

# NAVAL HEALTH RESEARCH CENTER

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## *DOCUMENTING PATIENT ENCOUNTERS DURING A HUMANITARIAN ASSISTANCE MISSION TO GUATEMALA*

*E. D. Gauker*

*P. J. Konoske*

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NAVAL HEALTH RESEARCH CENTER  
P O BOX 85122  
SAN DIEGO, CA 92186-5122

BUREAU OF MEDICINE AND SURGERY (MED-02)  
2300 E ST. NW  
WASHINGTON, DC 20372-5300



## **Documenting Patient Encounters During a Humanitarian Assistance Mission to Guatemala**

Eleanor D. Gauker, M.A.

Paula J. Konoske, Ph.D.

Modeling and Simulation Group  
Naval Health Research Center  
P.O. Box 85122  
San Diego, CA 92186-5122

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## Summary

### Problem

Military Operations Other Than War (OOTW) such as peacekeeping, disaster relief, and humanitarian assistance are basic to two of the foundations of US military strategy: forward presence and crisis response. The provision of Health Service Support is a major factor in OOTW, and Navy medical units may need to make rapid deployments to varied geographic areas where the host country's medical infrastructure may be in chaos. It is important to consider OOTW as well as war when planners and logisticians strive to maintain operational readiness.

### Objective

The goals of this project were to gather medical treatment data for the development of the Naval Health Research Center (NHRC) OOTW database, and to create an improved patient encounter form with a reasonably simple format that would be convenient for providers.

### Approach

For the present study, researchers adapted a previously developed patient encounter form to fit the Guatemalan OOTW mission. For example, provider specialties included ophthalmology, optometry, pediatrics, and dermatology. The form, therefore, included conditions, treatments, and medications specific to these fields, as well as those that might be encountered in the Guatemalan climate and geography. In Guatemala, healthcare providers used the revised form to collect data for more than 75% of all patient encounters. The completed forms were returned to NHRC, where researchers created an electronic database and analyzed the data. Navy physicians who had accompanied HELPS, International were available for consultation in the event that questions arose during the analysis.

### Results

Physicians documented 857 patient encounters. About 57% of patients were female. More than one third of the patient population was aged 20 years or younger, with roughly 21% of patients between ages 1 and 11 years. Approximately 27% of patients were aged 21-40 years, and adults aged 41-60 years accounted for 22% of patients. Ten percent of patients were aged 60 years or older. The youngest patient was 1 day old, while the oldest was aged 97 years. Doctors recorded 1476 diagnoses. The most frequent diagnoses were refractory disorders, such as presbyopia, myopia, hyperopia, and astigmatism; eye disorders classified as nonspecific pain, swelling, redness, or discharge; and worms.

Patients were most often treated with prescription medication, followed by counseling. The most commonly prescribed medications were vitamins, antiparasitic, and anti-inflammatory medications.

## Conclusion

Further research into improved data collection methods is indicated. The forced-choice, paper-and-pencil format has proved to be preferable to the free-text form. However, any paper data collection form will add weight and volume to the blocks of equipment that are transported to the operation. Therefore, NHRC plans to create and test data collection methods where providers in the field use hand-held computers to record data that can then be electronically transmitted to NHRC. It is predicted/expected that this method will reduce errors and save time and may eventually replace paper-and-pencil forms completely.

NHRC will continue to expand its base of patient encounter data for OOTW. Researchers will employ several methods to accomplish this expansion. Cooperative efforts, such as the Guatemala mission described in this paper, will be carried out to collect original data. In addition, established sources of data for disease and injury rates, such as the Center for Disease Control, the World Health Organization, the Red Cross, and other non-government organizations will continue to be explored. The information about OOTW will be incorporated into the NHRC Estimating Supplies Program model, thereby increasing the depth and scope of that planning tool.

## Introduction

Operations Other Than War (OOTW) utilize US military capabilities across a wide range of operational scenarios short of war. OOTW differ from wartime operations in important ways. During war, the goal is to win, to achieve national objectives, and to conclude hostilities with as few casualties as possible. OOTW, however, focus on deterring war, resolving conflict, promoting peace, and supporting civil authorities. Figure 1 depicts the range of military operations.

| <b>RANGE OF MILITARY OPERATIONS</b> |                  |   |  |
|-------------------------------------|------------------|---|--|
| <b>Military Operations</b>          |                  | <b>General US Goals</b>                                 | <b>Representative Examples</b>   |
| <b>COMBAT</b>                       | <b>War</b>       | <b>Fight &amp; Win</b>                                  | <u>Large Scale Combat Operations</u><br><u>Attack / Defend / Blockade</u>  |
|                                     | <b>NONCOMBAT</b> | <b>Deter War &amp; Resolve Conflict</b>                 | Peace Enforcement<br>Counterterrorism<br>Show of Force/Raid/Strike<br>Peacekeeping/NEO<br>Nation Assistance<br>Counterinsurgency |
|                                     |                  | <b>Promote Peace &amp; Support US Civil Authorities</b> | Freedom of Navigation<br>Counterdrug<br>Humanitarian Assistance<br>Protection of Shipping<br>US Civil Support                    |

Figure 1. Range of military operations.

Since the end of the Cold War, the United States has taken part in a wide variety of OOTW, and it is expected that our military participation will increase in the future.<sup>1</sup> It is important to consider OOTW as well as war when planners and logisticians strive to maintain operational readiness. Military operations such as peacekeeping, disaster relief, and humanitarian assistance are basic to two foundations of US military strategy: forward presence and crisis response.<sup>2</sup> The provision of Health Service Support (HSS) is a major factor in these operations, and Navy medical units may need to make rapid deployments to varied geographic areas where the host country's medical infrastructure may be in chaos. Medical personnel must be prepared to treat endemic diseases, both in civilians and the military, and must be ready to set up in primitive, unfamiliar conditions. The education and training levels of HSS professionals and technicians are critical to the success of assistance operations.

Training methods for HSS include classroom instruction, simulations, and exercises. Each of these provides preparation for some aspect of operational medicine. The

classroom provides the medical knowledge that underlies the whole system. Simulations give practice for medical techniques, and exercises offer the experience of working in austere surroundings. However, none of these give real-life, real-time experience working in a host nation with the local population.

In late 1999, the Naval Medical Center San Diego (NMCS D) approved a proposal to send NMCS D medical personnel on a mission with a non-government organization (NGO) (A. Morton, NMCS D, written communication, October 1999). By so doing, NMCS D created a unique opportunity for its military personnel to receive real-world training not available through traditional training methods.

The proposal describes HELPS, International (HELPS) as an NGO that has been organizing surgical missions into Central America since 1982. Approximately 50 people participate in each mission. The medical teams are composed of physicians, nurses, and ancillary staff. Historically, participants have been self-funded volunteers. However, for the mission of February 5-16, 2000, 11 of the team members were medical staff from NMCS D. The Navy contingent included two recovery nurses, physicians specializing in dermatology, infectious diseases, and pediatrics (one each), an optometrist, three surgical ophthalmologists, and two ophthalmologic surgical technicians. On an average mission, 100 to 150 surgical procedures are performed. Teams travel to remote locations in Guatemala and set up field hospitals in existing but unutilized structures. HELPS enjoys an excellent relationship with the government, as well as the people, of Guatemala.

The Naval Health Research Center (NHRC) has been conducting research into another aspect of operational readiness, that of planning for the medical personnel and materiel needed to successfully conduct operations in given scenarios. In this project, NHRC reviewed the Fleet Marine Force Authorized Medical Allowance (AMAL) blocks. This was accomplished by linking patient conditions, standardized treatments for each condition, and standardized supplies needed to perform each treatment task. The logistical footprint, or the weight and cube, was reduced for each AMAL reviewed.<sup>3-7</sup> Currently, researchers are completing work on a user-friendly planning tool, the Estimating Supplies Program (ESP),<sup>8</sup> which is available to military planners via the Internet.<sup>9</sup>

NMCS D and NHRC have collaborated so that both organizations can benefit. NHRC, in refining ESP, is in the process of adding OOTW scenarios to the model. To accomplish this, researchers are looking into methods for improved data collection, so that patient data for OOTW as well as other military operations can be gathered accurately and efficiently. Two previous OOTW operations, a peacekeeping mission in Zagreb, Croatia,<sup>10,11</sup> and a humanitarian mission to Haiti<sup>12</sup> have been documented by medical personnel deployed on those missions and summarized by NHRC researchers.

Analysis of the empirical data from these operations produced valuable information about the nature of OOTW. First, the composition of the population at risk differs from that of a

purely military operation because the personnel in medical units exhibit demographics different from those in combat units, and this introduces the need to plan for medical conditions not usually encountered during combat. Second, the civilian population of the host country may require care, thus necessitating planning considerations for endemic illnesses both in the civilian and the military population.

Data collection techniques for both the Zagreb and the Haiti missions consisted of a paper-and-pencil, free text instrument. While the proactive support of the leadership in both missions produced excellent data, there were some areas for improvement. The free-text aspect of the instruments resulted in a lack of conformity of language; for example, pain in the stomach might be called "abdominal cramps," "gastritis," or "stomachache." Some of the handwriting was illegible. Therefore, it was necessary to interpret, code, and standardize the data before data entry could be undertaken.

The goals of this project were to gather medical treatment data for the development of the OOTW database and to create an improved data collection form that would alleviate these problems within a reasonably simple format that would be convenient for providers. NHRC would benefit by testing the new instrument under field conditions, and NMCS D would benefit by receiving electronic documentation of the patient demographics, diagnoses, treatments, and medications that their personnel experienced.

## **Methods**

Hermansen and Wilcox developed a forced-choice patient encounter form to collect data about diagnoses, treatments, medications, and surgery in a given operational scenario.<sup>13</sup> For the present study, researchers adapted this form to fit the Guatemalan OOTW mission. For example, provider specialties included ophthalmology, optometry, pediatrics, and dermatology. The form, therefore, included conditions, treatments, and medications specific to these fields, as well as those that might be encountered in the Guatemalan climate and geography. The revised Patient Encounter Form is shown in Appendix A.

In Guatemala, healthcare providers recorded data for more than 75% of all patient encounters. The completed forms were returned to NHRC, where researchers created an electronic database and analyzed the data. Navy physicians who had accompanied HELPS were available for consultation in the event that questions arose during the analysis.

## **Results**

Physicians documented 857 patient encounters. About 57% of patients were female. More than one third of the patient population was aged 20 years or younger, with roughly 21% of patients between ages 1 and 11 years. Approximately 27% of patients were aged 21-40 years, and adults aged 41-60 years accounted for 22% of patients. Ten percent of

patients were aged 60 years or older. The youngest patient was 1 day old, while the oldest was aged 97 years.

**Table 1. Patient Demographics, by Sex**

| Sex           | Number     | %             |
|---------------|------------|---------------|
| Female        | 492        | 57.4%         |
| Male          | 332        | 38.7%         |
| Not specified | 33         | 3.9%          |
| <b>Total</b>  | <b>857</b> | <b>100.0%</b> |

**Table 2. Patient Demographics by Age**

| Age, y               | Number     | %             | Grouped %    |
|----------------------|------------|---------------|--------------|
| Less than 1          | 42         | 4.9%          |              |
| 1-10                 | 179        | 20.9%         |              |
| 11-20                | 93         | 10.9%         |              |
| <i>&lt;20</i>        |            |               | <i>36.7%</i> |
| 21-30                | 112        | 13.1%         |              |
| 31-40                | 118        | 13.8%         |              |
| <i>21-40</i>         |            |               | <i>26.9%</i> |
| 41-50                | 120        | 14.0%         |              |
| 51-60                | 72         | 8.4%          |              |
| <i>41-60</i>         |            |               | <i>22.4%</i> |
| 61-70                | 39         | 4.6%          |              |
| 71-80                | 38         | 4.4%          |              |
| >80                  | 6          | 0.7%          |              |
| <i>&gt;60</i>        |            |               | <i>9.7%</i>  |
| Not specified        | 38         | 4.4%          |              |
| <i>Not specified</i> |            |               | <i>4.4%</i>  |
| <b>Total</b>         | <b>857</b> | <b>100.0%</b> |              |

Doctors documented 1476 diagnoses. The most frequent diagnoses are shown in Table 3. Appendix B provides a detailed list of all the diagnoses and their International Classification of Diseases, 9<sup>th</sup> Revision, Clinical Modification codes (ICD-9-CM).<sup>14</sup> The most frequent diagnoses were refractory disorders, such as presbyopia, myopia, hyperopia, and astigmatism; eye disorders classified as nonspecific pain, swelling,

**Table 3. Most Frequent Diagnoses**

| <b>ICD-9-CM</b> | <b>Diagnosis</b>         | <b>N</b> | <b>%</b> | <b>Cumulative %</b> |
|-----------------|--------------------------|----------|----------|---------------------|
| 36700           | All Refractory Disorders | 174      | 11.79%   | 11.79%              |
| 37990           | Eye Disorder             | 115      | 7.79%    | 19.58%              |
| 12890           | Worms                    | 104      | 7.05%    | 26.63%              |
| 72890           | MS Pain                  | 64       | 4.34%    | 30.96%              |
| 36990           | Visual Loss              | 55       | 3.73%    | 34.69%              |
| 78400           | Headache                 | 55       | 3.73%    | 38.41%              |
| 00930           | Diarrhea                 | 50       | 3.39%    | 41.80%              |
| 36810           | Visual Disturbance       | 44       | 2.98%    | 44.78%              |
| 36600           | Cataract                 | 41       | 2.78%    | 47.56%              |
| 53550           | Gastritis                | 40       | 2.71%    | 50.27%              |
| 28590           | Anemia                   | 39       | 2.64%    | 52.91%              |
| 26990           | Nutritional Deficiencies | 38       | 2.57%    | 55.49%              |
| 55890           | Gastroenteritis/Colitis  | 36       | 2.44%    | 57.93%              |
| 78900           | Abdominal Pain           | 28       | 1.90%    | 61.79%              |
| 55200           | Hernia                   | 25       | 1.69%    | 63.48%              |
| 59900           | Urinary Tract Infection  | 22       | 1.49%    | 64.97%              |
| 46590           | URI                      | 20       | 1.36%    | 66.33%              |
| 37240           | Pterygium                | 19       | 1.29%    | 67.62%              |
| 49000           | Bronchitis               | 19       | 1.29%    | 68.90%              |
| 13300           | Scabies                  | 17       | 1.15%    | 70.05%              |
| 69000           | Dermatitis/Rash          | 17       | 1.15%    | 71.21%              |
| 48600           | Pneumonia                | 16       | 1.08%    | 72.29%              |
| 37515           | Dry Eyes                 | 15       | 1.02%    | 73.31%              |
| 37200           | Conjunctivitis           | 15       | 1.02%    | 74.32%              |
| 68200           | Cellulitis               | 15       | 1.02%    | 75.34%              |
| 11040           | Tinea                    | 14       | 0.95%    | 76.29%              |
| V22.2           | Pregnancy                | 14       | 0.95%    | 77.24%              |
| 53081           | Reflux                   | 13       | 0.88%    | 78.12%              |
| 13690           | Parasites                | 13       | 0.88%    | 79.00%              |
| 71800           | Joint Derangement        | 13       | 0.88%    | 79.88%              |
| 38100           | Otitis Media             | 11       | 0.75%    | 80.62%              |
| 78070           | General Malaise/Fatigue  | 11       | 0.75%    | 81.37%              |
| 72700           | Tendinitis               | 10       | 0.68%    | 82.05%              |
| 46200           | Pharyngitis              | 10       | 0.68%    | 82.72%              |
| 68400           | Impetigo                 | 10       | 0.68%    | 83.40%              |
| 37990           | Burning Eyes             | 10       | 0.68%    | 84.08%              |

redness, or discharge; and worms. Patient treatments are listed in Table 4, which reveals that patients were most often treated with prescription medication, followed by counseling. Table 5 lists the medications, of which vitamins, antiparasitic, and anti-inflammatory medications were prescribed most often.

**Table 4. Types and Frequencies of Treatments Provided**

| Treatment                            | N           | %             |
|--------------------------------------|-------------|---------------|
| Prescription                         | 591         | 37.9%         |
| Counseling                           | 516         | 33.0%         |
| Vision screening                     | 147         | 9.4%          |
| Physical examination                 | 125         | 8.0%          |
| Glasses                              | 109         | 7.0%          |
| Surgery                              | 35          | 2.3%          |
| Referral                             | 7           | .5%           |
| Miscellaneous<br>(fewer than 4 each) | 30          | 1.9%          |
| <b>Total</b>                         | <b>1560</b> | <b>100.0%</b> |

**Table 5. Prescriptions**

| Medicine                              | N           | %             |
|---------------------------------------|-------------|---------------|
| Vitamins                              | 330         | 24.6%         |
| Antiparasitic                         | 286         | 21.3%         |
| Anti-inflammatory                     | 200         | 14.9%         |
| Antibiotics                           | 169         | 12.6%         |
| Artificial tears                      | 131         | 9.7%          |
| Antacids                              | 55          | 4.1%          |
| Antifungal                            | 45          | 3.3%          |
| Acetaminophen                         | 32          | 2.4%          |
| Cold                                  | 14          | 1.0%          |
| Miscellaneous<br>(fewer than 14 each) | 82          | 6.1%          |
| <b>Total</b>                          | <b>1344</b> | <b>100.0%</b> |

In addition, data for 35 surgeries were reported. Eleven of the surgeries were cataract excisions, eight were hernia repairs, and three were prolapsed uterus repairs. There were 13 other surgical procedures performed during the mission, including 10 additional eye surgeries, a bladder repair, a tumor removal, and a circumcision.

## Discussion

The Navy physicians who participated in the HELPS humanitarian mission to Guatemala reported a wide variety of diagnoses and treatments, particularly in areas related to the

eyes and to visual problems. Appendix B lists 33 such diagnoses in the ICD-9-CM classification for diseases of the nervous system and sense organs. Physicians also performed surgeries and prescribed glasses. These data indicate that doctors had the opportunity to work within their specialties and demonstrate that the mission provided a platform for training military physicians in the field. The after-action report includes evaluations from members of each specialty, including nurses and technicians (A. Morton, NMCS D, written communication, April 20, 2000). They agreed that the hands-on training experience taught them valuable lessons in working in the field; that is, they learned to improvise and to diagnose without benefit of the latest testing equipment. They learned as well the importance of sanitation and personal hygiene, particularly in regard to food. Another benefit they cited was intangible but invaluable, and that was the morale-building sense of having provided assistance to people who needed and valued it.

NHRC researchers, in evaluating the efficacy of the patient encounter data collection sheet, found that the forced-choice format offers several improvements over the free-text version. The data were more uniform, and illegibility was reduced greatly; therefore, the extra step of coding the sheets was eliminated. The doctors, too, preferred writing as little as possible. However, there is still room for improvement. This form did not successfully link diagnostic data with treatment and prescription information, and valuable information was sometimes lost. Further, the list format (see Appendix A) was not intuitive; that is, providers easily missed items because they were not where they were expected to be. For example, the diagnosis of "worms" was sometimes missed because doctors did not see it under "Infectious and Parasitic Diseases."

## **Conclusion**

The collaboration of NHRC, NMCS D, and HELPS was an innovative effort that was beneficial to all. The project enabled NHRC researchers to devise and test a data collection instrument and also to add to their experience with OOTW projects. NMCS D personnel received valuable field training, which is essential to operational medical readiness. In addition, they profited personally from the experience through improved morale resulting from the realization that they performed well. The data collected and analyzed by NMCS D and NHRC also documented the mission and provided information for future planning. HELPS received the services of a team of skilled physicians, nurses, and technicians, and the Guatemalan people received the benefits of expert medical care.

Further research into improved data collection methods is indicated. The forced-choice, paper-and-pencil format has proved to be preferable to the free-text form. However, any paper data collection form will add weight and volume to the blocks of equipment that are transported to the operation. Therefore, NHRC plans to create and test data collection methods where providers in the field use hand-held computers to record data that can then be electronically transmitted to NHRC. It is expected that this method will reduce errors and save time, and may eventually replace paper-and-pencil forms completely.

NHRC will continue to expand its base of patient encounter data for OOTW. Researchers will employ several methods to accomplish this expansion. Cooperative efforts, such as the Guatemala mission described in this report, will be carried out to collect original data. In addition, established sources of data for disease and injury rates such as the Center for Disease Control, the World Health Organization, the Red Cross and other NGOs will continue to be explored. The information about OOTW will be incorporated into the NHRC ESP model, thereby increasing the depth and scope of that planning tool.

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**Appendix A**  
**Revised Patient Encounter Form**

**MEDICAL ENCOUNTER DATA SHEET (MEDS)**

**I. PATIENT INFORMATION**

|   |                        |      |   |
|---|------------------------|------|---|
| DATE OF VISIT (YY/MM/DD):<br>____/____/____ | NAME (LAST, FIRST, MI) | AGE: | SEX: <input type="checkbox"/> MALE<br><input type="checkbox"/> FEMALE |
| TOWN/VILLAGE:                               |                        |      |   |

**II. SIGNS, SYMPTOMS, AND DIAGNOSES**

|  |  |
|--|--|
| <p><b>INFECTIOUS DISEASES:</b></p> <input type="checkbox"/> DENGUE FEVER<br><input type="checkbox"/> HERPES SIMPLEX VIRUS<br><input type="checkbox"/> SEPSIS<br><input type="checkbox"/> TUBERCULOSIS<br><input type="checkbox"/> TYPHOID FEVER<br><input type="checkbox"/> OTHER, SPECIFY: _____  | <p><b>PSYCHOLOGICAL DISORDERS:</b></p> <input type="checkbox"/> ALCOHOL ABUSE<br><input type="checkbox"/> ANXIETY<br><input type="checkbox"/> DEPRESSION<br><input type="checkbox"/> DRUG ABUSE<br><input type="checkbox"/> SITUATIONAL DISTURBANCE<br><input type="checkbox"/> OTHER, SPECIFY: _____  |
| <p><b>PARASITIC CONDITIONS:</b></p> <input type="checkbox"/> LICE<br><input type="checkbox"/> SCABIES<br><input type="checkbox"/> TINEA<br><input type="checkbox"/> WARTS<br><input type="checkbox"/> WORMS<br><input type="checkbox"/> OTHER, SPECIFY: _____  | <p><b>ENT:</b></p> <input type="checkbox"/> CATARACT<br><input type="checkbox"/> CONJUNCTIVITIS<br><input type="checkbox"/> EAR DISORDER<br><input type="checkbox"/> EYE DISORDER<br><input type="checkbox"/> EYE FOREIGN BODY, EXTERNAL<br><input type="checkbox"/> HEARING LOSS<br><input type="checkbox"/> OTITIS EXTERNA<br><input type="checkbox"/> OTITIS MEDIA<br><input type="checkbox"/> VERTIGO, PERIPHERAL<br><input type="checkbox"/> VISUAL DISTURBANCE<br><input type="checkbox"/> VISUAL LOSS<br><input type="checkbox"/> OTHER, SPECIFY: _____ |
| <p><b>RESPIRATORY:</b></p> <input type="checkbox"/> ASTHMA<br><input type="checkbox"/> BRONCHITIS<br><input type="checkbox"/> PHARYNGITIS<br><input type="checkbox"/> PNEUMONIA<br><input type="checkbox"/> RHINITIS<br><input type="checkbox"/> SINUSITIS<br><input type="checkbox"/> TONSILLITIS<br><input type="checkbox"/> URI<br><input type="checkbox"/> OTHER, SPECIFY: _____ | <p><b>SKIN:</b></p> <input type="checkbox"/> CELLULITIS<br><input type="checkbox"/> DERMATITIS/RASH<br><input type="checkbox"/> FOLLICULITIS<br><input type="checkbox"/> HEAT RASH<br><input type="checkbox"/> INGROWN TOENAIL<br><input type="checkbox"/> PYODERMA/BOIL/ABSCESS/CARBUNCLE<br><input type="checkbox"/> OTHER, SPECIFY: _____   |
| <p><b>KIDNEY:</b></p> <input type="checkbox"/> HYPERTENSION<br><input type="checkbox"/> URINARY TRACT INFECTION<br><input type="checkbox"/> OTHER, SPECIFY: _____  | <p><b>STD:</b></p> <input type="checkbox"/> CHANCROID<br><input type="checkbox"/> GENITAL HERPES VIRUS<br><input type="checkbox"/> GONORRHEA<br><input type="checkbox"/> NON-SPECIFIC URETHRITIS<br><input type="checkbox"/> SYPHILIS<br><input type="checkbox"/> OTHER, SPECIFY: _____  |
| <p><b>GASTROINTESTINAL:</b></p> <input type="checkbox"/> APPENDICITIS<br><input type="checkbox"/> BACILLARY DYSENTARY<br><input type="checkbox"/> CONSTIPATION<br><input type="checkbox"/> DIARRHEA<br><input type="checkbox"/> GASTROENTERITIS/COLITIS<br><input type="checkbox"/> HEMORRHOIDS<br><input type="checkbox"/> HERNIA<br><input type="checkbox"/> OTHER, SPECIFY: _____ | <p><b>GYNECOLOGY:</b></p> <input type="checkbox"/> CERVICITIS<br><input type="checkbox"/> FEMALE DISEASE, OTHER<br><input type="checkbox"/> MENOPAUSAL DISORDERS<br><input type="checkbox"/> PREGNANCY<br><input type="checkbox"/> VAGINITIS/VULVITIS<br><input type="checkbox"/> OTHER, SPECIFY: _____  |
| <p><b>MUSCULOSKELETAL:</b></p> <input type="checkbox"/> INTERVERTEBRAL DISC DISORDER<br><input type="checkbox"/> JOINT DERANGEMENT<br><input type="checkbox"/> OSTEOMYELITIS<br><input type="checkbox"/> TENDINITIS<br><input type="checkbox"/> OTHER, SPECIFY: _____  | <p><b>NUTRITIONAL:</b></p> <input type="checkbox"/> ANEMIA<br><input type="checkbox"/> DEHYDRATION<br><input type="checkbox"/> GOITER<br><input type="checkbox"/> GOUT<br><input type="checkbox"/> NUTRITIONAL DEFICIENCIES<br><input type="checkbox"/> THYROID NODULE<br><input type="checkbox"/> OTHER, SPECIFY: _____   |
| <p><b>NERVOUS SYSTEM:</b></p> <input type="checkbox"/> HEADACHE<br><input type="checkbox"/> MENINGITIS<br><input type="checkbox"/> SEIZURE<br><input type="checkbox"/> OTHER, SPECIFY: _____   | <p><b>OTHER MEDICAL PROBLEMS:</b></p> <input type="checkbox"/> FEVER OF UNDETERMINED ORIGIN<br><input type="checkbox"/> GENERAL MALAISE/FATIGUE<br><input type="checkbox"/> OTHER, SPECIFY: _____  |

**ACCIDENTS/TRAUMA: Show TYPE OF INJURY and LOCATION by checking the appropriate boxes.**

**TYPE OF INJURY**

- ABRASION
- BRUISE
- BURN (CHEMICAL)
- BURN (HEAT)
- FOREIGN BODY
- FRACTURE
- HEAT EXHAUSTION
- HEAT STROKE
- LACERATION
- POISONING
- PUNCTURE WOUND
- SPRAIN/STRAIN

**LOCATION**

- |                                    |   |
|------------------------------------|---|
| <input type="checkbox"/> SCALP     | <input type="checkbox"/> HAND           |
| <input type="checkbox"/> FACE      | <input type="checkbox"/> FINGER         |
| <input type="checkbox"/> EYE       | <input type="checkbox"/> BACK           |
| <input type="checkbox"/> EAR       | <input type="checkbox"/> ABDOMEN        |
| <input type="checkbox"/> MOUTH     | <input type="checkbox"/> HIP/BUTTOCK    |
| <input type="checkbox"/> NECK      | <input type="checkbox"/> GROIN/GENITAL  |
| <input type="checkbox"/> CHEST     | <input type="checkbox"/> UPPER LEG      |
| <input type="checkbox"/> RIBS      | <input type="checkbox"/> KNEE           |
| <input type="checkbox"/> SHOULDER  | <input type="checkbox"/> SHIN/CALF      |
| <input type="checkbox"/> UPPER ARM | <input type="checkbox"/> ANKLE          |
| <input type="checkbox"/> ELBOW     | <input type="checkbox"/> FOOT           |
| <input type="checkbox"/> FOREARM   | <input type="checkbox"/> TOE            |
| <input type="checkbox"/> WRIST     | <input type="checkbox"/> DOES NOT APPLY |

OTHER, SPECIFY: \_\_\_\_\_

**DENTAL PROBLEMS:**

- ABSCESS/INFECTION
- CARIES
- ENDODONTIC
- GINGIVITIS/PERIODONTAL
- ORAL ULCERS
- PERICORONITIS
- OTHER, SPECIFY: \_\_\_\_\_

**DENTAL PROCEDURES:**

- ENDODONTIC TREATMENT
- EXAM
- EXTRACTION
- FILLING
- MEDICATION, SPECIFY \_\_\_\_\_
- OTHER, SPECIFY: \_\_\_\_\_

**III. PROGNOSIS**

**IV. TREATMENT(S) PROVIDED (Check any that apply.)**

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> COUNSELING                | <input type="checkbox"/> CAST/SPLINT/ACE WRAP                               | <input type="checkbox"/> PHYSICAL EXAM    |
| <input type="checkbox"/> PRESCRIPTION(S)           | <input type="checkbox"/> DRESSING   | <input type="checkbox"/> VISION SCREENING |
| <input type="checkbox"/> SURGERY/SUTURE PROCEDURES | <input type="checkbox"/> HOSPITALIZATION, SPECIFY LENGTH OF STAY _____ DAYS |   |
| <input type="checkbox"/> OTHER, SPECIFY _____      |   |   |

**V. SURGERY (Check the PROCEDURE and LOCATION)**

**PROCEDURE**

- CLOSURE
- DEBRIDEMENT
- AMPUTATION
- RESECTION
- FIXATION
- GRAFT
- LOBECTOMY
- DRAIN
- OPEN
- OTHER/SPECIFY \_\_\_\_\_

**LOCATION**

- |  |                                     |
|--|-------------------------------------|
| <input type="checkbox"/> ESOPHAGUS       | <input type="checkbox"/> RECTUM     |
| <input type="checkbox"/> ARM             | <input type="checkbox"/> LIVER      |
| <input type="checkbox"/> THORAX          | <input type="checkbox"/> PANCREAS   |
| <input type="checkbox"/> DIAPHRAGM       | <input type="checkbox"/> SPLEEN     |
| <input type="checkbox"/> BACK W/SPLEEN   | <input type="checkbox"/> KIDNEY     |
| <input type="checkbox"/> BACK W/OSPLEEN  | <input type="checkbox"/> BLADDER    |
| <input type="checkbox"/> ABDOMEN         | <input type="checkbox"/> GROIN      |
| <input type="checkbox"/> SMALL INTESTINE | <input type="checkbox"/> GENITAL    |
| <input type="checkbox"/> DUODENUM        | <input type="checkbox"/> REPRODUCT. |
| <input type="checkbox"/> COLON           | <input type="checkbox"/> LEG        |
| <input type="checkbox"/> EYE             |                                     |
| <input type="checkbox"/> GENERAL         | <input type="checkbox"/> NONE       |

ANESTHESIA?  LOCAL

BURN SPECIFY % BSA FOR EACH  
 1<sup>ST</sup> DEGREE \_\_\_\_\_ 2<sup>ND</sup> DEGREE \_\_\_\_\_ 3<sup>RD</sup> DEGREE \_\_\_\_\_

**VI. MEDICATIONS PRESCRIBED (Check the type of medication)**

- |  |                                       |
|--|---------------------------------------|
| <input type="checkbox"/> ANTIBIOTICS       | <input type="checkbox"/> ANTIFUNGAL   |
| <input type="checkbox"/> VITAMINS          | <input type="checkbox"/> ANTACIDS     |
| <input type="checkbox"/> ANTI-INFLAMMATORY | <input type="checkbox"/> COLD/ALLERGY |
| <input type="checkbox"/> ANTI-PARASITIC    | <input type="checkbox"/> OTHER _____  |

**VII. VISIT TYPE:**

- LIMITED SERVICE
- OUTPATIENT
- INPATIENT

IF THIS IS A FOLLOW-UP VISIT, PLEASE SPECIFY:

PURPOSE OF INITIAL VISIT \_\_\_\_\_

PURPOSE OF THIS VISIT \_\_\_\_\_

**NARRATIVE SUMMARY (Include obstacles to care and how overcome):**

Provider Name \_\_\_\_\_

Provider Specialty \_\_\_\_\_

**Appendix B**  
**Diagnoses Classified by ICD-9-CM Codes**

**Infectious & Parasitic Diseases**

|                           |     |       |
|---------------------------|-----|-------|
| 12890 Worms               | 104 | 7.19% |
| 00930 Diarrhea            | 50  | 3.46% |
| 13300 Scabies             | 17  | 1.17% |
| 11040 Tinea               | 14  | 0.97% |
| 13690 Parasites           | 13  | 0.90% |
| 13290 Lice                | 7   | 0.48% |
| 07999 Viral Syndrome      | 4   | 0.28% |
| 11790 Fungal Infection    | 4   | 0.28% |
| 03890 Sepsis              | 2   | 0.14% |
| 07010 Hepatitis A         | 2   | 0.14% |
| 07810 Warts               | 2   | 0.14% |
| 08460 Malaria             | 2   | 0.14% |
| 09800 Gonorrhea           | 2   | 0.14% |
| 11010 Onychomycosis       | 2   | 0.14% |
| 00400 Bacillary Dysentery | 1   | 0.07% |
| 05290 Varicella           | 1   | 0.07% |
| 05490 Coldsore            | 1   | 0.07% |
| 06100 Dengue Fever        | 1   | 0.07% |
| 08590 Leishmaniasis       | 1   | 0.07% |
| 11000 Kerlon              | 1   | 0.07% |
| 11200 Oral Thrush         | 1   | 0.07% |

**Neoplasms**

|                     |   |       |
|---------------------|---|-------|
| 23100 Carcinoma     | 1 | 0.07% |
| 23920 Skin Cancer   | 1 | 0.07% |
| 23940 Bladder Tumor | 1 | 0.07% |

**Endocrine, Nutritional, Metabolic Imm**

|                                |    |       |
|--------------------------------|----|-------|
| 26990 Nutritional Deficiencies | 38 | 2.63% |
| 27650 Dehydration              | 3  | 0.21% |

**Diseases Of The Blood And Blood-Forming Organs**

|              |    |       |
|--------------|----|-------|
| 28590 Anemia | 39 | 2.70% |
|--------------|----|-------|

**Mental Disorders**

|               |   |       |
|---------------|---|-------|
| 30000 Anxiety | 1 | 0.07% |
|---------------|---|-------|

**Diseases Of The Nerv. Sys. & Sense Organs**

|                                |     |        |
|--------------------------------|-----|--------|
| 36700 All Refractory Disorders | 174 | 12.02% |
| 37990 Eye Disorder             | 115 | 7.95%  |
| 36990 Visual Loss              | 55  | 3.80%  |
| 36810 Visual Disturbance       | 44  | 3.04%  |
| 36600 Cataract                 | 41  | 2.83%  |
| 37240 Pterygium                | 19  | 1.31%  |
| 37200 Conjunctivitis           | 15  | 1.04%  |
| 37515 Dry Eyes                 | 15  | 1.04%  |
| 38100 Otitis Media             | 11  | 0.76%  |
| 37990 Burning Eyes             | 10  | 0.69%  |
| 36731 Anisometopia             | 5   | 0.35%  |
| 38010 Otitis Externa           | 4   | 0.28%  |

|                                       |   |       |
|---------------------------------------|---|-------|
| 38990 Hearing Loss                    | 4 | 0.28% |
| 37320 Chalazion                       | 3 | 0.21% |
| 37800 Esotropia                       | 3 | 0.21% |
| 37990 Eye Pain                        | 3 | 0.21% |
| 35180 Hemifacial Spasm                | 2 | 0.14% |
| 36700 Age Related Vis. Loss           | 2 | 0.14% |
| 37950 Nystagmus                       | 2 | 0.14% |
| 38890 Ear Disorder                    | 2 | 0.14% |
| 34690 Migraine                        | 1 | 0.07% |
| 36190 Retinal Detachment              | 1 | 0.07% |
| 36265 Macular Pig. Disrupt            | 1 | 0.07% |
| 36430 Iritis                          | 1 | 0.07% |
| 36740 Poor Vision                     | 1 | 0.07% |
| 36813 Photophobia                     | 1 | 0.07% |
| 36900 Cortical(?) Blindness           | 1 | 0.07% |
| 37100 Corneal Scar                    | 1 | 0.07% |
| 37261 Pyogenic Conjunctival Granuloma | 1 | 0.07% |
| 37500 Blocked Tear Duct               | 1 | 0.07% |
| 37520 Epiphora                        | 1 | 0.07% |
| 37530 Dacryocystitis                  | 1 | 0.07% |
| 37556 Lacrimal Duct Stenosis          | 1 | 0.07% |
| 37900 Episcleritus Os.                | 1 | 0.07% |
| 37990 Twitch, Left Eye                | 1 | 0.07% |
| 37990 Tearing Eyes                    | 1 | 0.07% |
| 38189 No Ear Canals                   | 1 | 0.07% |
| 38600 Menieres                        | 1 | 0.07% |
| 38610 Vertigo, Peripheral             | 1 | 0.07% |
| 38870 Left Ear Pain                   | 1 | 0.07% |

**Diseases Of The Circulatory System**

|                                    |   |       |
|------------------------------------|---|-------|
| 40190 Hypertension                 | 2 | 0.14% |
| 41390 Angina                       | 2 | 0.14% |
| 42410 Aortic Stenosis              | 1 | 0.07% |
| 42789 Supraventricular Tachycardia | 1 | 0.07% |
| 45490 Varicose Veins               | 1 | 0.07% |
| 45981 Venous Insufficiency         | 1 | 0.07% |

**Diseases Of The Respiratory System**

|                   |    |       |
|-------------------|----|-------|
| 46590 Uri         | 20 | 1.38% |
| 49000 Bronchitis  | 19 | 1.31% |
| 48600 Pneumonia   | 16 | 1.11% |
| 46200 Pharyngitis | 10 | 0.69% |
| 46100 Sinusitis   | 5  | 0.35% |
| 49390 Asthma      | 4  | 0.28% |
| 47790 Rhinitis    | 3  | 0.21% |
| 51100 Pleurisy    | 2  | 0.14% |
| 51880 Copd        | 2  | 0.14% |

|   |    |       |   |             |             |
|---|----|-------|---|-------------|-------------|
| 46300 Tonsillitis   | 1  | 0.07% | 71800 Joint Derangement                             | 13          | 0.90%       |
| 47411 Enlarged Tonsils                                      | 1  | 0.07% | 72700 Tendinitis                                    | 10          | 0.69%       |
| 47790 Allergies   | 1  | 0.07% | 71690 Arthritis                                     | 8           | 0.55%       |
| <b>Diseases Of The Digestive System</b>                     |    |       | 72450 Back Pain                                     | 8           | 0.55%       |
| 53550 Gastritis   | 40 | 2.76% | 73000 Osteomyelitis                                 | 4           | 0.28%       |
| 55890 Gastroenteritis/Colitis                               | 36 | 2.49% | 71590 Djd   | 3           | 0.21%       |
| 55200 Hernia  | 25 | 1.73% | 71940 Arthralgias                                   | 2           | 0.14%       |
| 53081 Reflux  | 13 | 0.90% | 71945 Left Hip Pain                                 | 1           | 0.07%       |
| 53190 Ulcer   | 2  | 0.14% | 72871 Plantar Fasciitis                             | 1           | 0.07%       |
| 52100 Rotten Tooth  | 1  | 0.07% | <b>Congenital Anomalies</b>                         |             |             |
| 52460 Tmj Pain  | 1  | 0.07% | 74900 Cleft Palate                                  | 1           | 0.07%       |
| 52590 Odontalgia  | 1  | 0.07% | 75920 Thyroglossal Cyst                             | 1           | 0.07%       |
| 56400 Constipation  | 1  | 0.07% | <b>Symptoms, Signs &amp; Ill-Defined Conditions</b> |             |             |
| 56510 Rectal Fistula  | 1  | 0.07% | 78400 Headache                                      | 55          | 3.80%       |
| <b>Diseases Of The Genitourinary System</b>                 |    |       | 78900 Abdominal Pain                                | 28          | 1.94%       |
| 59900 Urinary Tract Infection                               | 22 | 1.52% | 78070 General Malaise/Fatigue                       | 11          | 0.76%       |
| 61610 Vaginitis/Vulvitis                                    | 9  | 0.62% | 78030 Seizure                                       | 2           | 0.14%       |
| 61810 Uterine Prolapse                                      | 5  | 0.35% | 78300 Dec Appetite                                  | 2           | 0.14%       |
| 60190 Prostatitis   | 2  | 0.14% | 78620 Cough   | 2           | 0.14%       |
| 61100 Mastitis  | 2  | 0.14% | 78100 Tremor  | 1           | 0.07%       |
| 62520 Mittelschmerz   | 2  | 0.14% | 78449 Dysphonia                                     | 1           | 0.07%       |
| 62530 Dysmenorrhea  | 2  | 0.14% | 78470 Epistaxis                                     | 1           | 0.07%       |
| 62650 Gynecological Bleeding                                | 2  | 0.14% | 78520 Heart Murmur                                  | 1           | 0.07%       |
| 62720 Menopause   | 2  | 0.14% | 78650 Chest Pain                                    | 1           | 0.07%       |
| 59590 Cystitis  | 1  | 0.07% | 78710 Heartburn                                     | 1           | 0.07%       |
| 60000 Prostate Hypaplasia                                   | 1  | 0.07% | 78830 Incontinence                                  | 1           | 0.07%       |
| 60500 Phimosis  | 1  | 0.07% | 84090 Tendon Lacer., L. Hand                        | 1           | 0.07%       |
| 61600 Cervicitis  | 1  | 0.07% | 87130 Enuclation                                    | 1           | 0.07%       |
| 62020 Ovarian Cyst  | 1  | 0.07% | 87140 Corneal Laceration                            | 1           | 0.07%       |
| 62590 Female Disease, Other                                 | 1  | 0.07% | <b>Injury &amp; Poisoning</b>                       |             |             |
| 62680 Long Menses   | 1  | 0.07% | 91900 Bite  | 1           | 0.07%       |
| <b>Diseases Of The Skin &amp; Subcutaneous Tissue</b>       |    |       | 92490 Coccyx Bruise                                 | 1           | 0.07%       |
| 69000 Dermatitis/Rash                                       | 17 | 1.17% | 95990 Grenade Injury                                | 1           | 0.07%       |
| 68200 Cellulitis  | 15 | 1.04% | 99820 Laceration                                    | 1           | 0.07%       |
| 68400 Impetigo  | 10 | 0.69% | <b>Supplementary Classifications</b>                |             |             |
| 68000 Pyoderma/Boil/Abscess/<br>Carbuncle                   | 4  | 0.28% | V22.2 Pregnancy                                     | 14          | 0.97%       |
| 69270 Heat Rash   | 4  | 0.28% | V70 Normal Exam                                     | 7           | 0.48%       |
| 70909 Freckles  | 2  | 0.14% | V71.02 Behavior Probs.                              | 2           | 0.14%       |
| 69290 Eczema  | 1  | 0.07% | V20 Mother Died                                     | 1           | 0.07%       |
| 69310 Food Allergies  | 1  | 0.07% | V62.8 Nervous                                       | 1           | 0.07%       |
| 69830 Lichen Simplex Chronicus                              | 1  | 0.07% | V74.1 R/O Tb  | 1           | 0.07%       |
| 70480 Folliculitis  | 1  | 0.07% | V81 Heart Eval-OK                                   | 1           | 0.07%       |
| 70710 Leg Ulcer   | 1  | 0.07% | <b>Other</b>  |             |             |
| <b>Diseases Of The Musc. System &amp; Connective Tissue</b> |    |       | 99999 Unreadable/Unknown                            | 29          | 2.00%       |
| 72890 Ms Pain   | 64 | 4.42% | <b>Total</b>  | <b>1476</b> | <b>100%</b> |

# REPORT DOCUMENTATION PAGE

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| <b>1. Report Date (DD MM YY)</b><br>18-04-01   | <b>2. Report Type</b><br>Interim | <b>3. DATES COVERED (from - to)</b><br>01-03-00 to 01-03-01  |
| <b>4. TITLE AND SUBTITLE</b><br>Documenting Patient Encounters During a Humanitarian Assistance Mission to Guatemala   |                                  | <b>5a. Contract Number:</b><br><b>5b. Grant Number:</b><br><b>5c. Program Element:</b> 63706N<br><b>5d. Project Number:</b> M0095<br><b>5e. Task Number:</b> 001<br><b>5f. Work Unit Number:</b> 60101 |
| <b>6. AUTHORS</b><br>Eleanor D. Gauker & Paula J. Konoske  |                                  |  |
| <b>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</b><br>Naval Health Research Center<br>P.O. Box 85122<br>San Diego, CA 92186-5122                        |                                  | <b>9. PERFORMING ORGANIZATION REPORT NUMBER</b><br>Report No. 01-13  |
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**13. SUPPLEMENTARY NOTES**

**14. ABSTRACT (maximum 200 words)**  
 Researchers from the Naval Health Research Center (NHRC) collected patient encounter data from Naval Medical Center San Diego (NMCS D) physicians who traveled with a non-government organization, HELPS, International, on a humanitarian assistance mission to Guatemala. The purpose was for NHRC to expand its database of operations other than war patient information and to test a revised patient encounter form. The purpose of the NMCS D staff was to train to provide medical care under austere conditions. Data were collected for 857 patient encounters during which 1476 diagnoses were made. Women comprised 57% of the sample, and children aged 1-10 formed the largest age group (20.9%). The NMCS D staff included several eye specialists; therefore, the diagnoses were most frequently ophthalmologic conditions. Other frequent diagnoses included worms, musculoskeletal pain, headaches, and diarrhea. The revised, forced-choice patient encounter form alleviated problems of illegibility and nonstandard language often found in free-text forms. Future research will continue to improve data collection methods and to expand the NHRC medical information database.

**15. SUBJECT TERMS**  
OOTW, humanitarian assistance, patient record, data collection

|  |                            |                             |   |                                  |  |
|--|----------------------------|-----------------------------|---|----------------------------------|--|
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