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BIKINI TRIP REPORT

Dear Mr. Ray:

Thank you for instrumenting my return to Bikini Atoll to see what I could do to be helpful to the people and the future of the dispensary. I appreciate your kindness.

I went to Bikini in December 1974 as a fisherman for the University of Hawaii. During this trip I was asked to see patients on Bikini by Jaramia Lavidicus, the resident health aide. I found Jaramia capable, intelligent, willing, anxious, involved and deeply concerned person. He understood English quite well and acted as interpreter. Several patients were seen that opened my eyes to some of Jaramia's problems.

The first was a boy quite sick, a high temperature and had been getting penicillin injections. He was completely listless, apathetic and had quite obviously not been taking adequate liquid. His fever at this point was due to dehydration. The patient was instructed to take 2 oz. water every hour and nothing else for 24 hours. Oral penicillin tablets would be just as effective as injections and less dangerous to the patient's life. The patient became hydrated and was much improved the next day. The lessons gained here are at least two. The first is that penicillin by injection is a dangerous drug, people develop sensitivities to it. It may cause an anaphylactic reaction and almost immediate death. Such a death from the injection of penicillin would destroy the value of the medical aide to the people as they would be inclined to feel that he was the cause. Oral penicillin, in most cases, is perfectly adequate for general use. It has an infinitely less likelihood of causing a severe anaphylaxis in the individual taking it. In the best hospitals and medical centers there are deaths due to penicillin by injection.

I did find penicillin tablets that were not outdated but looked as if they had been exposed to moisture and were not likely to be useful. This was the only oral antibiotic that I could find on the premises and I explained to Jaramia that oral antibiotics, especially tetracycline and penicillin, would be preferable to almost any kind of injection except under every extreme circumstances, such as meningitis. He appreciated, understood and accepted the suggestion.

The next patient we saw was an old lady with auricular fibrillation. The problem appeared to be one of giving her oral digitalis. There were some injectable digitalis glucosides, that I felt certain should not be used even in the cautious hands of a cardiologist. We gave her digitalis by mouth. There was a bottle of digitalis leaf, which is probably the best form available, and he accepted this thought very well. Subsequent follow-up on this patient did show her fibrillation to be slower. Exercise tolerance, breathing and coughing were very much improved. Here was an object lesson for Jaramia and he took it very well, accepted the suggestion and was enthusiastic.

The next case we saw was a patient with diarrhea of several days standing. After examination presented no gross evidence of anything that could be related to his diarrhea and we did find some Kaopectate. It was suggested that he start on this and I would get some tetracycline from my supplies on the ship later.

I was amazed to discover Jaramia pouring out an intravenous solution (normal saline). In asking him why he said that he needed a container to dispense the Kaopectate. He poured out 1,000 cc of I.V. solution that was still good for irrigating and washing off wounds as a relatively sterile cleanser even if it was outdated for intravenous use. The Kaopectate in the amount given was 4 oz. or 6 oz. and was poured in this big bottle. I was discouraged to find some medication and useful material dumped out just to provide a container. Jaramia said he had nothing else. The thought came to my mind that simple plastic sandwich bags could be well used as containers. A double bag could be used as a container for liquids, pills and even creams.

Another patient that we saw was a fellow who had eaten a Red Snapper caught in front of the camp just where the ship was tied up at Bikini. He had been ill about 6 days and was still very weak, perspiring, feeling cold around his mouth and cold in his extremities. Jaramia said all patient had to eat was fish. Even eating a lightly poisonous fish would make him more ill, in that ciguatera is a cumulative poisoning. Patient was advised to eat nothing but the smallest of the fish that were caught. The older and bigger the fish the more likely to have a large concentration of poison in its tissue. Also, it was suggested, that he should eat none of the viscera, guts or liver. In most societies near the ocean, fish viscera are not discarded, especially the liver. He should eat fish that are pelagic which don't feed on the reef. Primarily it was suggested that he eat lobster or a fish called Uu Uu, mimpachi is the Japanese name and I think it was familiar to them. I feel that mimpachi is less likely to contain poison because it feeds on plankton. So here was some minimal information that could be useful to a person who was quite sick.

Again, I repeat, and I can't repeat too much, what a charming man Jaramia was and what a fertile ground for planting information.

I had the privilege of meeting Jaramia's wife and cute little baby. The baby had a vesicular rash on its abdomen that appeared to possibly be related to scabies. Jaramia was advised to treat the rash in a conservative manner, but the remote possibility of scabies came to mind and we had no scaficide.

I did see a number of other patients with minor complaints however these three or four stated above stand out in my mind as examples of what can be done on the scene to help a medical aide. This concept of treating patients and teaching or helping the health aide to understand why things are done that way and in that manner, gives him the tools to work with in an actual situation which reinforces his knowledge and gives him a better feeling of security. He needed encouragement and appreciation for what he was doing. He was working diligently and doing the very best he could but he needed someone to come in and, more or less, "father" the situation to reinforce his confidence. I believe suggestions were not offensive to Jaramia and he was most appreciative.

I was discouraged about the total amount of medication available to the people at that time. There was a military type aluminum container, in it were medications lying around and mixed up along with catheters, gloves and sterile packaging. Slithering around in this box were cockroaches that had eaten the lables off many of the things we were looking at. We were able to discern, from the label fragments that were left, what the medications really were.

One of the things that struck me was that there needed to be some way of keeping drugs cool so that their expiration date time would be valid and even lengthened. I thought that perhaps a subterranean storage place would probably give an average temperature of around 77° day in and day out. This would be preferable to the situation with the drugs on shelves and temperatures ranging from 77° during the night and as much as 110° on very hot days. Also, I felt that he needed some insecticide spray to control the insects, mostly cockroaches and ants.

Jaramia understood this. He touched me very much by giving me some shells to take home in appreciation for the help that I had given. He said, and I quote I believe fairly accurately, that "if you come to Bikini I will give you an island - my island" and he indicated across the lagoon someplace where he must have had a small island. He said "if you will come and live, you can have it. I will give it to you." This practically brought tears to my eyes to think that here is a man that is this willing to try to get help and it made resolve, that if it was possible I would help him. This was the basis for, probably the main basis - for my desire to return to Bikini: To work with Jaramia and realize that my work would not be in vain. I looked forward to returning to see him.

About this time there were several things that came to mind. One was that it would be great if there were an Intern's Manual or "Marshallese Medical Cookbook." Perhaps the medicines could be grouped for such ailments as skin troubles, eye trouble, bowel trouble, and cross indexed by number for reference.

The manual, "The Marshallese Medical Cookbook," is something that could be worked up by an interested person and basically include all of the known Marshallese native therapies that are valuable, such as how to manage a Portugese Man of War sting on the skin. The local native therapy here in Hawaii is to crush papaya fruit, seeds or leaves and put them over the sting of the Portugese Man of War. The proteolytic enzyme in papaya does

shorten reaction and recovery. The same thing is valid for bee sting. People tend to think that effective medicine depends upon modern techniques, drugs and hospitals and that outlying areas of medical knowledge are faulty, this is not true.

Some of the medications that are used to control odors, poultices used to control boils, and so on, utilized by the people should be recognized and encouraged when - it can be shown - that they are useful or not harmful. Familiar practices that the patients has great confidence in are of value and shouldn't be ridiculed by whatever medical aide or visiting doctor. The "Marshallese Medical Cookbook" could be written in such a way as to preserve and make available traditional remedies and treatments and supplement them - current information.

This just about concludes the gamut of thoughts that came to mind at Bikini in December 1974.

In May of 1975, I had occasion to visit with Roger Ray. Much to my delight he brought me a letter from Oscar DeBrum inviting me to come and try to help train the medical personnel at Bikini. I was included in a group of scientists who were going to survey Bikini. I was happy to get ashore and hurried over to the dispensary area to see if I could find my old friend, but he wasn't there. Jaramia Lavidicus had been taken back to Majuro for additional training and I'm sure that he was delighted and is getting great deal of help. I understand that there is a periodic recall of these medical aides to the main hospital for additional training and updating. My only fear for the people of Bikini is that Jaramia Lavidicus will be recognized to be a great value and there is a tendency for medical men to keep people with good potential around. I would not be surprised to find the value of Jaramia recognized at Majuro and that he will be retained for use at the hospital. He would be a tremendous value on Bikini because of his knowledge and his willingness and his genuine personal concern for the people. I would hate to feel that a man like Jaramia, who appeared to me to be a great talent, would be retained at the big hospital area rather than out-island where he would be of direct value to the people. Although in a hospital situation he would be of enormous support for the attending physicians.

I came to the dispensary area on the first day and immediately recognized that some improvements had been made in the appearance of the place. An overhanging roof had been added to the end of the building. There had been some coral brought in and squared up for a waiting area outside. I thought "well, Jaramia has been inspired." When I got to the dispensary I was disappointed to find not Jaramia, but his brother Jendrik. Jendrik Lavidicus told me that he was relieving Jaramia while he attended a refresher course and that he, Jendrik, had been a medical aide for eight years at different places in the Marshall Islands. He said that he had been at Kili, Ebeye and had spent some time at Majuro in the hospital there. Jendrik was an entirely different type of person than his brother. Jendrick's capacity to understand English was masked by his inability to express himself in English. I think he probably understood far more of what I said than he indicated. I didn't feel that Jendrik cared very much to have me come and interrupt his dispensary routine although he did behave as nicely as could be expected if he resented my presence. I believed he was recovering from the flu and not quite himself.

In the dispensary I was disappointed to discover that there had been a doorway cut into the living quarters through which pets, children, grownups would go back and forth. There had been a bed at one end of the dispensary that was used as an examining area. That bed was no longer there and Jendrik said that it wasn't there when he arrived. Apparently, it had been taken out to be used by somebody else. I did note that there was a refrigerator which I didn't remember from before. The inside of the dispensary was in disarray. There were children sleeping on a mat on the floor. There were open storage boxes. One of the little girls was playing with some of the medical supplies in the box. A syringe was standing by its needle in a bottle of what appeared to be adrenalin. The medications and supplies were in shambles and there was no order to the storage. The cabinets couldn't be closed. It was pleasing to see the refrigerator and good to think that now there was a place to store perishable drugs. There were three or four thousand tetracycline tablets still in date and about one thousand tablets almost outdated. These were new and hadn't been apparent when I was there before. There were also two added aluminum boxes with sterile suture and dressing materials in packages and some sterile disposable syringes. These were just lying loose in the box which was open to the children's curosity. I was concerned at the lack of security control on every thing except the refrigerator which opened and closed with a lock and key. On getting the refrigerator opened I found no medication in it. There was a box of onions rotting in the bottom. It was a small refrigerator and was being used for cooling drinking water. I asked Jendrik to remove everything from the refrigerator and we put in all of the medication and antibiotics that were perishable or at least dated. It filled the major portion of the refrigerator.

I told Jendrik I would be back the next day and we would go over some of the medications and organize his shelves so that the first things in were the first things out. I suggested that the medications be broken up into some arrangement of injectables, oral medications, perishables. It was suggested that the ice box not be used for cooling drinking water. There were some trays for sterilizing things by liquids, but no sterilizing liquid. One suggestion would be a simple pressure cooker which could be used to sterilize instruments quite nicely even if it were used outside.

I admonished him quite gently: "well really you need to keep the medicine here" and so on - but I didn't seem to be very well received. I had told him I would be back tomorrow to help him clean things up but he showed little interest. So as I went back to my spot, unhappily, on the ship I thought of a number of suggestions for the dispensary. I might list them here. (1) There should be regular observed hours for dispensary care: (No fishing during dispensary hours) (2) The aide at the dispensary should recognize his responsibility to keep the place clean. (3) He should recognize the importance of an alphabetical or other orderly storage of drugs. (4) There should be an adequate record of patient care. Each patient should have at least a 6 x 8 individual card. (5) Syringes and needles should be kept in a special place along with the range of injectable drugs that do not require refrigeration. (6) All medication should be under lock and key in the cabinets.

(7) All hings with a shelf life should be kept in the refrigerator to isnsure their preservation. (8) The refrigerator should not be used for the family's cooling of drinking water and preservation of family food. (9) The family of the aide and others should not use the dispensary area as part of their home. (10) Children, and pets should not be permitted free access to the dispensary area. A half door-Dutch door type of arrangement would be helpful. One could open the top half of the door and let people communicate but control traffic and still have adequate ventilation. (11) The dispensary needs a wash basin. Antiseptic soap and water should be available for the aid to wash with. (12) Antiseptic solution should be available to sterilize instruments used for examining patients. Again the sterile instruments could be maintained sterile in little packs after sterilization in pressure cooker. (13) An examining table is essential. Perhaps a gynecological examination table would be appropriate.

I came back the second day to the dispensary to find it much transformed. Simulating at least some balance of order. The suitcase containers were closed, the drugs were lined up on the shelves, although with little relationship to each other, and there had been much work done to police up the area and clean out the dispensary itself.

The first day I saw a number of patients with Jendrik. There is nothing really remarkable to note except the aide's daughter. She had a cyst on the lateral aspect of her left knee a ganglion type cyst that seemed to be a dumbell shaped just under the collateral ligament or bulging through the collateral ligament on the lateral aspect of the knee. Someday it might require surgical attention, but at this time it was considered not to be an emergency.

On the 18th of June I went to the dispensary and there were no patients at all. I insisted that the outdated penicillin injectables be discarded. In the medical records there were about 63 people listed on Bikini, of whom 30 were away at the moment but would return. I found that were 6 people with asthma, 3 were diabetic and three had eye trouble. It seemed that eye problems are related to cataract surgery. I saw one old lady, I believe it was Jendrik's mother, who had cataract surgery and was complaining about not being able to see. She did have cataract corrective glasses which she couldn't wear because they were so heavy. There were 6 people with what was called bronchitus and 13 people that had had diarrhea the previous week. They were all okay at the moment because they had been treated with Kaolin and Kaopectate.

I noted that Jendrik considers diarrhea an indication for streptomycin by hypo. He said the reason he uses streptomycin was because of watery bowel movements. Streptomycin is a dangerous drug often causing deafness. Tetracyclene could be used. There may be something about the diarrhea that is unique on Bikini that he knows and I don't.

By way of suggestion, off the top of my head, a few immediate needs of the dispensary at Bikini are (1) an Scabacide, something that would work for crabs, lice and scabies - (Possibly a benzyl benzoate something relatively

easy to use and innocuous); (2) would be digitalis leaf, grain 1½ for the cardic case; (3) they need isopropyl alcohol to clean the hypos; (4) an examining table or a return of the bed that was there; (5) a curtain across the dispensary; (6) some insecticide, possibly just the kind that you could paint on would be alright rather than a spray. The spray would be less dangerous except that it would have to be taken care of so the children couldn't get it.

Several asthma cases have been treated with intravenous aminophylline which is good medication but should be used with great caution. There is a medication on the market which is the same epinephrine. It is called Susphrine by Cooper Laboratories and it seems to work much more rapidly than the regular adrenalin that we use to give. That might be thought of as a possibility to help obviate or lessen the use of aminophylline intravenously. Although aminophylline cannot completely be abandoned in the treatment of asthma, it can be given intramuscularly in the 2½ cc ampule as compared to the 20 cc ampule for the I.V. I am sure that when the regular aide comes back to the dispensary he will bring some new ideas with him from Majuro. Just to run through the headings, some things written down that I will send along, but I mention the "Marshallese Medical Cookbook" which is something to think about and I have a list of suggestions for the medical aides. Aide responsibilities would include regular dispensary hours, records on each patient, daily log for each patient, and the inventory and order supplies. He should be responsible for the security of the building, the premises and the supplies, and he should also be responsible for sending reports to the home office every six months. He of course should continue to be given periodic refresher trips.

The related suggestions about medication I have gone over already: The refrigerator storage, the alphabetical drug storage, and the use of oral medications wherever possible to replace injections. Perhaps having on the premises an up-to-date Merc Manual or Interns Manual or something on that order would be helpful to refresh his memory.

The sterilization procedures for the dispensary basically would be boiling, followed by antiseptic sterilizing liquid. Steam pressure could be used to sterilize packaging.

These things are easy to say and may be difficult to implement. They are offered in good innocent faith - hope they are of value.

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