Uncovering Myths and Transforming Realities among Low-SES African-American Men: Implications for Reducing Prostate Cancer Disparities

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Purpose: Prostate cancer provides the most dramatic evidence of cancer disparities based on race and ethnicity among U.S. men. African-American men still hold a commanding lead in both prostate cancer incidence and mortality, particularly among those of low socioeconomic status (SES) and the medically underserved. Therefore, the need for early intervention persists. The purpose of this exploratory pilot study was to: a) assess the knowledge of a cohort of low-SES African-American men regarding prostate health/prostate cancer, and b) uncover myths/misinformation as barriers to prostate health decisions and behaviors.

Procedures: Asymptomatic African-American men participated in focus groups to candidly discuss: a) health concerns, b) prostate health, c) prostate cancer screening, diagnosis and treatment, and d) factors influencing prostate health decisions/behaviors.

Findings: Participants revealed sociocultural and psychological barriers: myths and lack of accurate/adequate knowledge about prostate health and cancer, fear, denial and apathy.

Conclusions: These findings suggest factors that may explain the reluctance and limited participation in prostate health and prostate cancer services among medically underserved, socioeconomically disadvantaged, African-American men. Lack of knowledge, which affects all barriers to care, is amenable to change. Therefore, improvements in prostate cancer outcomes are achievable through culturally and linguistically appropriate health education tailored to their specific needs.

Key words: African Americans ■ prostate cancer ■ disparities ■ myths ■ health education

© 2004. From Virginia Commonwealth University, School of Education, Richmond, VA (Richardson); University of Michigan, School of Public Health, Ann Arbor, MI (Webster); and Prince William County African-American Health Council, Dumfries, VA (Fields). Send correspondence and reprint requests for *J Natl Med Assoc.* 2004;96:1295–1302 to: Virginia Commonwealth University, School of Education, 817 W. Franklin St., P.O. Box 842037, Richmond, VA 23284-2037; phone: (804) 827-9345; fax: (804) 828-1946; e-mail: jtrichar@vcu.edu

INTRODUCTION

The elimination of racial and ethnic disparities in health is an overarching goal of U.S. public health policy.[1] Although the magnitude of the disparities is evidenced in a plethora of diseases across racial and ethnic groups, the extent of the problem is no more clearly illustrated than in cancer among African Americans. Overall, they are more likely to develop and die from cancer than any other racial and ethnic group.[2] *Healthy People 2010*[3] reports that "African Americans are about 34% more likely to die of cancer than are whites and more than two times more likely to die of cancer than are Asians or Pacific Islanders, American Indians, and Hispanics." In further defining the unequal burden of cancer, no other cancer provides a more compelling case for eliminating disparities in African-American men than prostate cancer.

BACKGROUND

Epidemiological Data

Prostate cancer is the most common cancer (excluding skin cancer) and the second leading cause of cancer death among U.S. men.[4] An estimated 230,110 new cases will be diagnosed, and 29,900 deaths will occur in 2004.[4] Despite overall declines in U.S. prostate cancer incidence and mortality rates, both rates remain significantly higher in African-American men, compared to Caucasian men. African-American men are more than twice as likely to die of prostate cancer than men of any other racial and ethnic group.[4] In fact, African-American men continue to experience the highest prostate cancer incidence and mortality rates in the world.[2]

In addition, previous research has reported disproportionately lower survival rates and higher mortality rates for cancer, including prostate cancer, among the socioeconomically disadvantaged and medically underserved, compared to persons at higher income levels.[4-6] In discussing cancer disparities, a recent report indicated that "poor and medically underserved populations have higher risks of developing cancer and poorer chances of early diagnosis, optimal treatment, and survival."[4] For instance, the gap in prostate cancer deaths between poor and wealthy men has continued to widen since 1990, resulting in a 22% higher prostate cancer death rate in 1999 for men in poorer counties compared with men in affluent counties, according to data from the Surveillance, Epidemiology, and End Results (SEER) program.[6] In spite of decades to alter these trends, such disparities remain significant and unresolved public and community health problems.

Risk Factors

The possible explanations for the alarming disparity in prostate cancer outcomes are multifactorial and imply a synergistic relationship between biologic, socioeconomic, lifestyle, cultural, environmental and/or occupational factors. According to the American Cancer Society, the only well-established risk factors for prostate cancer are age, ethnicity, and family history in that: a) >70% of cases are diagnosed in men over 65 years old, b) African-American men hold commanding leads in both incidence and mortality, and c) recent genetic studies suggest a strong familial predisposition being responsible for 5–10% of prostate cancers.[4] Recent international studies also suggest dietary fat as a risk factor.[4,7] Since the definitive biologic etiology of prostate cancer remains unknown,[7] further investigation is warranted to substantiate the influence of modifiable, nonbiologic risk factors on prostate cancer disparities.

Previous research has reported disproportionately higher risks of developing cancer, lower survival rates and higher mortality among the socioeconomically disadvantaged and medically underserved in comparison to persons at higher income levels.[4,8,9] In emphasizing the association of socioeconomic status (SES) to cancer risk, poverty has been described as a carcinogen.[10] This is particularly relevant for African Americans. Although African Americans comprise approximately 12% of the total U.S. population, they account for one-third of the nation's poor.[5] Thus, the cancer risk for poor African Americans is profound.

Inasmuch as African-American men are more likely to be diagnosed in later stages of prostate cancer than their European-American counterparts, it is likely that aspects of SES, such as access to care and education, play a major role.[5] For example, low economic status may be associated with limited access to care, not having health insurance, and later detection. In turn, late detection may result in a lower cure rate, shorter survival, and higher mortality.

Lack of prostate health knowledge is also a major factor contributing to the African-American male population's failure to participate in screening, presentation with more advanced disease, lower cure rate and shorter survival. These men know very little or nothing about prostate health, prostate cancer, its symptoms, its well-described risk factors (age, African-American race, family history, high fat diet) or the importance of cancer prevention, early detection and screening.[4,11] More often than not, what little they do know is shrouded in misinformation, misunderstanding and myths, leading to a severe knowledge gap that leaves them chronically uninformed.[3,12]

This knowledge gap directly impacts their prostate health and prostate cancer behavior. Ironically, even if chemopreventive measures for prostate cancer became mainstream, the benefit to socioeconomically disadvantaged, medically underserved, African-American men would be minimal, due in large part, to lack of credible information.[13] Hence, the portrait of African-American men reflects a highly vulnerable population still at risk for prostate cancer's most profound adverse effects.

Thus, the impact of factors associated with low SES in combination with higher prostate cancer incidence and mortality based on race present a compelling healthcare challenge. These factors place socioeconomically disadvantaged, medically underserved, African-American men in double jeopardy for adverse prostate cancer outcomes.

Detection and Treatment of Prostate Cancer

Far too often, being asymptomatic implies wellness, a particularly dangerous assumption in many disease processes, including prostate cancer. Thus, the two commonly used early detection methods for prostate cancer, i.e., the digital rectal exam (DRE) and the prostate-specific antigen (PSA) test, are underutilized relative to the recommendations. Granted, extensive debate surrounds whether or not widespread screening reduces deaths or if early treatment is more effective than treatment of late or advanced prostate cancer in prolonging life.[14] Friedrich points out that it is unclear whether screening is associated with decline in mortality.[15] Similarly, Hahn proposes that we "cannot know whether PSA decreases" cancer morbidity and mortality, since the results of randomized controlled trials for prostate cancer screening and detection are not available.[16] This issue is compounded by the fact that actual sensitivity, specificity and predictive value of the DRE and the PSA are low.[17]

However, in spite of the controversy, men should have accurate information about the benefits and limitations of screening to enable them to make informed decisions regarding participation in testing. The American Urological Association (AUA) and the American Cancer Society (ACS) recommend that prostate cancer screening begin by age 50 for men without relevant risk factors (i.e., race/ethnicity, a strong family history of prostate cancer, etc.).[4,18] In the case of African-American men who are at high risk for prostate cancer and its associated morbidity and mortality outcomes, ACS and AUA recommend that an early detection program begin five-to-10 years earlier (i.e., 45 years of age and 40 years of age, respectively).[4,18]

Further concerns focus on the patient's lack of or limited understanding of the implications of a positive test result and the physician's inability to effectively educate and/or counsel the patient about the test results. O'Dell and colleagues concluded from a study that focused on informed decision-making among 160 men aged 45–70 that less-educated men might not avail themselves of screening because of lack of prostate cancer knowledge.[19] The issues surrounding screening, detection, and treatment are further compounded when one considers the limited information or misinformation that some physicians convey to the patient.[16,19,20]

In spite of these screening-related drawbacks, there is no known means of preventing prostate cancer currently available or on the horizon. The only "practical strategy for reducing cancer suffering and death" is appropriate early detection.[16] However, given the target population's absent to limited knowledge about prostate health or prostate cancer, they are not likely to avail themselves of early detection opportunities. Therefore, the purpose of this exploratory pilot study was: a) to assess the knowledge of a cohort of low-SES, African-American men regarding prostate health, prostate cancer, screening, diagnosis, and treatment and b) to uncover myths, misinformation, and misunderstanding that serve as barriers to their prostate health decisions and behaviors.

PROCEDURES

Design

This exploratory pilot study collected primary data from African-American male residents in Prince William County, VA. The qualitative research design used focus group interviews to obtain the data. This method is employed extensively to investigate health-related factors, such as knowledge, attitudes, beliefs and behaviors.[21,22] According to Zarcadoolas, in focus groups, "participants vent their views, respond to each other, and vent some more, offering opinions, prejudices, fears and spontaneous retorts."[22] Focus groups yield rich data on dynamic beliefs and attitudes of individuals interacting in small groups that quantitative methods do not.[21,23-25]

A focus group facilitator uses a standard set of questions to elicit individual responses and discussion within the context of the group. In this environment, an interplay of participant responses occurs, allowing for enhanced depth of responses and sharing of a social and emotional context.[24] Participants voice their beliefs, attitudes, and behaviors in their own vocabulary and communication patterns (including slang and colloquialisms). This exchange provides critical insight into understanding specific cultural health patterns of different ethnic and cultural groups.[24]

The number of participants in a focus group is important. Too many participants (i.e., greater than 10) could be problematic because participants who are less out-spoken and less assertive may not express their opinions. Those unspoken opinions could either offer different insight or further support the hypothesis.[23]

Setting

The setting reflected characteristics (i.e., low SES, low educational attainment, African-American men) typically associated with low utilization of preventive health services, including prostate cancer screening. The participants resided in or near a low-to-moderate income apartment complex. The two focus group sessions were conducted in the complex's community center (a familiar, neutral and convenient location within walking distance from their homes) and at a local school. Historically, the geographic area was considered rural or semirural. However, due to its proximity to Washington, DC, the area has evolved into a "bedroom community" (a commuter community for those working in the Washington, DC metro area). Therefore, the participants represented a cross-section of men from various geographical backgrounds resulting in data that is not limited to a purely urban or purely rural perspective.

Sample

Fifteen African-American men ranging in age from 33–47 years old participated in the pilot study. The mean age was 40.5 years of age. Although several of the men in the sample fell below the recommended screening age for African-American men, (40 years of age according to the AUA and 45 years of age according to the ACS), prostate health myths and misconceptions are pervasive regardless of age. Therefore, engaging younger members of the target population is justified in order to uncover their knowledge, attitudes, and behaviors, and transform those that would serve as barriers when they reach the age for prostate screening.

The participants either worked in low-wage jobs, were unemployed or disabled. The average household income ranged from $18,000–$19,999. Only men who were asymptomatic, had no prior history of prostate cancer, no benign prostate disease, and no other cancers were eligible to participate.

The Prince William County African-American Health Council, a grassroots community-based organization founded to address the health needs of African Americans in the county, conducted the recruitment. The Council designated lay community leaders to recruit study participants. The lay community leaders identified potential participants and briefly discussed the project, either in person or by telephone and referred them to the program director. In addition, potential participants shared the information with other men, resulting in a snowball sampling effect that produced additional participants.

Twenty-five men were invited with the expectation that at least half would actually attend the sessions.

Data Collection

Two focus group sessions were conducted, each lasting approximately two hours. The first session was comprised of six participants, while the second session included nine participants. A cordial, informal atmosphere was created during lunch prior to the session. The trained facilitator was matched to the participants based on gender and ethnicity (i.e., an African-American male conducted the prostate cancer focus groups).

In order to build trust and credibility, the facilitator opened the session with introductions and a brief explanation of the purpose of the discussion, how it would be conducted, and provided assurance that the discussion would be confidential. The facilitator also emphasized that they would learn during the discussion and the information would be used in developing prostate health education programs to benefit African-American men and their families. Following the overview, participants read and signed informed consent documents.

The discussions opened with an icebreaker question regarding participants' general health concerns. Subsequent questions addressed: a) prostate health b) prostate cancer screening and treatments, and c) influences on prostate health decisions and behaviors. With permission from the participants, each session was audiotaped. In addition, the moderator used a flip chart to record key statements of the participants that emerged from their free flow of ideas and spontaneous retorts. The participants referred to the flip chart to either reiterate a point that was previously stated by another participant or to check for redundancy. The facilitator used the flip chart only to record participant statements as a reference for their discussion and not to guide the discussion.

Because of the assurance of confidentiality, participants provided open, honest and frank responses. At the conclusion of each session, participants were remunerated $20 each.

Analysis

Audiotapes of the focus group discussions were transcribed verbatim. The research team thoroughly read and inductively evaluated the transcripts. Pattern analysis was used to identify and bring together fragments or components of ideas or experiences representing micro units of behavior. The patterns were then used to delineate themes representing macro units of behavior. The thematic analysis extracted central themes that explained multiple aspects of behavior. Thoroughly examining both patterns and themes yielded an in-depth analysis of the issues under investigation.[21,26-28]

RESULTS

The qualitative data analysis revealed six themes that can be broadly categorized as knowledge and attitudinal barriers. Specifically, the knowledge barriers were: 1) lack of accurate information 2) misunderstanding and half truths, and 3) myths. The attitudinal barriers were: 1) fear, 2) denial, and 3) apathy. Participants reported that the presence of these barriers resulted in either poor participation or no participation in prostate health or prostate cancer prevention and control activities. Table 1 highlights individual quotes extracted to emphasize the significance and depth of the barriers.

Knowledge Barriers

Having identified cancer among their major health concerns, the participants admitted they knew very little or nothing about the prostate or prostate cancer. They were very unclear about the specific function of the organ but were certain that it was related to sexual performance.

The participants' comments revealed an overall lack of accurate information regarding prostate cancer risks, symptoms, screening methods, treatment, and cure. They did not perceive themselves at high risk for prostate cancer unless a close relative (e.g., father, brother, grandfather) had experienced the disease. In addition, they were unaware of the relationship between race and prostate cancer incidence, and the relationship between age and prostate cancer onset. Although the respondents ranged in age from 33–47 years old, the absence of age as a perceived risk was poignantly expressed in the words of one participant:

"If we don't have it [by] now, we're in good shape."

Participants expressed that they did not know the warning signs for prostate cancer but assumed they would experience some discomfort if they had the disease. They were shocked to learn that prostate cancer could be present without symptoms.

Of the commonly recommended screening practices, they were unaware of PSA testing, but most had heard about the DRE, although they did not use that term. It was referred to as the "finger test." They knew half-truths in that they were somewhat knowledgeable about the basics of how the examination was conducted; hence, they called it the "finger test." However, the consensus was that "they weren't quite sure what it was for." During that discourse, the general opinion was discomfort with the idea that someone (regardless of it being a medical professional) would perform the finger test, because of the perceived sexual overtones.

One participant graphically described his perception of what was involved in prostate cancer screening by stating:

"They run a tube up there and collect saliva or moistness from your penis."

The other men cringed at the thought of what had been described, muttered undertones about not being willing to undergo that procedure, and either nodded or gestured a high-five in agreement. For them, this myth about screening had become a reality that could influence their decisions not to participate in screening in the future.

In terms of treatment, they believed that surgery was the only option, which would undoubtedly result in impotence. Again, the muttered undertones and gestures indicated that this was very unsettling for them as poignantly expressed by one of the participants:

"You don't wanna hear that your jewels are gonna be cut off."

In this instance, due to the lack of knowledge about treatment options, the respondent's comment reflects his understanding that whenever the disease

Table 1. In Their Own Words

Symptoms:

"Your sex drive is gone."

"You won't ____ [urinate] like you want to. In other words, you'll be dead down there; dripping."

"A lot of people think they have penis paralyzed."

"Pain will drive everybody to the doctor; they don't want to feel no pain."

"When you stand over that stool for hours wondering why your ____ [urine] ain't coming out, then that's when you make a decision."

Detection:

"The doctor puts a glove on and put his finger in your butt and look for big bumps all around your rectum."

"They call it the rubber glove test—goldfinger."

"They run a tube up there and collect saliva or moistness from your penis."

"He'll do a self-examination before he'll get up and go to the doctor and say, Check this out, man."

"Anytime a man won't go get a shot for the clap, you know d ___ well he's not goin' to sit down on a bench and let a man stick his finger up his butt."

"You see, Marion Barry got his before it was way too big."

Treatment:

"You don't never want to hear that your jewels are goin' get cut off."

Access:

"Brothers in the 'hood don't get check-ups as often. It ain't no free clinics around here."

Overall Perceptions:

"I never met nobody admit they had that [prostate cancer]. When we get prostate [cancer], you're dealing with personal stuff, and a lot of people don't want to walk around telling about it...When they go up in there and it's too late, you might end up getting your _____ [testicles] cut off. Then you strapped down and all that. That's embarrassing."

"Men won't say nothing, just like a woman won't tell you she got breast cancer. But that may get to be a popular thing because a woman can usually check herself for that. But, they ain't goin' make no commercial where the guy can rub down there and say, Yeah, man, I've got a bump or one of my ____ [testicles] is bigger than the other."

"Right now, the brothers are just searching for life. They're not concerned healthwise. They're just looking at—I'm alive."

is treated surgically, it means removing the testicles. Such self-perpetuating misinformation and myths block African-American men from participating in prostate health activities.

Attitudinal Barriers

The respondents' comments uncovered fears of the actual screening procedures and the consequences if prostate cancer were found. Specifically, they expected and feared pain during DRE as well as the procedure they described involving a tube inserted into the penis. Their greatest fear was of the possible consequences of a prostate cancer diagnosis, including: impotence, the loss of masculine appeal, a negative reaction from their romantic partner, embarrassment, debilitating illness, loss of employment, suffering, and death.

To repress their fears, several participants assumed a posture of denial that prostate cancer could happen to them. Being in denial allowed them to negate their risks and to accept as truth such myths as "they had passed the age to be at risk." In addition, it allowed them to psychologically protect their sexual potency, the primary symbol of their masculinity. Thinking otherwise was emasculating.

Others expressed apathetic indifference to the risks, early detection, diagnosis, and treatment of prostate cancer. Their stoicism defended their masculinity but resulted in no participation in prostate health or prostate cancer prevention and control activities.

DISCUSSION

Socioeconomic disadvantage and being an African-American man heighten the risk of experiencing the most profound negative consequences of prostate cancer. The interplay of their knowledge barriers and attitudinal barriers to care predisposes these men to poor prostate health, late stage diagnosis, treatment delays, and, ultimately, poor survival. Theoretically, however, these barriers can be overcome much easier than biology or genetics. This strongly implies that the disparity in the target population's poorer prostate cancer outcomes can be significantly reduced if the nonbiologic barriers are addressed.

The findings in this study highlight the urgency of effectively educating socioeconomically disadvantaged, medically underserved, African-American men about prostate health and prostate cancer. Their knowledge base was full of misunderstandings, misinformation and myths that inextricably linked to their attitudinal barriers (i.e., fear, denial, and apathy), thereby, preventing participation in prostate health activities as well as prostate cancer control activities at the appropriate age. Therefore, accurately educating these men could produce dual results, i.e., alleviating both the knowledge gap and the attitudinal barriers to care.

To illustrate their knowledge limitations, several participants believed their age (33–47 years old) placed them safely beyond the age to be at risk for prostate cancer. Although the age of the sample was not targeted to older men, because of the transgenerational cultural norms related to prostate health it is important to begin addressing attitudes early. These misunderstandings, miseducation, and myths around prostate cancer become ingrained in and are pervasive among younger African-American men and affect their health behaviors and decisions to undergo screening in the future when it is age-appropriate. Moreover, the misunderstandings and myths are perpetuated throughout their social interactions at work, within the family, and in the community.

As another illustration, the participants were shocked to learn that prostate cancer can be present without manifesting symptoms. That reaction was particularly informative in that the efficacy of prostate cancer screening is predicated on identifying the disease in asymptomatic men. Therefore, their lack of such knowledge precluded early detection, diagnosis and treatment. If the men did not know and understand the possibility of early prostate cancer without overt symptoms, they would not be motivated to undergo periodic screenings. They would only seek care when symptoms were present, the point at which the disease is more advanced.

Fostering of supportive relationships with family, peers, and health professionals is also needed. Patient-sensitive and culturally sensitive health professionals and indigenous lay health workers, in concert with existing social networks, can develop, implement, and evaluate prostate health promotion initiatives tailor-made for the target population. In addition to disseminating basic facts, these initiatives must address debunking the myths for the men, their wives/female partners, family members, friends, and the community-at-large as well as enhancing the self-esteem of the men.

In patient–physician interactions, it is critical that substantive, two-way, reflective communication between the physician and the patient be conducted on a level understandable by the patient. The physician, the most respected source of health information, can ensure full disclosure of information about prostate health and prostate cancer screening, diagnosis, treatment and its consequences in ways that are culturally sensitive and linguistically appropriate for the target population. The "how," "why," and "when" of procedures should be fully explained and the appropriate recommendations made, respecting the patient's right to make an informed decision.

Health professionals must also be aware that there is no single, best way to reach, teach and impact all men. Thus, efforts to positively change the behaviors of the target population must take into account and respect the unique barriers that render them less receptive to mainstream health resources, as reflected in their stoicism regarding health matters. Therefore, the establishment and institutionalization of innovative, client-driven, custom-made programs is warranted. Otherwise, efforts to superimpose standard programs on a unique group of men will be futile.

Several limitations are inherent in this study. First, the participants comprised a convenience sample of men who met the eligibility criteria (i.e., African-American, asymptomatic for prostate problems, no prior history of any cancer, and low SES). Secondly, the sample size was small (n=15). Thirdly, data collection was limited to two, single point-in-time focus group discussions with participants from the target population. Less than three focus groups may result in a failure to discover critical information to support the research hypothesis. However, the funded study protocol only allowed two focus groups. Fourthly, these findings may not be applicable to African-American men of higher SES nor can the investigators determine if the findings differ from those of low-SES men of other races/ethnicities. Given those limitations, generalizability is limited. Lastly, the inductive coding and thematic extraction of focus group data may vary between investigators, resulting in consensus-derived themes.

In spite of the limitations, however, the focus group approach was appropriate for the inquiry and provided a unique opportunity to delve into sensitive concerns that result in underutilization of prostate health education and prostate cancer control activities, and, ultimately, poor prostate cancer outcomes. This approach encouraged African-American men to openly discuss and share feelings, perceptions, and experiences, and facilitated teachable moments when participants' misunderstandings could be immediately and sensitively corrected. Furthermore, the themes succinctly and intuitively summarize the feelings, perceptions, and experiences of the men, and suggest relationships for further exploration with a larger cohort of the target population in the 45–65-year-old age range, additional focus groups exploring the themes which emerged from the pilot study, and a quantitative study guided by the focus group results. A complimentary study could be conducted with prostate cancer survivors from the target population to corroborate the findings from the pilot study related to barriers to prostate cancer screening behavior.

CONCLUSIONS

Fundamental to leveling the unequal burden of prostate cancer in socioeconomically disadvantaged, medically underserved, African-American men, is closing the knowledge gap. Increasing their knowledge is necessary to banish the pervasive myths, misinformation, and misunderstanding and to replace them with factual and accurate prostate health and prostate cancer information. Information is the critical element of informed participation and decision-making. It is empowering and democratic. It transforms realities based on myths and misunderstanding to realities based on truth. Prostate health promotion and prostate cancer control efforts, based on cutting-edge information delivered with cultural relevance, sensitivity, and linguistic appropriateness, offer promise in helping to reduce the unequal burden of prostate cancer.

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UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE. As part of our faculty expansion, the Division of Pulmonary and Critical Care Medicine at the University of Maryland seeks qualified individuals for the following positions:

1. **Pulmonary/Critical Care/Sleep** – Assistant/Associate Professor level. Join the Division and the University of Maryland Sleep Disorders Center, which is fully accredited by the AASM. Sucessful candidate must be **BC/BE in Pulmonary Disease and Critical Care Medicine and Sleep Medicine** with strong clinical, teaching and research skills. Reference Position 03-309-410.

2. **Mid-level/Senior Investigator** – Assistant/Associate/Professor level. Qualified MD or PhD investigator. Candidates should have a funded research program focused on an aspect of lung inflammation or injury, including fibrosis/repair, airway epithelial cell biology, asthma, ARDS, and lung-specific immunology. Physicians should be **BC/BE in Pulmonary Disease and Critical Care Medicine**. Reference Position 03-309-324.

3. **Pulmonary/Transplant** – Assistant/Associate Professor level . Qualified individual to join the Division as part of the Pulmonary Transplant program. Candidates should have completed a fellowship or equivalent training and experience in lung transplantation, and be **BC/BE in Pulmonary Disease and Critical Care Medicine**. Individuals with sufficient experience may qualify as Medical Director of the Pulmonary Transplant Program. Reference Position 03-309-342.

4. **Pulmonary/Critical Care** – Assistant/Associate Professor level. Join the Division to expand our clinical practice and clinical research programs in pulmonary medicine. Potential areas of interest include diagnostic bronchoscopy, pulmonary hypertension, and interstitial lung disease. Candidates should be proficient in pulmonary procedures and outpatient practice of pulmonary medicine. **BC/BE in Pulmonary Disease and Critical Care Medicine**. Reference Position 03-309-409.

Candidates for all positions should submit cover letter, CV and a brief statement summarizing clinical and research interests to Jeffrey D. Hasday, MD, Chief of Division of Pulmonary and Critical Care, c/o JoAnn Gibbs, Academic Programs Office, Department of Medicine, Rm N3E10, University of Maryland Medical Center, 22 S. Greene St., Baltimore, MD 21201. (email: jgibbs@medicine.umaryland.edu)

Please reference the appropriate position # in your correspondence. The University of Maryland, Baltimore encourages women and minorities to apply and is an AA/EEO/ADA Employer. Candidates can learn more about the division from our website www.umm.edu/pulmonary/index.html.