners, and into separate programs for students expected to follow different career routes after high school graduation."[8] Tracks—individual classes or whole programs of study—are assigned based on students' relevant test scores, grade point averages, teachers' subjective assessments, and other criteria. Proponents argue that it is easier for teachers to meet the needs of students homogeneously grouped by ability, that such a system is more resource-efficient, and that students benefit from educational programs supposedly tailored to their intellectual capabilities or career potentials.

Detractors point to ability-tracking's blemished history. For example, ability tracking was used in the early part of the 20th century to relegate Southern and Eastern European immigrants to academic trajectories that would lead to menial and hard labor, apart from others of European descent thought to be naturally more capable of intellectual and professional pursuits. In the middle part of the 20th century, ability tracking also was used to resegregate individual schools that were recently desegregated as a result of the Brown versus the Board of Education Supreme Court edict.[9-12]

We call attention to ability-tracking for its well-documented potential to discriminate against URM students as early as the first grade, progressively excluding them from the classes and programs of study that might otherwise prepare them for successful progress in the medical school pipeline.[8-10,13-23] Numerous studies and anecdotal reports have shown that African American, Latino, and Native American students are overrepresented in low ability and vocational tracks, while Asian and White students are overrepresented in higher tracks, the latter including advanced placement and college preparatory classes.[8,10,15-17,19-21,24,25] For instance, in a suit brought against the San Jose (California) Unified School District in 1993, it was documented that such ability- tracking began as early as the first grade and continued through high school, with Latino students being much less likely than White and Asian students with the same achievement test scores to be placed in accelerated classes. In one instance, only 56% of 9th grade Latino students scoring between 90 and 99 (out of 100) on a relevant achievement test were placed in accelerated courses, compared to 93% of Whites and 97% of Asians with the same scores.[8] More-

over, within this same district, it was found that the parents of Latino students were the least likely to know of the district's policy that honored parents' requests for specific track placement, regardless of other "objective" measures (i.e., test scores and GPAs) and subjective measures (i.e., teachers' recommendations) of student potential.

Also in 1993, data gleaned from a successful discrimination suit against the Rockford (Illinois) Public Schools showed that while 40% of Whites scoring in the top quartile of a placement test were placed in high track English, none of the African American students who scored in this quartile gained such placement.[8] And in one Southern California school district, scoring at the 50th percentile and above on the California Test of Basic Skills (CTBS) qualified incoming 9th and 10th graders for placement in algebra. However, data gathered by the Achievement Council (Los Angeles) showed that 51% of African Americans, 42% of Latinos, 88% of Whites, and 100% of Asians gained such placement. Of those in this district who scored in the second quartile of the CTBS, 16% of African Americans, 11% of Latinos, 50% of Whites, and 83% of Asians were placed in algebra classes.[26]

Finally, in 1989, although a group of Navajo sixth-graders feeding into an integrated Utah high school all scored above the national norm in math on the Stanford Achievement Test, they were all placed in the lowest level mathematics class. When asked about this skewed placement, the principal stated, "I didn't look at the scores. . . Our Navajo students always do better in the basic classes."[17]

Whether disproportionate assignment of URM students to lower track classes and programs of study is erroneous, unjust, or neither, the quality of educational experiences is inferior to that found in higher track experiences.[8,9,13,14,20,27] Lower track classes offer fewer opportunities for critical thinking and exchange, are less likely to qualify students for college entrance, and are more likely to focus on student behavior and discipline rather than

on intellectual tasks.[8,9,13,14,20,27] Teachers of lower versus higher track classes tend to be the least qualified within a school in a given subject area, are more likely to be teaching on a noncredentialed basis, spend less time in classroom preparation, make fewer demands on students, and have lower expectations of their students.[9,14,20,25,27]

These differences in the early educational experiences of low versus high-track students result in an achievement gap that progressively widens with each grade through high school, disproportionately leaving fewer and fewer URM students realistically within the medical school pipeline without intensive remediation.[8,25,27]

The psychological impact of ability tracking, especially as it segregates children within schools by race, is particularly interesting. The inequity of racial and/or ethnic resegregation across academic tracks that URM children witness on a daily basis can also be internalized, so that students come "to expect similar arrangements of inequality in the world and to accept them as natural."[13] The message these students receive is that they are not supposed to get an excellent education, that opportunities and preparation for full and prosperous participation in our society are predetermined and belong to other children. This phenomenon, this "leveling of aspirations"[28] at the hands of schools, is critical for us to recognize in our efforts to design and implement interventions that nurture the character traits of persistence, fortitude and delayed gratification, all of which are invaluable for gaining access to a career in medicine.

It also is important to distinguish the inferior education provided by the almost euphemistic "poor urban school" from the inferior education provided by any school that uses ability tracking to intentionally or unintentionally resegregate its classrooms.[10,23,29]

Talent is lost from the medical school K-12 pipeline not just from poor urban families, but also from middle class and upper class families. For instance, data from school districts in all 50

states and the District of Columbia show that African American children are three times more likely than White children to be labeled "mentally retarded" and assigned to special education classes. Yet, African American boys in wealthier communities with so-called better schools and more White students were more likely to be assigned to special education classes than those African American boys attending predominantly African American, low-income schools.[29] Thus, our partnerships with schools are important not just to improve the quality of teaching or quantity of resources within schools, but also to assist schools in recognizing the devastating potential of unjust tracking to leave behind URM children from all neighborhoods and economic backgrounds.

THE INSTITUTIONAL MILIEU OF PUBLIC SCHOOLS

We also have concerns about the more subtle, but powerful institutional processes that differentially develop the potential of students by race and ethnicity. For instance, Harvard Law Professor Lani Guinier and colleagues studied 981 law students (43% women; 57% men) enrolled at the University of Pennsylvania from 1987-1992.[30] Women and men entered the law school with comparable pre-admission credentials. Respectively, women and men had similar undergraduate GPAs (3.52 vs. 3.49), LSAT scores (40.87 vs. 40.98), and undergraduate class ranks (80.13 vs. 78.44). An index designed to reflect undergraduate performance in the context of the rigor of the undergraduate institution (a combination of GPA, LSAT, and median LSAT at the college level) also was similar for women and men, respectively (4.73 vs. 4.74).

However, by the end of the first year of law school, male students were three times as likely as female students to be in the top 10% of the class, and 1.6 times as likely to be in the top half of the class. This "gendered" differential in GPAs remained stable over the three years of law school. Moreover, women were underrep-

resented in awards given by law school faculty, in Law Review membership, and in moot court competition.

Focus group data were obtained as part of this study. These data suggested a learning environment that was "hostile" and "alienating" to some women law students vis-à-vis gender relations between students, and between faculty and female students (i.e., willingness to mentor, approachability, teaching style, tolerance or creation of dysfunctional classroom discussion dynamics).

Guinier and colleagues speculate that the achievement gap between men and women—this gender-stratified hierarchy of achievement—implicates not the female students, but rather the institution, including its milieu, hidden curriculum, and overt and covert policies and practices. Indeed, they postulate that a powerful institutional socializing effect may perpetuate a pattern of differential academic performance:

> If [women] accepted the norm of the institution, these students come to believe that their place within the hierarchy should be toward the bottom. We believe that this element of socialization to one's "place" in the hierarchy helps to ensure the success of male students at the expense of women.[30]

Clearly, these data cannot be generalized to racial and ethnic disparities in academic achievement within public elementary and secondary schools across the country. Nonetheless, it is both intriguing and chilling to consider a similar process in which the potential of African American, Latino, and Native American students is systematically underdeveloped by America's public schools. The data from ability tracking studies support this differential allocation of America's educational resources. And yet, in classrooms and counseling sessions, how can we measure differences in minute-by-minute investments of expressed confidence, inside information, and time-intensive personal attention?

We should not hastily dismiss the effort, ability, motivation or even knowledge base of URM

students, just as we would not do in the case of the women law students. Rather, we need to consider, as do Guinier and colleagues, that there is something about the institutional milieu of American schools that leads to the chronic hierarchy of academic achievement, which finds URM students consistently at the bottom. In the same way, it must be considered that an unbalanced individual intervention strategy of enrichment or improvement, focusing solely on making "inadequate" students "adequate" (i.e., filling them up, improving them) may miss critical elements of the widespread institutional dysfunction that leads to the persistent underachievement of URM students within the K-12 system.

ISSUES OF CULTURAL AND PERSONAL IDENTITY

Profound issues of culture and identity may dissuade URM children from joining a school's community of high achievers and/or from pursuing careers in medicine.

Those Who Opt Out

Educators and psychologists say many URM students consciously or subconsciously opt out of a system that seems uninterested in fully developing their potential, in deference to the potential of students from other communities.[13,17,31-36] In interviews of 168 Navajo students who had dropped out of school in Utah, over half cited racism as a central reason. One student said simply, "I was not wanted in school."[17]

The experience or perception of systemic inequity and academic sorting can wound a child's emerging sense of self as a competent, potentially contributing member of his or her world.[28,33,37] As educator Herbert Kohl states, "Exclusion, whether based on gender, race, class or any other category, is a way of insulting and injuring people."[33]

To maintain a coherent sense of self as effectual and competent,[33,37] there can be a conscious or subconscious decision to reject the conventional or dominant society's definition of academic success. This rejection is acted out in lieu of internalizing a sense of self as inferior, a place of potentially profound hopelessness and despair. In the classroom, Kohl refers to this form of resistance or rejection of dominant standards as "not learning":

> Not learning tends to take place when someone has to deal with unavoidable challenges to her or his personal and family loyalties, integrity, and identity. . .To agree to learn from a stranger who does not respect your integrity causes a major loss of self. The only alternative is to not-learn and reject the stranger's world.[33]

This form of psychological self-preservation is perhaps what leads many African American students to label other African American students pursuing academic success as "acting White" or distancing themselves from their communities.[31] It must be considered that those students who opt out are not necessarily incapable of learning or failures at learning. Many can learn. Rather, many are students who simply do not buy into an education system that often insults them with inequitable track assignments, culturally underrepresented or irrelevant curricula, et cetera.

If we consider that some potential URM physicians are tracked out of the medical school pipeline as early as the first grade,[8,10,13,16] this phenomenon of cultural disidentification with traditional profiles of academic success might cause us to lose students at the earliest stage (kindergarten). This is a critical issue as many pipeline programs have begun to work with URM students as early as kindergarten. Equally important, those students who continue to aspire to a career in medicine may not easily be academically remediated when they present a decade later to high school pipeline programs.

Those Who Opt In

Among those who opt or buy into the goal of superior scholastic achievement, some will grapple with assuming personal characteristics or value systems that are culturally eschewed, but apparently necessary for survival within the

medical school pipeline. For instance, a psychology study incorporating experimental games demonstrated that White American children displayed more individualistic tendencies, incidentally to their detriment, while Mexican and Mexican American children engaged in more cooperative approaches to achieve the same goal.[38] Indeed, in the pursuit of academic excellence along the medical school pipeline, URM students may experience profound "cultural disconnects" as they encounter pressures to adopt a professional style characterized by assertiveness or aggressiveness, a relative lack of modesty and humility, and an individualistic orientation—a style that can do great violence to the integrity of one's ethnic and cultural identity.[7,17,32-34,36,38-41]

Still, others who have opted in or fully embraced a goal of academic excellence may find their performance subconsciously affected by the racial stereotypes that insidiously permeate American society. In studying high-achieving African American students, Stanford University professor Claude Steele and others demonstrated that simply asking students to list their race on a pre-test questionnaire or telling them that they were about to take an IQ test lowered these students' test scores relative to African American students who were not cued to think of these pre-test stimuli.[42-44] Moreover, without either of these two pre-test cues, the test performance of African American students matched that of White students. As Steele put it, "prominence or salience of the racial stereotype alone was enough to depress the performance of identified black students."[43]

Interestingly the same phenomenon, which Steele labels as "stereotype threat," was also found to operate among women and Asian American students.[42-44] Women who self-identified as having strong math skills performed more poorly than equally qualified men only when these women were told in the pre-test period that the test produced gender differences. In a separate study of Asian American women at Harvard, those whose pre-test questionnaires emphasized ethnicity scored better on math than those whose questionnaires reminded them of their gender.

In falling victim to stereotype threat, researchers agree that students need not suffer from poor self-esteem or believe the relevant stereotype is true. They need only care about the ability being tested and have, at least, a subconscious anticipation or fear of fulfilling the cued stereotype. It is sobering to think about the subtle ways in which even highly motivated, capable, and confident URM students must negotiate any number of academic tasks (e.g., oral presentations or written projects) in the face of prevailing societal expectations of their intellectual inferiority.

Although URM students may encounter unjust ability tracking and academic sorting, the selective institutional development of individuals, cultural disconnects, or "stereotype threat," none of these negative phenomena point to the need for remediation or "enrichment" of individual URM students. Rather, they reflect societal inequities overlaying an educational system that presents even highly motivated and talented URM students with formidable obstacles. These additional obstacles need careful attention in attempts to further diversify the medical school pipeline.

EXAMINING PARTNERSHIPS WITH LOCAL PUBLIC SCHOOLS

In analyzing these problems with the medical school pipeline, it is tempting to single out the American public school system, the social institution entrusted with perhaps the most important and complex task relevant to the health and future of our nation. That is not our intention in writing this commentary. In fact, one of us (J.L. M.-G.) comes from a family of public school educators and is a proud product of American public schools.

Rather, we wish to highlight what is rarely problematized in discussions about the medical school pipeline: racial inequities can and do exist in our nation's schools, mirroring a broader societal phenomenon. Inequity may

manifest itself—consciously or subconsciously, institutionally or individually—in many professions. Most relevantly, abundant evidence suggests that racism not infrequently directs some physicians' clinical decisionmaking and interactions with patients.[45,46] And as in the education profession, the exclusivity and lack of diversity within the academic medicine corps points to our collective need to examine how we might be selecting, mentoring and developing students' talent for academic medicine careers differentially by race or ethnicity.

Such potential commonalities should not preclude us from participating in and critically examining our role in K-12 education and, specifically, the medical school pipeline. Clearly, we should not limit ourselves to downstream solutions that "enrich" individual students we know to be systematically undereducated and relegated to academic trajectories of underachievement that do not develop their full potential. At the least, without explicit comment on this predictable reproduction of inequality, we risk becoming one more well-funded brick-in-the-wall of the status quo of America's racial stratification—however well-intentioned our efforts might be.

Long-term partnerships with local public schools perhaps provide the best opportunity for meaningful change in diversifing the medical school pipeline. The best known of such partnerships exists between the Baylor College of Medicine and Houston's public schools. Baylor hosts many innovative pipeline programs that serve individual students.[47,48] At the same time, however, working on a systemic level, Baylor faculty members ". . .have become deeply involved in their local school system and. . .have put pressure on the community's political leadership to recognize that education needs to be its first priority."[47]

Other programs, not necessarily linked to the health professions, have guaranteed admission and/or free tuition to local colleges provided students meet admission requirements. At the University of California, Davis, the Reservation for College Program asks students and parents to sign a contract to participate in college preparatory, mentoring and other activities that emphasize the importance of a higher education.[49]

Such programs provide excellent opportunities to collect longitudinal data on students' progress by race, ethnicity, and language proficiency. And especially for programs that start at the earliest possible point in the medical school pipeline (i.e., kindergarten), racial differences in participation and achievement should alert program planners—year by year—that the educational process is not equitably meeting the needs or fully developing the potential of all children. At each assessment, with qualitative and quantitative research approaches and other resources, the nature and reason for the inequality can begin to be fleshed out as it manifests itself locally. Ironically, the availability of achievement data disaggregated by race and ethnicity is apparently being threatened by some district administrators who are increasingly unwilling to release these figures.[22,24] Successful lobbying for the continued availability and constructive scrutiny of these disaggregated data could be perhaps one of the most important and tangible contributions of medical school—public school partnerships.

Of course, those local partnerships that do not reproduce academic differences by race and ethnicity should be highlighted for both local and national learning. With this type of regional accountability of both local schools and their university partners, long-term partnerships ideally hold much potential to facilitate an end to the seemingly perpetual need for medical school pipeline enrichment programs.

Ethnic Identity and Academic Success

Numerous authors and educators support the notion that a strong and constructive ethnic identity or connection to one's culture and community facilitates URM students' academic success.[16,17,34,36,41,50-57] For instance, in studying Native American students, Deyhle[17] found that students with close ties to their ethnic commu-

nity and its traditional values were more likely to do well in school relative to students without such strong cultural ties. In another study,[56] Gándara interviewed Chicanos from low-income families who subsequently achieved M.D., Ph.D., or J.D. degrees. These successful graduates recounted that their academic discipline and achievement were greatly influenced by their parents' stories about their lives and struggles in Mexico.

African Americans have long used educational attainment as an act of resistance in the battle against exclusion.[58,59] More recently, investigators have demonstrated that this adaptive coping strategy is more likely to be utilized by high-achieving African American students than by African Americans with lower grade point averages.[53,60]

Nonetheless, as previously discussed, it is important to remember those students who opt out of the pursuit of academic achievement as an alternate form of resistance and as a means to assert and protect their identity.[31-33,35,36] We hope that attempts to nurture these "at-risk" students' adaptive ethnic identity would re-engage them and coax them from their spaces of despair, disidentification and disconnection with the schooling process, a process in which many see themselves as never succeeding. As Sanders states,

> By transmitting an awareness of racial discrimination and an achievement orientation that has been a central part of the African American experience, Black students' family members, teachers, ministers, and others responsible for their upbringing and socialization may diminish the likelihood that these youth will have a negative orientation toward schooling and academic achievement. . . Thus, positive racial socialization practices that teach black youth about racism and discrimination and that expose them to constructive ways to respond to each may be important to the educational and personal success of the African American child. . .Such practices of positive racial socialization may be aptly and usefully conceived of as an important and heretofore under-researched form of parental and community involvement in the education of African American children and other minority youth.[53]

Several innovative intervention programs have successfully utilized the strengthening of ethnic identity as a means to enhance the educational performance of URM children and young people.[39,41,50,52,55,61-63] They have forged students into activists in their own educational success, preventing them from becoming maladaptive resisters who, in varying degrees, disengage from school. A central component of these effective programs is to expose, directly confront, and strategically negotiate the powerful academic and social isolation and sense of exclusion URM students often experience. This sense of exclusion and isolation may include a feeling of academic survivor guilt in being one of only a few members of their communities to aspire to, be tracked into, and be successful in advanced scholarly pursuits. Students are taught to problem solve in constructive and adaptive ways, for the good of their futures and that of the communities depending on their success.

For example, the Neighborhood Initiative Program, based in inner-city Los Angeles and run by the University of Southern California, makes use of a "cultural integrity" model to increase low income and URM students' access, participation and retention in post-secondary education.[41] The program's thoughtful attention to the development of each student's cultural identity, versus the abandonment of such identities, has led to more than an ethos of excellence in effort and performance among the program participants and their families. An equally important and necessary outcome is that "students arrive on college campuses with an enhanced awareness of their cultural identities that equips them with the sense that they *belong* there [Tierney's emphasis]. Such a sense of identity and self-efficacy is manifested when an adolescent has the linguistic and mathematical abilities to do college-level work, yet it also derives from an identity framework that affirms and supports notions of the students' cultural background."[41]

To date, as far as we are aware, there is no evidence that the students of these successful

programs adopt an *a priori* adversarial, reactionary, and ultimately maladaptive stance towards public schools systems, teachers, or members of the dominant society. Rather, students are taught to advocate for themselves practically and psychologically within a system they are both called to succeed in and from which they witness themselves and those like them overtly or more subtly, progressively excluded. Practical skills and arenas for self-exploration and social critique are provided to expose students to more expansive and just notions of American democracy that include all students in the "full blessings of liberty."

We suspect there are such medical school pipeline programs. Terms such as "role modeling" or "motivation" may encompass or include ethnic identity development as an intervention strategy. It would be instructive to have detailed descriptions of the components of such programs: what works, what does not, what challenges were encountered, et cetera.

These programs should not be perceived as threatening. They are not meant to intimidate the members of any community. They do clearly distinguish for URM students the difference between fully and equitably participating in the educational system and having their "inadequacies" improved or "enriched." The programs are revolutionary only in that they do not leave unexamined and uncritiqued the status quo of racial stratification and sorting in American public schools. Such program models are necessary not only to successfully cultivate a more diverse physician workforce, but also to ultimately have a more just and healthy society.

CONCLUSION

We have discussed evidence of unequal opportunity and access to knowledge within the nation's public schools, and the cultural disconnects that occur therein. These inequities result in the systematic undereducation of URM students and continually thwart our best efforts at developing a more diverse physician workforce. If our goal is to put ourselves out of

the business of having to create pipeline-enhancing intervention programs, then we need to examine, humbly and respectfully with our public school partners, these and other persistent elements of the status quo that preclude our success in doing so.

ACKNOWLEDGEMENTS

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