Special On-Site Episode: Global Surgery on a Ship

Guest: Dr. Mark Shrime, international CMO of Mercy Ships
Host: Dr. Josh Wiedermann

Question: Where are we right now?

Dr. Shrime:

- ☐ We are sitting on the Global Mercy in Dakar, the capital of Senegal. It is one of two hospital ships run by the organization **Mercy Ships**, where I've been working for about 15 years now.
- ☐ The ship spends 10 months at a time in countries along the West African coast providing specialized surgical care (seven different specialties), including an ENT-head and neck-maxillofacial joint specialty.

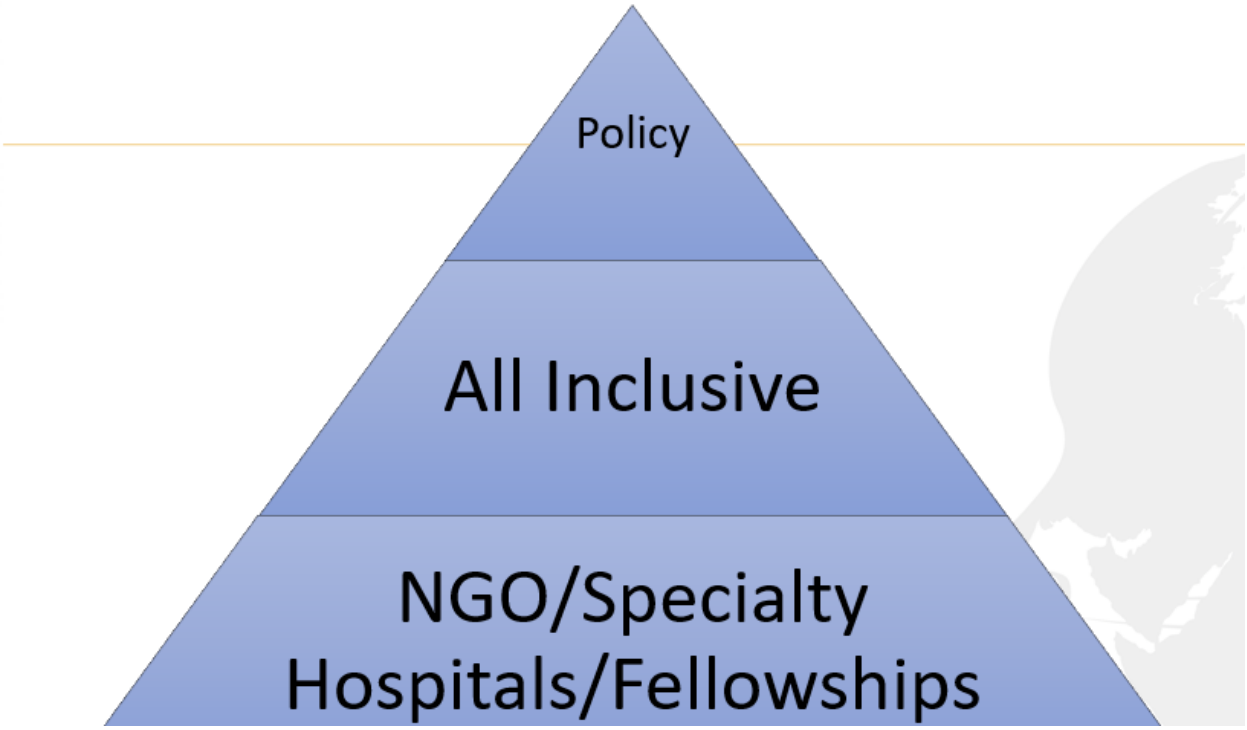
Question: What else is on the ship and what is its purpose?

Dr. Shrime:

- ☐ The ship is 12 decks tall; the hospital takes up 2 decks, there are 6 ORs in the hospital.
- ☐ There are 102 patient beds, there is a 4 bed ICU, recovery room, pre-operative care area, rehab, PT, outpatient clinic.

Dr. Wiedermann:

- ☐ We have included a photo of the pyramid in which ways the world community can contribute towards issues with access in quality surgery. Mercy Ships seems to be somewhat in its own category, bringing a high-income country's point of view on quality of care to an area of limited access.
    - ☐ Starting at the top, the least amount of people with the highest amount of impact are people who write policy at the international or national level.
    - ☐ The bottom of the pyramid is the highest amount of people in short-term surgical trips that can make meaningful impacts in short periods of time.
    - ☐ In the middle are fellowships and NGOs (non-government organizations).



Question: How do you feel like this as an entity is providing that access and or quality of care compared to other ways?

Dr. Shrime:

- ☐ The short-term surgical model is potentially more harmful than helpful. There is evidence on the outcomes of short-term surgical trips having potential economic impact on the local surgeons' market share. If there are known trips coming, local patients will wait and not see care at their institutions. There are changes that have to be made on the policy level to bring surgery into the conversation.
- ☐ Mercy Ships and some of these NGOs sit in an interspace between building a hospital and planting in one place versus short-term trips that fly in and fly out.
    - ☐ Our model is a five-year engagement with countries. We are invited into a country to start that engagement; by invitation only, we bring a ship in for 10 months in the middle of those five years.
    - ☐ Across those years, we are working in the healthcare education sector, digging into post-graduate training as a part of the ship's visit to that country in fellowship or residency rotations.
    - ☐ We bring in a tertiary care level / referral type hospital, and by not being tied to the electricity or water grid of that country, we can do more complex cases that

may not be done otherwise, not because local staff cannot do them, but because they are limited by local infrastructure.

Dr. Wiedermann:

- ☐ We have talked about the limitations of outcomes analysis. Follow up is limited because many patients cannot afford to come back or at all in the first place.

Question: How are you tackling follow up when the ship is not physically here for a year at a time?

Dr. Shrime:

- ☐ The global surgery conversation has been limited by long term outcomes. There is a fatalistic feeling that long term outcomes cannot be obtained, but this is not true. We have a *paper (1)* out in which we followed outpatients for a year, which was a significant effort.
- ☐ We pay for patients' transportation from the nearest big city to the ship and back. If a patient is spending 6 weeks with us, that is 6 weeks they are spending not working. Those sorts of indirect costs are not covered by us, but all the direct costs patients face for the surgery or the follow up care are covered by us.
- ☐ It takes dedicated people and money to happen, but we are interested in delivering the highest quality surgery that we can, which means learning from our surgeries and our outcomes.
- ☐ We take a holistic view; complication and success rates are important for quality assurance in the hospital, but surgical disease affects many domains in a patient's life – school, work, finances, ability to engage with their community – these are all things we have started following to broaden our impact evaluation with a holistic view.

Question: We have discussed disability-adjusted life years (DALYs) as a metric on which diseases we should try to tackle as a global surgery community. How can we use DALYs to monitor our impact on a community? Can you expand on that?

Dr. Shrime:

- ☐ Disability-adjusted life years, and their counterpart, quality-adjusted life years (QALYs), are good for translating our output into outcomes. We report the number of surgeries we did – we did 2,000 surgeries this last year, but what did those surgeries accomplish? There is a holistic way to evaluate that using DALYs.
- ☐ It is important to be holistic because what you choose as your metric can have great influence. DALYs and QALYs are a good metric but we must be aware of their

limitations. We should not use the number of procedures as our only metric. It is about finding the balance and holistic approach.

Question: One of the biggest impacts in the global surgery world is the *Lancet commission's 2015 release of data (2)* translating issues of access to surgery into economic terms and showing the financial impact globally from this missed opportunity and unaddressed disease. Are there efforts within this community to try to understand how patients are gaining their financial strength back after being in a ship like this and how they can contribute back to their community after their surgery?

Dr. Shrime:

- ☐ Yes, and not enough; Even if we pay for transportation and care (which we do), patients still have costs associated with receiving care but even a small amount of money can be catastrophic.
    - ☐ We looked at whether after the surgery (we looked specifically in our head and neck service for this), despite these hits, do their incomes go up for the following year? We found that they went up, which is an indication (not a proof) that perhaps because their maxillofacial tumors have been taken out or their clefts have been corrected, they are able to re-engage as economically productive members of their society.
- ☐ This is not true of every case. There is great work by *John Scott in Michigan (3, 4, 5, 6, 7)* looking at patients in the US who face catastrophic expenses for trauma, and their incomes continue to go down.
- ☐ It is likely specialty- and procedure-specific and dependent on your starting point with the impact of their issue on daily living and ability to be economically productive and ending point–resolution of disfigurement vs. prolonged rehab and recovery associated with truma.

- ☐ The second answer is in our measurements of disability pre- and post-op, we look at the *WHO disability assessment schedule (8)* with six domains, pain, mobility, etc. One of the domains it asks about is community engagement.
    - ☐ Overall, people's disability goes down after surgery. Subanalysis of domains showed that community engagement improved the greatest for the maxillofacial patients.

Dr. Wiedermann: Getting re-engaged with your community would give that patient access to decision making. Poverty is not just a financial aspect; it is also an ability to make life decisions. A lot of patients that have disfiguring facial anomalies cannot make good life decisions because

they are not given those options, so maybe having access to community then allows them to find a job and advance their life positively.

Dr. Shrime: That is the hope, to see improvement in community engagement and improvement in outcomes, but we have more to do to see if that is true.

Dr. Wiedermann: I would like to give you the opportunity for any other things you would like to relay to our audience that is trying to learn about global surgery and how they can get integrated into it. You have had a very interesting path towards where you are right now, which has been discussed in your *book (9)*.

Question: Anything else you would like to pass on?

Dr. Shrime:

- ☐ Be very thoughtful about how you get involved in Global Surgery and with whom. The reason the one-week mission trip has persisted for so long is because it is convenient for us in high income countries.
    - ☐ Try to find institutions who are part of the community, or who have longer-term engagement.
- ☐ The fundamental thing that we are all working towards is a reduction in the inequity of access to care. Global surgery and global health efforts attempt to right inequities. Those inequities exist in our backyard as well, whatever city you are in.
- ☐ For students or residents who want to make global surgery a bigger part of their lives, in your training, it is imperative to be the best medical student or best resident you can be.
- ☐ There is still a little bit of an impression that people who want to do global health don't really want to be surgeons – they want to do something else, so they are the "throwaway students or residents" that faculty do not want to invest in. Be the best student and/or resident you can be to mitigate against that impression.
    - ☐ When you are in these countries, you are thrown into conditions and surgeries that you have never seen before. You need to know how to operate to deliver the best care that you can to these patients.

Organizations

Mercy Ships
https://www.mercyships.org

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