BRAIN DEATH IN ISLAMIC ETHICO-LEGAL DELIBERATION: CHALLENGES FOR APPLIED ISLAMIC BIOETHICS

AASIM I. PADELA, AHSAN AROZULLAH AND EBRAHIM MOOSA

ABSTRACT
Since the 1980s, Islamic scholars and medical experts have used the tools of Islamic law to formulate ethico-legal opinions on brain death. These assessments have varied in their determinations and remain controversial. Some juridical councils such as the Organization of Islamic Conferences’ Islamic Fiqh Academy (OIC-IFA) equate brain death with cardiopulmonary death, while others such as the Islamic Organization of Medical Sciences (IOMS) analogize brain death to an intermediate state between life and death. Still other councils have repudiated the notion entirely. Similarly, the ethico-legal assessments are not uniform in their acceptance of brain-stem or whole-brain criteria for death, and consequently their conceptualizations of brain death.

Within the medical literature, and in the statements of Muslim medical professional societies, brain death has been viewed as sanctioned by Islamic law with experts citing the aforementioned rulings. Furthermore, health policies around organ transplantation and end-of-life care within the Muslim world have been crafted with consideration of these representative religious determinations made by transnational, legally-inclusive, and multidisciplinary councils.

The determinations of these councils also have bearing upon Muslim clinicians and patients who encounter the challenges of brain death at the bedside. For those searching for ‘Islamically-sanctioned’ responses that can inform their practice, both the OIC-IFA and IOMS verdicts have palpable gaps in their assessments and remain clinically ambiguous. In this paper we analyze these verdicts from the perspective of applied Islamic bioethics and raise several questions that, if answered by future juridical councils, will better meet the needs of clinicians and bioethicists.

INTRODUCTION
As with other ethical traditions, the field of ‘Islamic bioethics’ has grown from a diversity of stakeholders with multiple needs and varied interests. In Islamic bioethics circles medical practitioners, health and health policy researchers, social scientists, historians, Islamic studies scholars, as well as traditional jurisconsults (muftis) opine on matters of Islamic law, ethics and medicine. While each group brings forth its expertise to address questions of how Islamic values interact with, and influence, medical practice, the discourse often occurs within ‘silos’ with little cross-talk, and seldom directly reaches patients and physicians in a practical form. While diverse in disciplinary foci all of these scholars share in their use of Islamic ethico-legal religious verdicts and responsa literature, fatawā (sing. Fāṭwā), and group deliberations, qarara (sing. Qara) to inform their assessments. Thus clinicians use fatawā to understand the permissibility of


Address for correspondence: Dr. Aasim I. Padela, Program on Medicine and Religion, Department of Medicine, University of Chicago, 5841 S. Maryland Ave, MC 5068, Chicago, Illinois 60637, USA. Email: apadela@uchicago.edu
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medical interventions, health policy advocates use *fatawa* as the basis for constructing health policy options, and Islamic studies experts use *fatawa* as source texts from which to derive and prioritize principles for a global Islamic bioethics.

Two of the most influential bodies of Islamic bioethico-legal deliberation are the Organization of Islamic Conferences’ Islamic Fiqh Academy (OIC-IFA) and the Islamic Organization of Medical Sciences (IOMS). These organizations bring together medical scientists and Islamic legal scholars, are transnational in scope, and represent a plurality amongst the Islamic schools of law and theology.2 Both organizations bring together scholars of Islam and medicine for Islamic ethico-legal deliberation around bioethical challenges faced in the Muslim and non-Muslim world.3 As a result of this inclusivity, the verdicts issued by these organizations carry significant weight in medical and legal circles, as these organizations are recognized as the forefront of Muslim efforts to address ethico-legal challenges brought forth by modern technological advances.4

In this paper we review the religious verdicts and opinions around brain death offered by major Islamic councils. We then proceed to analyze the OIC-IFA and IOMS verdicts from the perspective of applied Islamic bioethics. Our discussion highlights several gaps in specificity that limit the clinical applicability of these verdicts.

**BRAIN DEATH IN THE MUSLIM MIND**

Brain death represents one area of tension between traditional values and modern medicine as traditionally clear categories of life and death have been rendered ‘fuzzy’ by machinery. Brain death challenges the epistemological, metaphysical, ethico-legal and theological understandings and principles of the inherited Islamic intellectual tradition, and has several pragmatic implications for practicing Muslims. For example multiple Islamic responsibilities ensue upon the determination of death, such as the funeral prayer, distribution of inheritance, and a required waiting period prior to remarriage by the widow. Similarly multiple ethical questions arise for Muslim patients and medical providers: What are the responsibilities of the physician to those diag-

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3 Al-Nasser, op. cit. note 1.


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*Note:* This document is a continuation of a previous one. The text continues with the analysis of religious verdicts and opinions on brain death, particularly in the context of Muslim juridical councils. The text highlights the challenges and implications of brain death within Islamic law and ethics, considering the diverse opinions and the role of religious bodies in shaping ethical guidelines for medical professionals. The paper also underscores the importance of understanding these perspectives for constructing health policy options and advancing ethical guidelines in a global Islamic bioethics framework.

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7 Haque, op. cit. note 3, p. 20.
individual remained alive as long as circulation and respiration continued, even if mechanically assisted. Yet next door in Saudi Arabia, the Senior Religious Scholars Commission allowed brain dead individuals to be organ donors thereby indirectly equating brain dead persons with cadavers. Similarly Jordan accepted brain death in 1985. During a 1985 meeting of the Islamic Organization for Medical Sciences (IOMS) Islamic scholars and medical scientists equated brain stem death with al hayat ghair al mustaqir, unstable life within Islamic law, and allowed for removal of life support but not formal declaration of death in such a state. The Islamic Fiqh Academy of the Organization of Islamic Conference (OIC-IFA) also accepted this premise in 1987 although it qualified brain death as whole brain death. Further clarifying their position in 1988 they ruled that Islamic law permitted two legal standards for the declaration of death: 1) when all vital functions of brain cease irreversibly and the brain has started to degenerate as witnessed by specialist physicians 2) when the heart and respiration stop completely and irreversibly as witnessed by physicians. This verdict explicitly equated the two states and allowed for all legal rights and duties subsequent to death, e.g. distribution of will, to ensue.

Islamic juridical councils in South Africa had conflicting opinions in 1994. The Majlis al-Shura al-Isami in Cape Town gave total jurisdiction of determining the occurrence of death to the physician community and accepted brain death as legal death. Yet the Majlis al-Ulama in Port Elizabeth ruled organ procurement from brain dead individuals to be manslaughter, thereby implicitly considering brain dead individuals as fully alive. In 1995 the United Kingdom’s Muslim Law Council held brain stem death to be sufficient to be considered an organ donor. Most recently, in an ambiguous ruling the Indonesian Council of Ulama stated that death occurred when the brain stem ceased to function and irreversible breakdown of heart and lungs began.

Considering these varied rulings, an Islamic consensus on brain death is lacking. Some equate brain death with cardiopulmonary collapse, both being death proper in Islamic law. Others hold brain death to be an in-between state between life and death, where life support need not be continued and organs may be procured, while some have rejected the concept in toto. Further confusing the issue is the lack of consensus and clarity on which neurologic criteria; whole-brain versus brain-stem, is accepted or rejected. See Table 1.

Muslim medical professional societies and medical journals on brain death

Within medical practice there exists a strong culture of professional ethics, generally defined by licensing boards, advocacy organizations like the American Medical Association (AMA), and state and local regulations. Medical professionals often turn to their professional societies and to experts’ writings in the medical literature when faced with ethical challenges in the clinical realm. At a practical level these sources inform physician practice and provide a ‘standard’ of care that outlines professional liability.

8 Ibid.
9 Sachedina, op. cit. note 3, p. 162.
12 Ibid.
16 Ibid.
When looking for an ‘Islamic’ view of brain death, medical practitioners would find that many Muslim bioethicists and professional societies support brain death.

In the medical literature, using Medline as representative of this body of knowledge, multiple papers note positive Islamic opinions on brain death. Albar notes that the OIC-IFA ruling which equated brain death with cardiac death ‘paved the way for the rapid proliferation of cadaveric transplants in Saudi Arabia, the leading Islamic country in this field’ while Hassaballah cites the same verdict as providing finality on the brain death issue. Similarly Moosa cites the OIC-IFA and declares that ‘it is clear that in large parts of the Muslim world organ transplants and brain death are accepted on religiously approved criteria.’ Al-Mousawi references both the OIC-IFA and IOMS declarations but finds the latter as the more widely-held verdict as ‘many (Islamic scholars) concede that a brain-dead person is dying but will not accept that he is dead.’ Ebrahim gives a more nuanced view of brain death within Islamic law, referencing multiple Islamic juridical councils in addition to the OIC-IFA and the IOMS but confusingly ends with the IOMS statement that when ‘a human being has reached the stage of brain-stem death he is considered to have withdrawn from life.’ Thus by perusing the extant medical literature one would conclude that Islamic law and ethics support brain death criteria.

The Islamic Medical Association of North America (IMANA) also contributes to the discussions of brain death through an Islamic lens. IMANA’s mission is to provide a forum and resource for Muslim physicians [and] to promote a greater awareness of Islamic medical ethics and values among Muslims and the community-at-large. In this vein, IMANA crafted an Islamic medical ethics primer through consultations with Islamic scholars and reviews of juridical opinions. This work has taken an authoritative position in Islamic bioethics, as it is cited throughout the medical literature, and highlighted on several medical ethics platforms. IMANA’s support of brain death is as follows:

To address brain death through an Islamic lens the OIC-IFA hosted various conferences in the 1980s. This group consists of both Islamic legal scholars and scholars of medicine assigned to the council by their respective governments or though official recommendations of council members. The council members include representatives from both Sunni and Shiite schools of Islamic law and theology. In 1988 the OIC-IFA judged that Islamic law permitted two standards for the declaration of death: 1) when all vital functions of brain cease irreversibly and the brain has started to degenerate as witnessed by specialist physicians 2) when the heart and respiration stop completely and irreversibly as witnessed by physicians.

Gaps in the OIC-IFA verdict

The OIC-IFA statement seems clear in its support for brain death yet lacks conceptual and clinical clarity thereby giving little guidance to Muslim physicians on several important questions. 1) What are, and who decides, as to the vital functions of the brain? 2) Must the irreversibility of these vital brain functions be determined to declare death? 3) How does one verify and attest to the degeneration of the brain? and 4) By declaring brain death is the physician attesting to the departure of the soul? We briefly examine each of these questions below.

**What are the vital functions of the brain vis a vis the definition of personhood in Islam?**

At the OIC-IFA deliberations medical specialists were unanimous in their support for brain-stem criteria

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18 Moosa, op. cit. note 12, p. 386.
19 Al-Mousawi et al. op. cit. note 4. p. 3217.
20 Ebrahim, op. cit. note 10, p. 196
23 IMANA, op. cit. note 4, p. 12.
24 Moosa, op. cit. note 1, p. 313; Al-Nasser, op. cit. note 1.
25 Moosa, op. cit. note 1, p. 326.
signifying the onset of death. Yet the verdict uses the caveat of *vital* functions of the brain having ceased, and does not explicitly note brain-stem or whole-brain criteria.26 If the OIC-IFA jurists meant medical scientists to determine the *vital* functions of the brain, they seem to shy away from engaging the debates around whole-brain, higher brain and brain-stem criteria and leave their verdict ambiguous. Generally, many Western philosophers find resonance with higher brain criteria by resolving that an individual who no longer possesses the ability for cognition, perception, response to the environment, volition, and similar abilities is effectively ‘dead.’ Since the construction of personhood and identity within many Western philosophical traditions place great importance upon the human intellect, some type of cognitive function can be deemed necessary for personhood.27 With empiric neuroscience locating the centers of cognition within the brain, acceptance of brain death as a concept within Western societies has been met with relative ease.

Yet, the philosophical history of Sunni Islam does not parallel that of the Reformation. Within the Sunni orthodoxy (Maturidi and ‘Ashari) the human intellect is deemed error-prone and its products are subservient to revelation in epistemology.28 Further, unlike many secular philosophies, the conception of a human being in Islam is his status as a rational animal who has a capacity to make moral choices, including choosing a path of ultimate salvation. Human autonomy to make moral choices is central to both Sunni and Shia theological traditions. How the brain relates to the mind, and the mind to the notion of the self is less well explored in the Islamic tradition deserves further reflection and is not adequately addressed by the OIC-IFA assessment.

It remains unclear if the OIC-IFA intended to side with the advocates for brain-stem criterion as was suggested by the medical experts at the proceedings. Some jurists analogized brain dead individuals to beheaded persons, thus implicating a whole-brain criterion for brain death, or at the least a misunderstanding of brain death as total brain failure.30 Such an analogy may be inappropriate as the diagnosis of brain death does not equate to total brain failure. As one expert notes ‘the current condition of a brain-dead individual is likely to be that of continued retention of integrity and function in all organ systems, apart from the central nervous system. There is also likely to be persisting function in some . . . proportion of the brain.’31 Furthermore Dr. Fred Plum, a world-renowned neurologist and world-authority on coma states that, ‘the physiological practicalities of functional brain death do not necessarily imply the immediate simultaneous death of the organ’s many minifunctions . . . only areas critical to survival and communication are tested in most standard clinical protocols.’32 Hence, conceptual clarity for specifying the *vital* functions of the brain, and some attention to the probability of residual brain or other organ function in those declared brain dead, needs to be clearly addressed by Islamic juridical councils when determining the permissibility of brain death.

**Irreversibility as a criterion to accept brain death**

The OIC-IFA’s stipulation of irreversibility is also problematic for medical scientists. Since brain death generally leads to withdrawal of life support, or at least a de-escalation of medical therapy, the natural history of brain dead individuals is wanting. While the prognosis of those declared brain dead is very poor, as no brain death individual will regain consciousness, we do know whether some brain functions may recover (some reversibility). Given the lack of clarity regarding the vital functions of the brain, the issue of potential reversibility becomes paramount. Neuroscientists note that brain stem reflexes may reappear after initial absence in brain dead individuals, and a proportion of the brain may continue to function in brain dead individuals.33 How do these scientific realities impact the Islamic ethico-legal deliberations? These scenarios and their implications are not discussed within the verdict.

Furthermore there have been rare reports of individuals ‘returning to life’ after being declared brain dead. While most scientists attribute these cases to improper initial diagnoses of brain death, these reports illustrate the difficulty of diagnosing brain death and the widespread variability in clinical criteria.34 Should these factors be

26 Ibid.
30 Moosa, op. cit. note 1, p. 319.
32 Plum, op. cit. note 30, p. 60.
considered when formulating religious rulings on the use of brain death criteria and when speaking to Muslim practitioners through religious decrees? The OIC-IFA ruling fails to provide guidance to clinicians in this controversial realm involving variable clinical criteria.

Degeneration of the brain as a condition for brain death

Lastly, the OIC-IFA ruling requires that the brain has started to degenerate as witnessed by specialist physicians. This condition brings forth further confusion. In brain death assessment protocols there are no criteria requiring verification of brain degeneration. At best a proxy measure of blood flow to the brain is deemed optional. Furthermore no protocol asks one to ‘witness’ cellular damage since ascertaining degeneration would require obtaining brain tissue for visual inspection. The rationale for why the OIC-IFA added this caveat is unclear and this requirement adds further ambiguity during clinical application of the verdict.

Brain death and the soul

In Islamic theology and metaphysics death occurs when the soul leaves the body. As the OIC-IFA declared brain death to be legal death they implicitly suggest that a brain dead individual is one in whom no soul is present. Yet no discussion was provided regarding questions that may ensue such as: How does our scientific understanding and legal reformulation of death influence the metaphysical ‘truths’ about the soul? Did the Muslim theologians intend to tie vital functions of the brain to vital functions of the soul? In other words does malfunction of the brain represent departure, or impending departure, of the soul? When the Muslim physician is asked by patients if brain death is ‘really’ death, addressing metaphysical questions about the status of the soul are critically important, even if the metaphysics is by its nature speculative.

THE IOMS AND BRAIN DEATH

In 1985, the IOMS held a multidisciplinary symposium consisting of religious jurists, medical scientists, legal experts and humanities scholars to study the end of human life. There were several important conclusions of the seminar. First they expressed the view that ‘the diagnosis and the signs of death have always been a medical matter’.35 Having given purview to the physicians in diagnosing death, they accepted physician testimony, which again was unanimous, that the death of the brain-stem is the death of the patient. However in contrast to the OIC-IFA where brain death was legal death, this group considered only some of rulings of death to be applicable to those who are brain dead, and maintained legal death to occur upon cessation of cardiopulmonary function. They state:

if a person has reached, with certainty, that state of brain-stem death, then such a person has departed from his life and some of the rulings concerning death are applicable to him. This is in analogy – although not similarity – to the juridical ruling about the person that has reached the stage of ‘movement of the slain’ (unstable life or al hayat ghair al mustaqirr). . . . disconnecting the person from artificial life support apparatus may be carried out.36

The IOMS revisited the issue in 1996 after they sent three members to participate in an international bioethics conference convened by the American Association of Bioethics and the International Association of Bioethics. These members reported back to the IOMS, this time without jurists present, that ‘no case properly diagnosed as brain + brain stem death ever regained life’ and all such purported cases ‘had an obvious and flagrant fault in making such diagnosis, omitting, misreading or violating the standard criteria.’37 Based on this report the IOMS found no reason to discard, modify, or alter the 1985 assessment.

Gaps in the IOMS verdict

The IOMS declaration offers more clarity than the OIC-IFA to the practicing clinician. They explicitly defer to medical expertise in diagnosing death and thus endorse brain-stem criteria and escape deliberations on the vital functions of the brain. They also stay clear of the philosophical and metaphysical debates which would ensue when brain death is equated to death as described above. Yet they also leave several areas uncharted and ambiguous. The IOMS statement stipulates certainty in diagnosing brain-stem death, but does not specify what level of certainty is required. Furthermore, they do not expound on practical concerns that ensue from declaring brain-stem dead individuals similar to those deemed to have unstable life in Islamic law. What interventions can or cannot be performed on these brain dead individuals, i.e. what is a clinician’s ethico-legal responsibility to the person in this state?


36 Ibid.

37 Ibid.
Brain Death in Islamic Ethico-Legal Deliberation

Certainty of medical testimony

These IOMS statements relegated ascertaining death to the medical profession and welcomed expert testimony on brain death which unanimously supported brain-stem death. They then required physicians to be certain in this diagnosis before declaring brain-stem dead individuals to be in the state of unstable life and removing life support. What level of certainty was meant by the Muslim ethicists?

The question of what level of certainty is required from specialists who determine matters of (scientific) fact is heavily debated within Islamic law and highly contextual. A higher degree of certainty may be required to overturn normative prohibitions or to establish capital punishments than for establishing defects in merchandise. Islamic jurists also recognize the impossibility of mastering all the relevant sciences for every case presented to them; that requiring definite certainty of content experts can paralyze ethico-legal deliberation. As such there are two different views on expert testimony in Islamic law. Some require experts to make determinations on dominant probability (ghalabat al zann) while others hold that certainty without doubt must be required (yaqin). The IOMS does not explicitly state whether they require dominant probability or certainty without doubt in diagnosing brain-stem death and an argument could be offered on either side. However, this author is inclined to the view that they required dominant probability. Having conceded the responsibility of ascertaining death to physicians the jurists implicitly acknowledged a dominant probability argument. They knew that medical science is probabilistic and not deterministic, thus if the medical experts determine death they can only do so with dominant probability. This acknowledgment is hinted at in their statement ‘in absence of a Qur’an or Tradition text which explicitly defines death . . . ’ By opening their statement as such, IOMS is noting that ascertaining death falls within the realm of juridical and ethical discretion (ijtihad). Since the moment of death is not determined by any univocal normative sources in Islamic law and ethics, from the perspective of Islamic bioethics determining death only requires the criteria to meet a dominant probability threshold.

Medical rights of the brain-stem dead individual

The IOMS allowed for removal of life support upon declaration of brain stem death. Yet they did not address other clinical obligations that ensue in this circumstance. For example life support may continue after brain stem death has been declared in a variety of cases. Brain-dead individuals may be used as organ donors, thus life support systems remain in place for organ procurement; pregnant women who are declared brain-dead may be maintained on life support in order to allow fetal maturation and delivery; and some Muslim and non-Muslim families may reject brain-death and ask for life support to be maintained until cardiopulmonary failure. Given that clinicians may need to continue life support and other therapies on those declared brain-dead, what are the Muslim clinician’s Islamic ethico-legal obligations? While mechanical ventilators and other such measures are seen as extraordinary parts of medical care and the IOMS allowed for their removal, what medical and non-medical treatments must be continued? Muslim authorities note that according to Islamic law feeding patients is basic care and must be continued for patients near the end-of-life; does this obligation apply to those declared brain dead? Taking a step back, is it even ethical to maintain life support for brain-stem dead individuals in order to procure organs or for any other purpose?

The IOMS assessment, although predating the OIC-IFA assessment, offers much more clarity for medical practitioners. While it has some gaps the IOMS acknowledged that ‘concerning the applicability of other rulings (regarding unstable life), the jurists preferred to defer discussing them for a future occasion.’ Yet upon reconvening in 1996 the IOMS did not bring jurists back to the table and felt no need to change their verdicts. However, clinical and ethical controversies, and the medical science around brain death, have changed considerably since the 1980s. (See Table 2). It behooves future Islamic juridical councils to reconsider prior rulings in order to clarify the responsibilities of medical practitioners to those declared brain dead and to revisit the ethico-legal arguments for and against brain death.

Moosa, op. cit. note 1, pp. 316–326.
Al-Awadhi, op. cit. note 38.

Al-Awadhi, op. cit. note 38.
Early rulings on brain death. Is brain death equal to need both updating and deepening with regard to the Islamic tradition, the debates within Muslim bioethics have been transplanted into Muslim contexts and developments and ethical controversies in the Western world. As these definitions have been transplanted into Muslim contexts and the Islamic tradition, the debates within Muslim bioethics need both updating and deepening with regard to the early rulings on brain death. Is brain death equal to cardiopulmonary (traditional) death or is brain death just an intermediate state between life and death? Which formulation, whole-brain or brain-stem death, is consonant with Islamic bioethics? Finally what are the clinical responsibilities of physicians to patients in these states? A renewed discourse around brain death ought to take place in a multidisciplinary fashion and with greater attention to the numerous complexities in order to meet the needs of Islamic bioethics consumers.

### Clinical criteria of whole-brain death
- Irreversible loss of:
  - Wakefulness and awareness (i.e., coma)
  - Motor responses to pain in all extremities
  - Brain stem reflexes
  - Spontaneous capacity to breathe

### Medical arguments for equating brain death with death in human beings
- Irreversible loss of:
  - the capacity for consciousness
  - the capacity to breathe
  - the 'essence' of humans
  - 'personhood'
  - the integration of body functions as a living human being
  - The certainty of cardiac arrest within hours or days

Medical care is futile

### Medical arguments against equating brain death with death in human beings
- Brain-dead patients maintain residual vegetative functions; e.g., growth, reproduction, pregnancy, childbirth etc. that are mediated or coordinated by the brain or the brainstem
- Cerebral functions can not be tested by clinical examination, because the tracts of passage to and from the cerebrum thought the brainstem may be destroyed or nonfunctional
- Clinical assessment of internal awareness is limited in patients who may otherwise lack the motor function to show their awareness
- 'Brain-dead' patients have stereotyped complex movements, presumably no or minimal structural damage to critical brain structures such as the brain stem in organ declared ‘brain dead’

### CONCLUSION

Islamic juridical deliberations around brain death largely took place over 20 years ago in response to medical developments and ethical controversies in the Western world. The Islamic experts who assessed brain death based their deliberations upon scientific data at the time and largely borrowed the clinical and conceptual definitions of brain death from medical experts in the West. As these definitions have been transplanted into Muslim contexts and the Islamic tradition, the debates within Muslim bioethics need both updating and deepening with regard to the early rulings on brain death. Is brain death equal to cardiopulmonary (traditional) death or is brain death just an intermediate state between life and death? Which formulation, whole-brain or brain-stem death, is consonant with Islamic bioethics? Finally what are the clinical responsibilities of physicians to patients in these states? A renewed discourse around brain death ought to take place in a multidisciplinary fashion and with greater attention to the numerous complexities in order to meet the needs of Islamic bioethics consumers.

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**Aasim I. Padela** is an Assistant Professor of Medicine in the Sections of Emergency and General Internal Medicine at the University of Chicago. He directs the Initiative on Islam and Medicine within the Program on Medicine and Religion at the University. He holds degrees in Biomedical Engineering and Classical Arabic and Literature from the University of Rochester, attended medical school at Weill Cornell Medical College, and completed his emergency medicine residency at the University of Rochester. He was a Robert Wood Johnson Foundation Clinical Scholar at the University of Michigan from 2008–2011 researching healthcare inequities and cultural barriers to care for American Muslim patient populations. He recently completed a term as a visiting fellow at the Oxford Centre for Islamic Studies where he focused on projects related to theoretical and applied Islamic bioethics.

**Ahsan Arozullah** is currently a Medical Director in Patient Safety and Pharmacovigilance at Astellas Pharma Global Development. Before joining Astellas he was an Associate Professor in the Sections of General Internal Medicine and Health Promotion Research at the University of Illinois at Chicago with research interests including the impact of low health literacy and social support on racial/ethnic disparities in healthcare utilization. He continues to mentor fellows and junior faculty as a clinical associate professor at UIC. He is a senior student member and member of the Board of Directors of Darul Qasim, an institute of higher Islamic learning. He also serves as a volunteer physician and a member of the advisory board for IMAN [Inner-city Muslim Action Network] Health Clinic Initiative in Chicago Lawn neighborhood. Dr. Arozullah graduated from Northwestern University Medical School and completed his Internal Medicine residency and Chief Residency at Northwestern. Following residency training he completed a General Internal Medicine Fellowship and a Master’s in Public Health at Harvard University with advanced training in clinical epidemiology and health services research.

**Ebrahim Moosa** is Professor of Islamic Studies in Duke University’s Department of Religion. His interests span both classical and modern Islamic thought with a focus in Islamic law, ethics and theology. He was named a Carnegie Scholar in 2005 to pursue research on madrasas, Islamic seminaries, of South Asia.