

# Integration of Surgical Residency Training With US Military Humanitarian Missions

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**OBJECTIVE:** To describe how the US Navy integrates surgical resident training during hospital ship-based humanitarian activities and discuss the potential operative and educational benefits during these missions.

**DESIGN:** Retrospective review of predeployment surgical plans, operative case logs, and after-action reports from United States Naval Ship (USNS) Mercy humanitarian deployments from 2006 to 2012.

**SETTING:** The USNS Mercy hospital ship.

**PARTICIPANTS:** We enrolled 24 surgical residents from different surgical specialties including general surgery, obstetrics and gynecology, urology, otolaryngology, and ophthalmology.

**RESULTS:** During 4 planned deployments (2006-2012), 2887 surgical procedures were performed during 20 humanitarian missions conducted by the USNS Mercy in 9 different Southeast Asian countries. Of all the general surgery eligible procedures performed, 1483 (79%) were defined categories under the current general surgery Accreditation Council for Graduate Medical Education guidelines, including abdominal (31%); skin, soft tissue, and breast (21%); ear, nose, and throat (20.5%); plastic surgery (15.5%); and pediatric (12%) cases. The number of surgical cases completed by each resident ranged from 30 to 67 cases over a period of 4 to 6 weeks during the overseas humanitarian rotation.

**CONCLUSIONS:** The US Navy's humanitarian experience provides a unique educational opportunity for young military surgeons to experience various global health systems, diverse cultures, and complex logistical planning

without sacrificing the breadth and depth of surgical training. This model may provide a framework to develop future international electives for other general surgery training programs. (J Surg Ed 72:898-903. © 2015 Published by Elsevier Inc. on behalf of the Association of Program Directors in Surgery)

**KEY WORDS:** humanitarian assistance, hospital ship, USNS Mercy, navy, surgical volunteerism, surgical residency

**COMPETENCIES:** Patient Care, Medical Knowledge, Interpersonal and Communication Skills, Systems-Based Practice

## INTRODUCTION

It is estimated that up to one-third to half of the world's population does not have access to basic surgical care and that 11% of the global burden of disease can be treated with surgery.<sup>1</sup> The US government has addressed this need for overseas medical assistance and has made a commitment to improving global health care.<sup>2</sup> The US Military has played a major role implementing this goal with more than 200 international missions yearly.<sup>3</sup> The US Navy is a branch of the military that contributes to humanitarian training and assistance by preplanned deployments called Humanitarian and Civic Assistance (HCA) missions using 2 hospital ships: the United States Naval Ship (USNS) Comfort and the USNS Mercy.

These HCA missions are valuable opportunities for surgical trainees to participate in humanitarian missions and experience different health care systems in various countries. The primary goal of this study was to describe the educational structure, operative experience, and mentorship during these surgical humanitarian missions. Further, we discuss how the US Navy medicine incorporates a structured curriculum during humanitarian missions not traditionally taught in surgical resident training. The

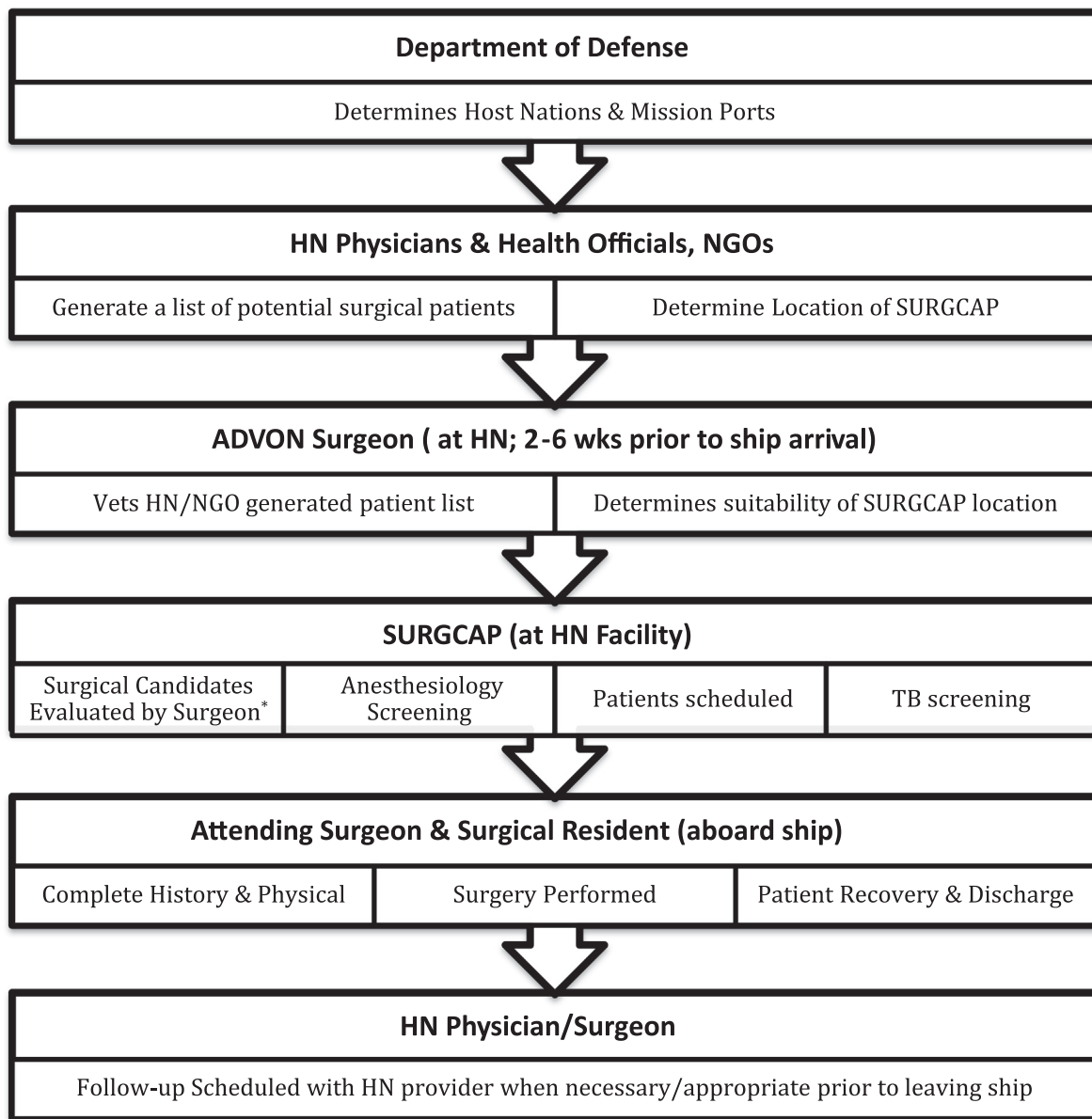
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curriculum includes education in medical logistics, cultural diversity, and global health care. Lastly, we discuss some of the challenges surgical residents encounter in these international rotations.

## METHODS

The US Navy regularly deploys the USNS Mercy hospital ship for HCA missions in Southeast Asia.<sup>4-7</sup> The USNS

Mercy provides full hospital support for disaster relief and humanitarian operations worldwide, and since 2006, this ship has been deployed for planned biennial HCA missions.<sup>5-7</sup> The hospital ship has a 1000-patient bed capability, with 80 of these being in the intensive care unit, 20 in the postanesthesia care unit, 400 in intermediate care, 500 in minimal care, and 11 in operating rooms. During a fully operational mission, the entire ship's medical staff and support personnel range from 950 to 1100 individuals.<sup>4-7</sup> The Figure is a schematic detailing the steps undertaken to



\*Evaluated by operating surgeon and surgical resident (if present).

HN, host nation; NGO, Nongovernmental Organization; ADVON, Advanced Echelon; SURGCAP, Surgical Civic Action Project.

**FIGURE.** Schematic detailing each step from mission planning to patient discharge.

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