Supplementary Online Content


**eAppendix. Initial and Follow-up Surveys**

This supplementary material has been provided by the authors to give readers additional information about their work.
1. INITIAL SURVEY ATTENDING

Global Surgery Survey
Alliance for Global Clinical Training (AGCT) and Muhimbili University of Health and Allied Sciences (MUHAS)

Objective
To assess the surgical learning environment, tangible and intangible needs of the facility, and barriers to optimal surgical outcomes at Muhimbili University of Health and Allied Sciences (MUHAS) in Dar Es Salaam, Tanzania.

Section A: Demographics
Age
Gender □ Male □ Female
Surgical or Medical Specialty
Years since Residency

Section B: Human Resources
In the average operating theatre, please indicate the usual number of healthcare providers present:

Surgeons
Anesthesiologists / nurse anesthetists
Non-surgeon physicians operating
Surgery technician providing assistance
Anesthesia technician providing assistance

Section C: Questionnaire
Please check the box more indicative of your perspective, followed by an explanation in an open comment format.

1. I have an established professional relationship with my residents.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
   If you noted “Strongly Disagree” or “Disagree”, please indicate suggestions for improvement:
2. My residents have the resources they need to continue to develop as surgeons.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
   Please explain:

3. The partnership with the Alliance for Global Clinical Training (AGCT) has the potential to positively impact my resident’s ability to grow and develop as surgeons.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
   Please explain:

4. My patients sometimes have disappointing outcomes with medical and surgical complications due to their inability to seek medical care in a timely fashion.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
   Please explain:

5. My patients sometimes have disappointing outcomes with surgical and medical complications due to problems in accessing the hospital basic services. This could include radiology, laboratory or blood banking services.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
   Please explain:

6. My patients sometimes have disappointing outcomes with surgical or medical complications due to problems in accessing subspecialty care. This could include specialty surgery (such as neurosurgery, orthopedics or otolaryngology) or specialty medicine (such as critical care, infectious disease or cardiology) services.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
   Please explain:

7. My patients sometimes have disappointing outcomes with surgical and medical complications due to their inability to pay for care that would otherwise be available.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
   Please explain:

8. There are presently issues within the hospital that, if corrected, could improve patient outcomes.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
   Please explain:

9. There are mechanisms within the hospital that allow me to raise these issues without pressure or fear of retaliation.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
   Please explain:
For the following survey questions, please circle your response:
SD = strongly disagree, D = disagree, N = neutral, A = Agree, SA = Strongly Agree

10. Faculty spends sufficient time teaching in the operating theatre: SD D N A SA
11. Faculty spends sufficient time teaching in the clinical ward: SD D N A SA
12. The residents have increasing responsibility in the operating theatre: SD D N A SA
13. Senior surgeons allow residents to operate when appropriate. SD D N A SA
14. I am confident in my resident’s abilities to operate alone: SD D N A SA
15. My residents need more instruction in the operating room: SD D N A SA
16. My residents are overwhelmed by the number of cases: SD D N A SA
17. Due to the amount of work, my residents cannot read like they should: SD D N A SA
18. I trust the residents: SD D N A SA
19. The residents are respected by the faculty: SD D N A SA
20. The atmosphere in the operating theatre encourages learning: SD D N A SA
21. My hospital’s top priority is patient well being and recovery: SD D N A SA
22. My hospital values physician-patient relationships: SD D N A SA
23. My residents need to do more operative cases: SD D N A SA
24. I need to do more operative cases: SD D N A SA

The following are open ended responses:

25. What do you hope to gain personally from the establishment of a partnership between MUHAS and AGCT?

26. What do you see at the potential benefit on a hospital level to the partnership?

27. What would be the ideal role of the members of the AGCT to take while at MUHAS?

28. What might be some problems or difficulties you see with hosting American surgeons at MUHAS?
2. FOLLOW-UP SURVEY, ATTENDING

Faculty Survey
Alliance for Global Clinical Training (AGCT) and Muhimbili University of Health and Allied Sciences (MUHAS)/Muhimbili National Hospital (MNH)

Objective
Determine the impact of the first year of cooperation between MUHAS/MNH and the Alliance for Global Clinical Training.

Section A: Demographics
Age
Gender □ Male □ Female
Surgical or Medical Specialty
Years since Residency

Section B: Questionnaire
Please check the box more indicative of your perspective, followed by an explanation in an open comment format.

29. The partnership with the Alliance for Global Clinical Training (AGCT) positively impacted my resident’s ability to grow and develop as surgeons.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree

30. I have established a relationship with at least one visiting American surgeon or resident.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree

31. The partnership with the AGCT has improved patient care.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree

32. Visiting American surgeons or residents have taken cases that I would have otherwise done or scrubbed in on.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree

33. I have an established professional relationship with my residents.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
34. My residents have the resources they need to continue to develop as surgeons.
   □ Strongly Disagree         □ Disagree          □ Neutral         □ Agree          □ Strongly Agree

35. My patients sometimes have disappointing outcomes due to: (please rank these in order of importance from 1-6)
   ___ Patients and their families lack money
   ___ Patients and their families lack education or knowledge
   ___ Patients and their families prefer traditional healers
   ___ Referral to MNH is delayed or patients are misdiagnosed at a peripheral hospital
   ___ There is limited availability of medical equipment / machines are broken
   ___ No prompt response to consultation with specialty services (Cardiology, Neurosurgery etc.)

For the following survey questions, please circle your response:
   SD = strongly disagree, D = disagree, N = neutral, A = Agree, SA = Strongly Agree

36. Faculty spends sufficient time teaching in the operating theatre: SD D N A SA
37. Faculty spends sufficient time teaching in the clinical ward: SD D N A SA
38. I am confident in my resident’s abilities to operate alone: SD D N A SA
39. My residents need more instruction in the operating room: SD D N A SA
40. The residents are respected by the faculty: SD D N A SA
41. The atmosphere in the operating theatre encourages learning: SD D N A SA
42. My residents need to do more operative cases: SD D N A SA
43. I need to do more operative cases: SD D N A SA

The following are open ended responses:

44. What has been your experience working with the AGCT?

45. Have there been hospital level benefits to the AGCT MUHAS/MNH partnership?

46. What would be the ideal role of the members of the AGCT to take while at MUHAS/MNH?

47. What have been the challenges in working with the American surgeons and residents representing the AGCT at MUHAS/MNH?
3. INITIAL SURVEY, RESIDENT

Global Surgery Resident Survey
Alliance for Global Clinical Training (AGCT) and Muhimbili University of Health and Allied Sciences (MUHAS)

Objective
To assess the surgical learning environment, tangible and intangible needs of the facility, and barriers to optimal surgical outcomes at Muhimbili University of Health and Allied Sciences (MUHAS) in Dar Es Salaam, Tanzania.

Section A: Demographics
Age
Gender □ Male □ Female
Post-graduate year (post-MD) __________
Specialty ____________________

Section B: Human Resources
In the average operating theatre, please indicate the usual number of healthcare providers present:
Surgeons __________
Anesthesiologists / nurse anesthetists __________
Non-surgeon physicians operating __________
Surgery technician providing assistance __________
Anesthesia technician providing assistance __________

Section C: Questionnaire
Please check the box more indicative of your perspective, followed by an explanation in an open comment format.

1. I have an established professional relationship with my mentors.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
   If you noted “Strongly Disagree” or “Disagree”, please indicate suggestions for improvement:

2. I feel supported in my education. At this point I have the resources I need to continue to develop as a surgeon.
3. The partnership with the Alliance for Global clinical Training (AGCT) has the potential to positively impact my ability to grow and develop as a surgeon.
   □ Strongly Disagree  □ Disagree  □ Neutral  □ Agree  □ Strongly Agree
   Please explain:

4. My patients sometimes have disappointing outcomes with surgical and medical complications due to their inability to seek medical care in a timely fashion.
   □ Strongly Disagree  □ Disagree  □ Neutral  □ Agree  □ Strongly Agree
   Please explain:

5. My patients sometimes have disappointing outcomes with surgical and medical complications due to problems in accessing the hospital basic services. This could include radiology, laboratory or blood banking services.
   □ Strongly Disagree  □ Disagree  □ Neutral  □ Agree  □ Strongly Agree
   Please explain:

6. My patients sometimes have disappointing outcomes with surgical or medical complications due to problems in accessing subspecialty care. This could include specialty surgery (such as neurosurgery, orthopedics or otolaryngology) or specialty medicine (such as critical care, infectious disease or cardiology) services.
   □ Strongly Disagree  □ Disagree  □ Neutral  □ Agree  □ Strongly Agree
   Please explain:

7. My patients sometimes have disappointing outcomes with surgical and medical complications due to their inability to pay for care that would otherwise be available.
   □ Strongly Disagree  □ Disagree  □ Neutral  □ Agree  □ Strongly Agree
   Please explain:

8. There are presently issues within the hospital that, if corrected, could improve patient outcomes.
   □ Strongly Disagree  □ Disagree  □ Neutral  □ Agree  □ Strongly Agree
   Please explain:

9. There are mechanisms within the hospital that allow me to raise these issues without pressure or fear of retaliation.
   □ Strongly Disagree  □ Disagree  □ Neutral  □ Agree  □ Strongly Agree
   Please explain:

For the following survey questions, please circle your response:
SD = Strongly Disagree   D = Disagree   N = Neutral   A = Agree   SA = Strongly Agree

10. Faculty spends sufficient time teaching in the operating theatre:   SD D N A SA
11. Faculty spends sufficient time teaching in the clinical ward:   SD D N A SA
12. I feel I have increasing responsibility in the operating theatre:   SD D N A SA
13. Senior surgeons allow me to operate when appropriate:   SD D N A SA
15. I would like more instruction in the operating room:   SD D N A SA
16. I feel overwhelmed by the number of cases:   SD D N A SA
17. I have too much work and cannot read as much as I would like:   SD D N A SA
18. I trust the faculty:   SD D N A SA
19. I feel respected by the faculty:   SD D N A SA
20. The atmosphere in the operating theatre encourages learning:   SD D N A SA
21. My hospital’s top priority is patient well-being and recovery:   SD D N A SA
22. I need more operative cases:   SD D N A SA
23. My hospital values physician-patient relationships:   SD D N A SA

The following are open ended responses:

24. What do you hope to gain personally from the establishment of a partnership between MUHAS and AGCT?

25. What do you see at the potential benefit on a hospital level to the partnership?

26. What would be the ideal role of the members of the AGCT to take while at MUHAS?

27. What might be some problems or difficulties you see with hosting American surgeons at MUHAS?
4. FOLLOW-UP SURVEY, RESIDENT

Resident Survey
Alliance for Global Clinical Training (AGCT) and Muhimbili University of Health and Allied Sciences (MUHAS)/Muhimbili National Hospital (MNH)

Objective
Determine the impact of the first year of cooperation between MUHAS/MNH and the Alliance for Global Clinical Training.

Section A: Demographics
Age
Gender □ Male □ Female
Post-graduate year (post-MD) __________

Section B: Questionnaire
Please check the box more indicative of your perspective, followed by an explanation in an open comment format.

28. The partnership with the Alliance for Global clinical Training (AGCT) has positively impacted my ability to grow and develop as a surgeon.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree

29. The partnership with AGCT has improved patient care.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree

30. Visiting American surgeon or residents take operations that I otherwise would have scrubbed in on.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree

31. Visiting American Surgeons or residents have effective mentored me.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree

32. I have an established professional relationship with my mentors.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree

33. I have the resources I need to continue to develop as a surgeon.
34. There are presently issues within the hospital that, if corrected, could improve patient outcomes.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree

35. There are mechanisms within the hospital that allow me to raise these issues without pressure or fear of retaliation.
   □ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree

36. My patients sometimes have disappointing outcomes due to: (please rank these in order of importance, from 1-6)
   ___ Patients and their families lack money
   ___ Patients and their families lack education or knowledge
   ___ Patients and their families prefer traditional healers
   ___ Referral to MNH is delayed or patients are misdiagnosed at a peripheral hospital
   ___ There is limited availability of medical equipment / machines are broken
   ___ No prompt response to consultation with specialty services (Cardiology, Neurosurgery etc.)

For the following survey questions, please circle your response:

SD = Strongly Disagree  D = Disagree  N = Neutral  A = Agree  SA = Strongly Agree

37. Faculty spends sufficient time teaching in the operating theatre:  SD  D  N  A  SA
38. Faculty spends sufficient time teaching in the clinical ward:  SD  D  N  A  SA
39. I feel I have increasing responsibility in the operating theatre:  SD  D  N  A  SA
40. Senior surgeons allow me to operate when appropriate:  SD  D  N  A  SA
41. I feel confident in my abilities to operate alone:  SD  D  N  A  SA
42. I would like more instruction in the operating room:  SD  D  N  A  SA
43. I trust the faculty:  SD  D  N  A  SA
44. I feel respected by the faculty:  SD  D  N  A  SA
45. The atmosphere in the operating theatre encourages learning:  SD  D  N  A  SA
46. I need more operative cases:  SD  D  N  A  SA

The following are open ended responses:
47. What has been your experience working with the AGCT?

48. Have you seen personal benefits to the partnership between the AGCT and MUHAS/MNH?

49. What have been the challenges in the partnership between the AGCT and MUHAS/MNH?

50. What could the AGCT and the American surgeons / residents do to improve the cooperation between the AGCT and MUHAS/MNH?