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**SEXUALLY TRANSMITTED DISEASE (STD) UPDATE: A REVIEW
OF THE CDC 2010 STD TREATMENT GUIDELINES AND
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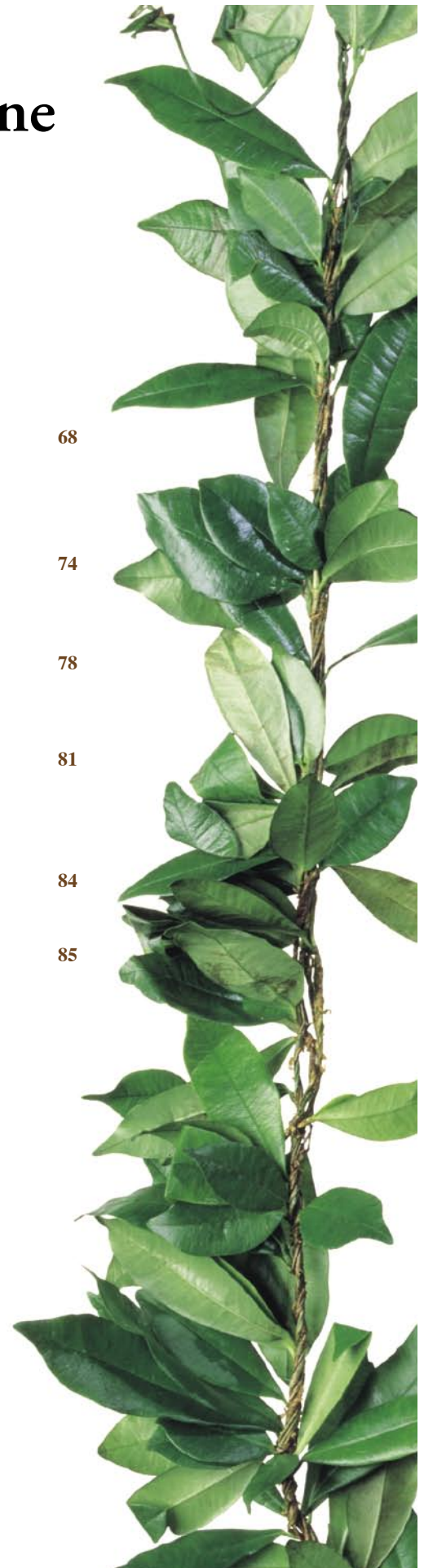
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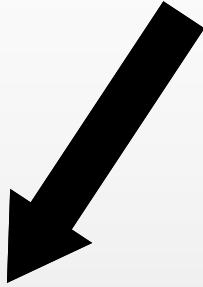
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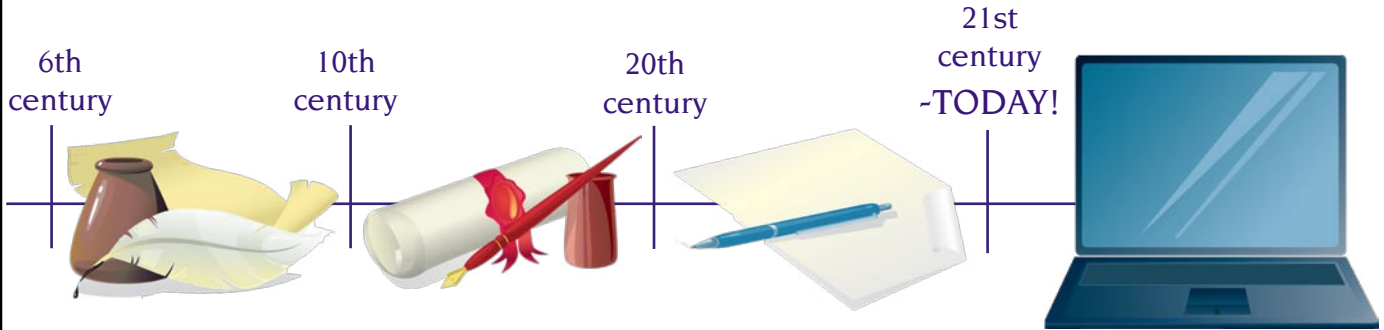
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Sexually Transmitted Disease (STD) Update: A Review of the CDC 2010 STD Treatment Guidelines and Epidemiologic Trends of Common STDs in Hawai'i

Alan R. Katz MD; Maria Veneranda C. Lee MS; and Glenn M. Wasserman MD

Abstract

The US Centers for Disease Control and Prevention recently updated its recommendations for treating sexually transmitted diseases (STDs). In this review we highlight new treatment recommendations for mitigating the increasing prevalence of antibiotic-resistant *Neisseria gonorrhoeae*, the emergence of azithromycin-resistant *Treponema pallidum*, and treatment options for bacterial vaginosis and venereal warts. We also cover epidemiologic trends for common STDs in Hawai'i.

Introduction

The US Centers for Disease Control and Prevention (CDC) serves as the nation's expert voice on public health and prevention recommendations.¹ Every four years, the CDC convenes a group of professionals with expertise in sexually transmitted diseases (STD). The outcome of this consultation is the publication of updated STD treatment guidelines which are meant to serve healthcare professionals as a source of clinical guidance for the diagnosis and treatment of STDs. The 2010 STD treatment guidelines contain important new information and recommendations.² The purpose of this paper is to highlight the updated recommendations and trends for treatment of common STDs in Hawai'i. Table 1 presents a summary of the recent changes and the rationale for the changes by disease; further discussion of current treatment recommendations and factors relevant to Hawai'i may be found under the respective disease sections of the text.

Gonorrhea

Antibiotic-resistant *Neisseria gonorrhoeae* continues to be a significant public health concern. High-level resistance to penicillin and tetracycline has been recognized since the 1970s.³ Fluoroquinolones, listed as a recommended therapeutic regimen for uncomplicated gonococcal infections in the CDC 2006 STD treatment guidelines,⁴ are now contraindicated due to the rapid spread of resistant isolates, which first appeared in the United States in Hawai'i.⁵ The first *N. gonorrhoeae* isolate in the US with high-level resistance to azithromycin was identified in Hawai'i in May 2011.⁶ Hawai'i was selected as a sentinel site for national gonococcal surveillance as it is recognized as a "port of import" for antimicrobial resistant strains entering the United States.⁷ The CDC currently notes that "third generation cephalosporins remain the sole class of antibiotics available which can be used effectively against *N. gonorrhoeae*."³ Unfortunately, isolates with reduced sensitivity to oral cephalosporins have begun to emerge⁸⁻¹¹ and a small number of isolates with reduced susceptibility to ceftriaxone have also been identified.¹² Three persons in Hawai'i, in 2003, were infected with a strain of multidrug resistant *N. gonorrhoeae*

that demonstrated decreased sensitivity to cefixime.¹¹ This was the first identification of this strain in the United States. Of note, the strain was epidemiologically linked to Japan. In 2009, the first multidrug resistant gonococcal isolate with resistance to ceftriaxone was identified in Japan.¹³ In Hawai'i, of 216 isolates of *N. gonorrhoeae* tested during 2010, 87.0% were susceptible to cefpodoxime (MIC \leq 0.5 μ g/ml) and 99.1% were susceptible to azithromycin (MIC \leq 2.0 μ g/ml). Ceftriaxone and cefixime were the only antibiotics for which isolates demonstrated 100% susceptibility (Hawai'i Department of Health [HDOH] unpublished data).

While screening recommendations remain unchanged, gonorrhea screening with culture should be considered for patients who traveled to or who have sex partners with travel histories to countries where antibiotic resistant *N. gonorrhoeae* is present.¹⁴ Increased numbers of antibiotic resistant *N. gonorrhoeae* have also been noted among men who have sex with men (MSM).

In order to mitigate emerging cephalosporin resistance, the CDC 2010 STD treatment guidelines recommend that all cases of gonorrhea (uncomplicated urethral, cervical, anal, and oropharyngeal) be treated with 250 mg ceftriaxone intramuscularly (IM) plus either one gram oral azithromycin or one week of oral doxycycline 100 mg twice a day. This reflects a doubling of the ceftriaxone dose from 125 mg recommended in the 2006 treatment guidelines.⁴ The use of an oral cephalosporin, cefixime (previously listed as an alternative treatment for uncomplicated infections not involving the oropharynx) is discouraged unless injectable ceftriaxone is "not an option."

The CDC 2006 STD treatment guidelines also recommended a two-drug approach (oral or injectable cephalosporin plus azithromycin or doxycycline) for patients diagnosed with gonorrhea in order to cover possible co-infection with *Chlamydia trachomatis*, unless chlamydia infection had been ruled out by nucleic acid amplification testing (NAAT).⁴ In contrast, the CDC 2010 STD treatment guidelines recommend a two-drug approach even if chlamydia has been ruled out.² A multidrug therapeutic approach to address the emergence of antimicrobial resistance is similar to the strategy currently used for the treatment of HIV/AIDS and tuberculosis. In cases where chlamydia has not yet been ruled out, this enables adequate therapeutic coverage for both infections.

In summary, mitigating the emergence of antibiotic resistant gonorrhea is the driving force behind three new gonorrhea treatment recommendations: (1) injectable ceftriaxone should be used rather than oral cefixime; (2) the injectable ceftriaxone dose should be doubled from 125 mg to 250 mg; and (3) one gram oral azithromycin or one week of oral doxycycline 100

Table 1. List of Key Updates in the CDC's 2010 STD Treatment Guidelines		
Disease	Specific Change or Update	Rationale
Gonorrhea	(1) Increase dose of ceftriaxone (to 250 mg); (2) avoid oral cephalosporins unless injectable cephalosporin unavailable; and (3) use of dual therapy (ceftriaxone plus azithromycin or doxycycline) whether or not chlamydia co-infection has been ruled out	To mitigate emergence of antimicrobial resistant <i>N. gonorrhoeae</i>
Syphilis	Do not substitute single dose azithromycin in patients with penicillin allergy	Due to emergence of azithromycin/macrolide resistant <i>T. pallidum</i>
Bacterial Vaginosis	Tinidazole listed as an alternative treatment regimen	Metronidazole is still the first line drug, but tinidazole is now an alternative regimen
Genital Warts	Topical sinecatechin 15% ointment listed as an alternative treatment regimen	An addition to the list of patient applied therapies. Listed as an alternative treatment option
Trichomoniasis	2 new rapid point-of-care tests cleared by the FDA	Provides improved sensitivity over usual form of diagnosis: visualization of motile trichomonads using light microscopy of vaginal secretions

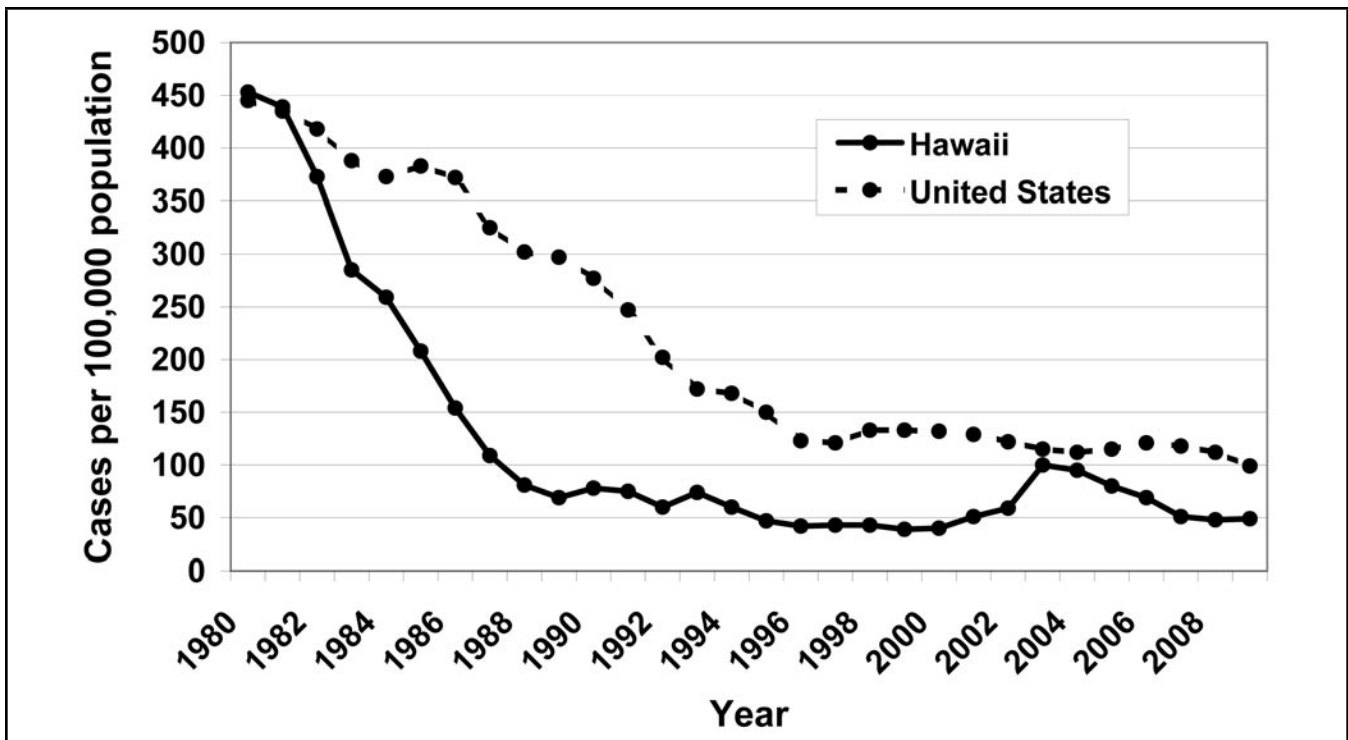


Figure 1. Gonorrhea rates per 100,000 population, United States and Hawai'i, 1980-2009.

mg twice a day should be administered with IM ceftriaxone whether or not chlamydia infection has been ruled out.¹⁵

The HDOH recommends that *N. gonorrhoeae* cultures, if available, be obtained prior to treatment from persons either treated presumptively or found to be positive for gonorrhea by NAAT. Patients with suspected treatment failures should have specimens obtained for culture and antimicrobial susceptibility testing and should be promptly reported to the HDOH STD/AIDS Prevention Branch. Contact information is provided under the section entitled “Additional resources” at the end of this paper. HDOH is available to assist in medical management of suspected treatment failures and partner management.

Sexual partners of patients with gonorrhea whose last contact

was within 60 days before onset of symptoms or diagnosis should be evaluated and treated. Due to the increased likelihood of reinfection, patients with gonorrhea should be retested three months after treatment.

Gonorrhea rates have been consistently lower in Hawai'i when compared to the country as a whole (Figure 1). This is in part due to an active and widescale culture-based screening program and partner notification activities for gonorrhea cases coordinated through the HDOH. The HDOH Gonorrhea Culture Screening Program, established in 1972, provides free gonorrhea culture-based screening to selected private and public sector providers including community health centers, hospital-based clinics, family planning clinics, and correctional facilities.

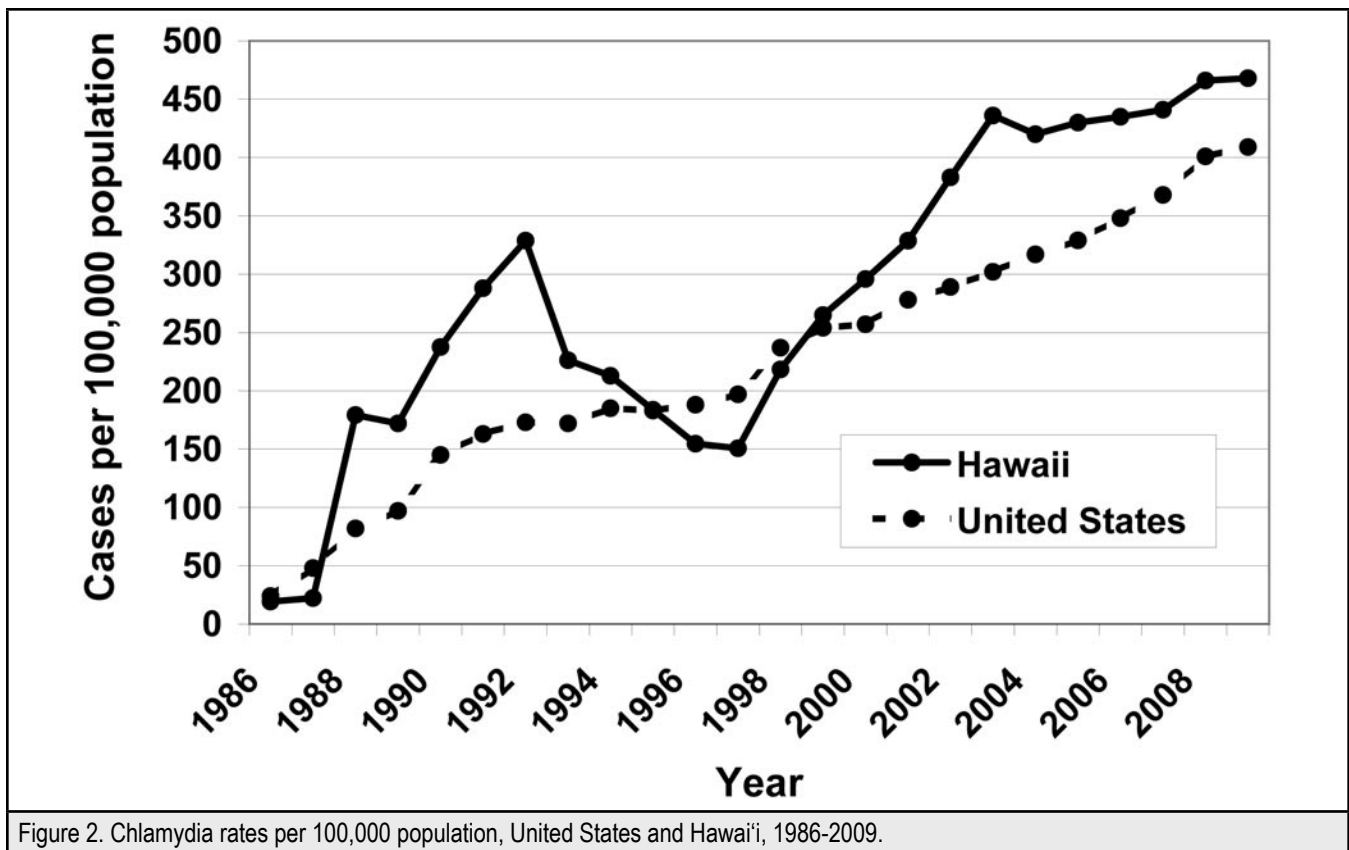


Figure 2. Chlamydia rates per 100,000 population, United States and Hawai'i, 1986-2009.

Chlamydia trachomatis

The 2010 treatment recommendations for *C. trachomatis* remain essentially unchanged: one gram of oral azithromycin or one week of oral doxycycline 100 mg twice a day are the recommended regimens. Screening recommendations are also unchanged. Chlamydia remains the number one reportable infectious disease in both the United States and Hawai'i, and the prevalence is highest among adolescents. Since most infected persons, up to 50% of men and 70% of women, are asymptomatic, detection relies on routine screening. The CDC recommends all sexually active women 25 years of age or younger be screened at least annually for chlamydia. Women 26 years of age and older with risk factors (eg, new or multiple partners) should also be screened annually. According to the latest Healthcare Effectiveness Data and Information Set (HEDIS) report card, Hawai'i had the highest screening rate among states in the United States at 57.8%.¹⁶ A recent survey of physicians in Hawai'i caring for 15-19 year old females was conducted to assess chlamydia screening practices and beliefs and identify potential barriers to screening. Obstetrician-gynecologists, community health center physicians, and physicians aware of reimbursement for screening were more likely to routinely screen these younger patients. Physicians in private practice settings and those who felt only "high risk" adolescents should be targeted for screening were less likely to routinely screen.¹⁷

Reported chlamydia rates in Hawai'i have been consistently higher than that of the United States (Figure 2). As most chla-

mydia cases are under 25 years of age and asymptomatic, case identification is dependent on screening. Hawai'i has been and remains at the forefront nationally with respect to chlamydia screening activity. Not only was Hawai'i one of the first states to initiate a chlamydia screening program,¹⁸ but as noted previously, Hawai'i has maintained an active screening program with the highest screening rate nationally. The HDOH Hawai'i Chlamydia Screening Program partners with private and public sector providers including community health centers, family planning providers, hospital-based clinics, college-based clinics, correctional facilities, and employer health care plans, to provide screening for women as part of the CDC Infertility Prevention Project.

Sexual partners of patients with chlamydia whose last contact was within 60 days preceding symptom onset or diagnosis should be referred for evaluation and treatment. Due to the increased likelihood of reinfection, it is recommended that patients with chlamydia be retested three months after treatment.

Syphilis

Although penicillin G, administered parenterally, is the preferred drug for treatment of all stages of syphilis, the CDC 2006 and 2010 STD treatment guidelines note that doxycycline 100 mg given orally twice a day for 14 days or tetracycline 500 mg given orally four times a day for 14 days could be considered as treatment options for primary or secondary syphilis in cases of penicillin allergy. Also noted in the 2006 guidelines was the

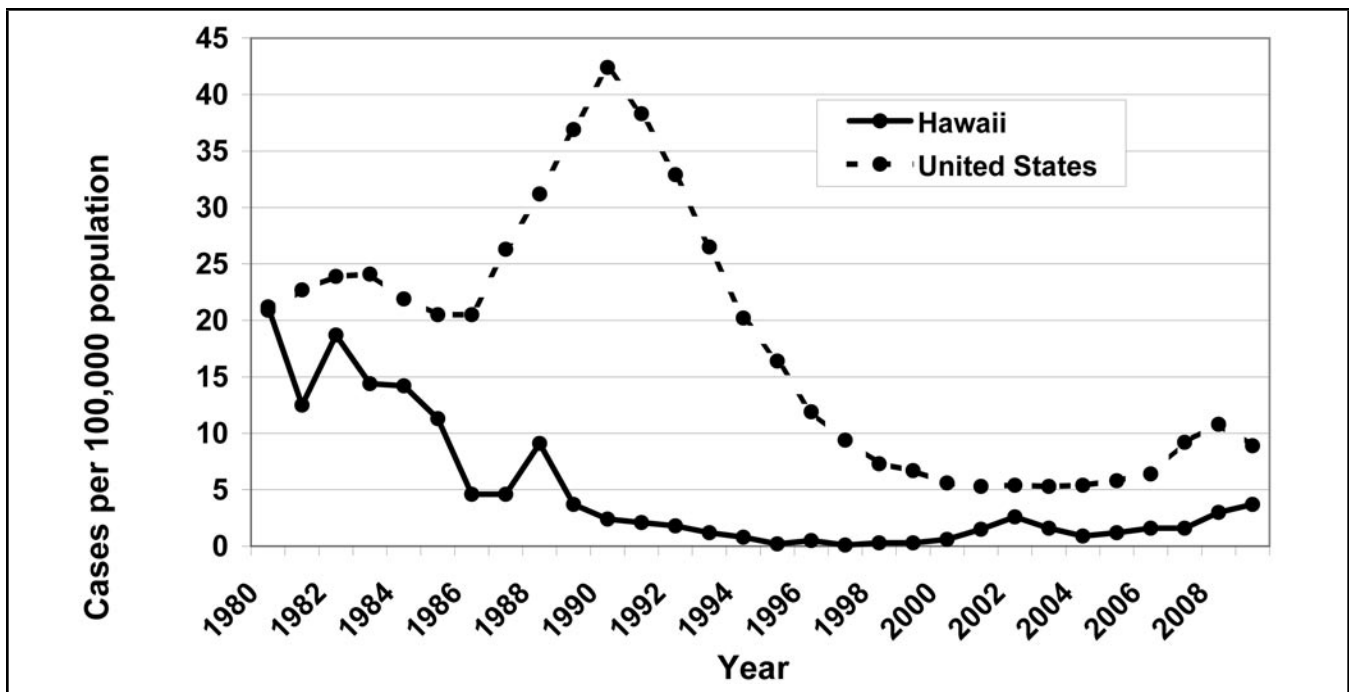


Figure 3. Early syphilis (primary, secondary, and early latent) rates per 100,000 population, United States and Hawai'i, 1980-2009.

use of a single two gm oral azithromycin dose as a treatment option for primary or secondary syphilis in cases of penicillin allergy. The updated 2010 guidelines warn against the use of single dose azithromycin due to the emergence of azithromycin-resistant strains of *T. pallidum*.²

Persons sexually exposed within 90 days to a partner diagnosed with primary, secondary, or early latent syphilis might be infected even if their serological test results are negative, hence the CDC recommends that they be evaluated clinically and serologically for syphilis, but that they be treated presumptively regardless of their test results.

Patients with syphilis should also be routinely tested for HIV infection as there is a well recognized risk of co-infection. Most syphilis cases in the United States and Hawai'i are in men, and Men who have Sex with Men (MSM) are over-represented for both infections. In Hawai'i, between 2001 and 2010, 87% of primary and secondary syphilis cases occurred in men, and 74% of male cases were MSM. In addition, 34% of MSM who were diagnosed with primary or secondary syphilis self-disclosed that they were also HIV-infected (HDOH unpublished data).

Syphilis rates in Hawai'i have consistently fallen below those reported nationally (Figure 3). Unfortunately rates in Hawai'i have gradually increased over the past decade. This has involved both MSM and heterosexuals, including an outbreak in 2007 among heterosexual Micronesians on Oahu.¹⁹

There has been a recent increase in the proportion of females diagnosed with primary and secondary syphilis in Hawai'i. From 2001-2007, women accounted for only 4% of all reported cases; from 2008-2010, approximately 20% of reported cases were women (HDOH unpublished data).

Bacterial Vaginosis

First line recommended treatment regimens remain the same: metronidazole, 500 mg twice a day given orally for seven days or metronidazole gel 0.75%, one applicatorful intravaginally at bedtime for seven days or clindamycin cream 2%, one applicatorful intravaginally at bedtime for seven days. A new alternative regimen is tinidazole two grams orally once daily for two days or tinidazole one gram orally once daily for five days.² Routine treatment of sexual partners is not recommended.

Trichomoniasis

The US Food and Drug Administration (FDA) recently cleared two rapid point-of-care tests for trichomoniasis: OSOM Trichomonas Rapid Test and Affirm VP III. The diagnosis is usually made by microscopic examination of a vaginal secretion "wet prep," but the reported sensitivity of this method is only 60%-70%. Point-of-care tests are more sensitive than the wet prep, but false positives may occur. Culture is also a possible diagnostic choice. FDA-cleared NAATs for gonorrhea and chlamydia have been modified for *T. vaginalis* detection and have excellent sensitivity and specificity.²⁰⁻²² The recommended treatment regimens remain unchanged at either two grams of oral metronidazole or tinidazole in a single dose. Sex partners of patients infected with *T. vaginalis* should also be treated with the same regimen.

Venereal Warts

In addition to the previously listed provider-administered therapies (cryotherapy, podophyllin resin, or trichloacetic acid) and patient-applied therapies (podofilox solution or gel

and imiquimod cream), a new patient-applied therapy has been added to the list of recommended regimens: sinecatechin 15% ointment, applied three times daily for up to 16 weeks. Sinecatechin, whose active ingredient, catechin, is extracted from green tea, is not noted to be safer or more effective, but is another option.²

The HPV vaccine is currently recommended for females ages 11-12 years (with catch up recommended for 13-26 year olds who have not been vaccinated). Two vaccines are currently cleared by the FDA: Gardasil (quadrivalent) and Cervarix (bivalent). Recommendations were extended to males on 25 October 2011 and are specifically for the quadrivalent vaccine. Males ages 11-12 years should be routinely vaccinated (with catch up recommended for 13-21 year olds who have not been vaccinated). Males aged 22-26 years may also be vaccinated.²³

General Comments

Factors identified by the CDC which increase one's risk for STD include having a past history of an STD, having unprotected sex, and having multiple partners or a partner who has multiple partners. The CDC also advises that, "patients seeking treatment or screening for a particular STD should be evaluated for all common STDs."²²

Expedited Partner Therapy

Expedited Partner Therapy (EPT) is treating partners of patients by providing the patient with either a prescription or medication to take to his/her partner without having a healthcare provider first examining the partner. The CDC has concluded that EPT is a useful option for partners of heterosexual men or women with gonorrhea or chlamydia. This is especially true when a partner is unlikely to seek evaluation and treatment on his/her own. No recommendations are in place for MSM. As of 10 August 2011, EPT is permissible in 30 states, potentially allowable in 13 states, and prohibited in 7 states.^{2,24} EPT is currently not legally sanctioned in Hawai'i, but is "potentially allowable" under Hawai'i Revised Statutes chapter 328, section 328-16. The American College of Obstetricians and Gynecologists (ACOG) recently endorsed EPT as a strategy to prevent STD re-infection, and in a recent news release stated: "The College encourages ob-gyns to push for legalization of expedited partner therapy in those states and jurisdictions where it's illegal or where the legal status of EPT is unclear or ambiguous."²⁵

Hawai'i State STD Reporting Requirements

Gonorrhea, chlamydia, syphilis, HIV/AIDS, pelvic inflammatory disease, and chancroid (a genital ulcerative STD which has, to date, not been identified in Hawai'i) are all notifiable diseases under Hawai'i Administrative Rules, Title 11, Chapter 156. The statute requires a written or phone report by the diagnosing clinician to the HDOH STD/AIDS Prevention Branch within three days of diagnosis. Disease intervention specialist services are available through HDOH to help identify and treat locatable sexual partners. This strives to decrease the probability of reinfection of the "index case" and further transmission to others.

Reporting Sources

Chlamydia and gonorrhea are the most common notifiable sexually transmitted diseases in Hawai'i and nationally. Most cases in Hawai'i are reported from private sector providers. In 2010, 60% of gonorrhea cases were reported from the private sector, 20% from military providers, and 20% from the HDOH Diamond Head STD Clinic.²⁶ In 2010, the HDOH Gonorrhea Culture Screening Program screened 13,275 persons and identified 216 cases. This accounted for 28% of all gonorrhea cases reported. Seventy-one percent of chlamydia cases were reported by private sector providers, 21% from the military, and 8% from the HDOH Diamond Head STD Clinic.²⁶ In 2010, the HDOH Hawai'i Chlamydia Screening Program screened 17,353 women and identified 1,118 cases. This accounted for 26% of all chlamydia cases identified in females and 19% of total cases reported.

Additional Resources

The HDOH STD/AIDS Prevention Branch maintains an updated website with links to the 2010 CDC STD treatment guidelines, STD screening recommendations, medical advisories, relevant peer reviewed journal articles, and information on the epidemiology of STDs in Hawai'i. The URL address is: <http://hawaii.gov/health/healthy-lifestyles/std-aids/index.html>. The HDOH operates a free, first-come-first-served STD clinic/HIV testing site located at the Diamond Head Health Center, 3627 Kilauea Avenue, Room 305, Honolulu, HI 96816, phone: 808-733-9281, fax: 808-733-9291. Clinic hours are Monday through Friday, 11 am to 4 pm. This is the same address for clinicians to submit written, phone, or fax reports for notifiable STDs and is the HDOH resource if one has STD/HIV questions, consultation requests, or desires additional information. The CDC also maintains an excellent website for STD related information. This includes national surveillance information, updated screening and treatment recommendations, and downloadable, simply written, patient information fact sheets for individual STDs. The URL address is: <http://www.cdc.gov/std>. Additional information may also be accessed through the California STD/HIV Prevention Training Center (CPTC). CPTC is part of a national CDC-funded training network "designed to enhance the STD/HIV knowledge and skills of medical, health, and community professionals." Their URL address is: <http://www.stdhivtraining.org>.

Disclosure Statement

The authors have no financial relationships with any of the products discussed. In addition, none of the authors identify any potential conflicts of interest.

Authors' Affiliation:

- Department of Public Health Sciences, John A. Burns School of Medicine, University of Hawai'i (ARK)
- STD/AIDS Prevention Branch, Communicable Disease Division, Hawai'i State Department of Health (ARK, MVCL)
- Communicable Disease Division, Hawai'i State Department of Health (GMW)

Correspondence to:

Alan R. Katz MD; Department of Public Health Sciences, Biomedical Sciences Building, Room D104M, 1960 East-West Road, Honolulu, HI 96822; Ph: (808) 956-5741; Email: katz@hawaii.edu

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Subcutaneous Emphysema, Pneumopericardium, Pneumomediastinum and Pneumoretroperitoneum Secondary to Sigmoid Perforation: A Case Report

Daniel Murariu MD, MPH; Brent K. Tatsuno BS; Michael K. Tom BS; Jae S. You BA; and Gregorio Maldini MD

Abstract

A 50-year-old woman presented with chronic epigastric abdominal pain and constipation. She underwent diagnostic upper and lower endoscopy for further evaluation. Several hours following the procedure, she developed chest and subcutaneous emphysema of her upper chest, neck, and face. A chest X-ray demonstrated marked subcutaneous emphysema, pneumopericardium, and pneumomediastinum. A CT scan revealed a small leak at the rectosigmoid junction. Because the patient did not have peritoneal signs, she was treated conservatively and discharged on hospital day seven. The complications of both esophagogastroduodenoscopy, and colonoscopy are discussed, with an emphasis on perforations.

Keywords

pneumopericardium, pneumomediastinum, subcutaneous emphysema, pneumoretroperitoneum

Introduction

Esophagogastroduodenoscopy (EGD) and colonoscopy are commonly utilized procedures in the evaluation of gastrointestinal disease. According to a study by the Center for Disease Control and Prevention (CDC), physicians performed approximately 14.2 million colonoscopies and 2.8 million sigmoidoscopies in the United States in 2002.¹ While both are deemed relatively safe, complications include abdominal pain and bloating, nausea, diarrhea, hemorrhage, and perforation. We present a rare case report following diagnostic colonoscopy resulting in extraperitoneal leak, causing marked upper body subcutaneous emphysema, pneumopericardium, pneumomediastinum and pneumoretroperitoneum.

Case Report

A 50-year-old woman with intermittent bouts of mid-epigastric pain for the previous five years, on occasion associated with nausea and vomiting, became worse in the last two weeks. She reported chronic constipation with as few as one bowel movement per week. The patient denied bright red blood, melena, fever, chills, nausea, vomiting, or any other constitutional symptoms. Her medical history included migraine headaches, allergic rhinitis, hyperlipidemia, tubal ligation, and negative EGD two years before. Her symptoms were somewhat relieved by laxatives. The rest of the work-up was unremarkable and she was scheduled for upper endoscopy and colonoscopy on the same day.

Both the EGD and colonoscopy were diagnostically negative without any biopsies taken and no acute complications were noted during and immediately after the procedure. Several hours later, the patient developed chest pain and presented to the emergency department where she had evidence of subcu-

taneous emphysema of her upper chest, neck, and face. The patient was afebrile but tachycardic, and had leukocytosis up to 18,300 with 11% bands. The patient subsequently developed abdominal discomfort without obvious peritoneal signs, chest radiograph revealed marked subcutaneous emphysema, pneumopericardium, and pneumomediastinum (Figure 1).

CT scan of the chest, abdomen, and pelvis showed extensive emphysema in the neck, mediastinum, and retroperitoneum, and possible intraperitoneal air (Figure 2). Cardiothoracic and general surgeons were consulted. CT esophagram scan was performed as the patient could not tolerate fluoroscopy, but revealed no leak. The patient was admitted, started on broad-spectrum antibiotics; because she did not have peritoneal signs she was followed clinically with serial examinations. A repeat CT scan of the chest, abdomen, and pelvis was performed the next day showing a small contrast leak into the mesentery at the rectosigmoid junction (Figure 3). The patient remained clinically stable and afebrile with the leukocytosis improving over the next three days. Clear liquids were started on hospital day 5 and she was discharged on full liquids 2 days later. On follow up, the patient reported no problems and the marked facial, neck, and upper chest emphysema had completely resolved.

Discussion

Although perforation is a relatively rare complication following EGD or colonoscopy, it is the most worrisome. Post-EGD perforations occur between 0.03%-0.1% of the time,^{2,3} while post-colonoscopy perforations occur at a rate of 0.4%-1.9%⁴ with a mortality rate of 0.02%-0.15%.⁵ Perforations occur more commonly with therapeutic than diagnostic endoscopy.⁵⁻⁶ Several factors have been found to increase the risk of complications, including concurrent diverticulitis, inflammatory bowel disease, tumors, old age, diabetes, and cardiovascular disease.⁷⁻⁸ Patients with intraperitoneal perforations typically present within 12 hours of the procedure with pain, fever, abdominal distension, nausea and vomiting, tachycardia, hypotension, and peritoneal signs.^{6,9}

Subcutaneous emphysema following colonoscopy can be palpated as crepitus and is a common manifestation of extraperitoneal air traveling along the track of the mesentery. In these rare situations described only in case reports, radiography can reveal collections of extraperitoneal air, such as pneumoperitoneum, pneumoretroperitoneum, pneumopericardium, pneumomediastinum, and pneumothorax.^{4,5} Extraperitoneal perforations without peritoneal signs can be managed conservatively with nasogastric suction, nothing by mouth, bowel

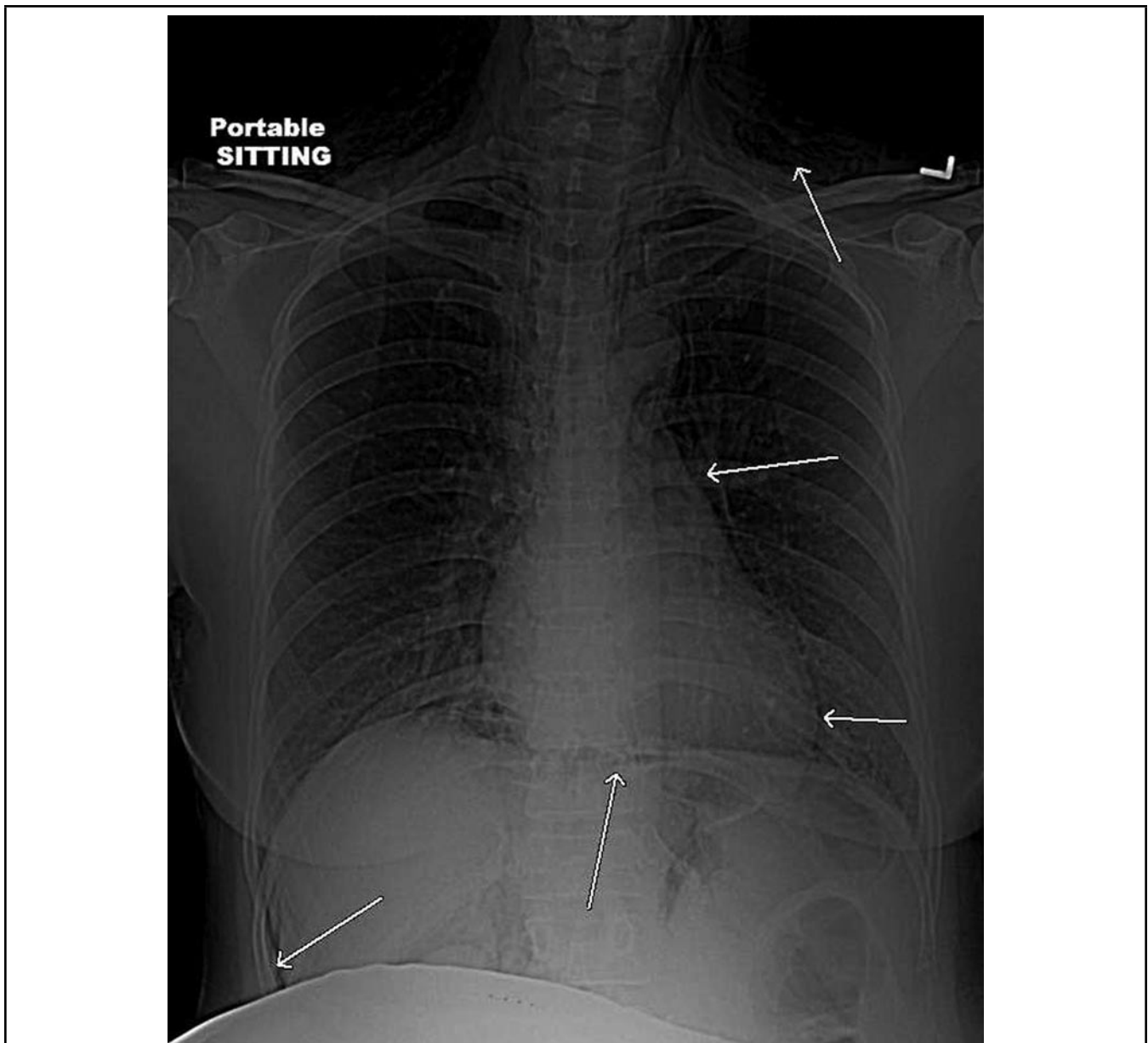


Figure 1. Chest radiograph showing marked subcutaneous emphysema, pneumopericardium and pneumomediastinum.

rest, and empiric antibiotics, while larger perforations (usually with intraperitoneal air as well) require primary closure of the bowel perforation with or without bowel segment resection.⁹ Endoscopic clipping of the perforation has also been described.⁴ Regardless of conservative or surgical management, extraperitoneal air commonly resolves within 72 hours.⁵ Because this patient did not have peritoneal signs, a conservative approach was taken and followed with serial abdominal examinations. This approach shows the importance of clinical judgment and surgeon experience in deciding whether to operate or treat conservatively.

Upper and lower endoscopy is often used in the evaluation of gastrointestinal complaints and, although safe, perforations do occur. Rarely, the perforation is extraperitoneal leading to subcutaneous emphysema and other collections of air, such as pneumopericardium, pneumomediastinum, pneumoperitoneum and pneumoretroperitoneum. Management depends on the size of the perforation as well as systemic involvement. Conservative treatment may be utilized in patients with contained perforations and no peritoneal signs. Extraperitoneal air is commonly reabsorbed within 72 hours with the remainder of recovery focused on regaining bowel function.



Figures 2. Coronal view of CT chest and abdomen showing extensive emphysema in the neck, mediastinum and retroperitoneum, and possible intraperitoneal air.



Figure 3. Sagittal view of CT of the pelvis showing a small leak into the mesentery at the rectosigmoid junction.

Disclosure Statement

None of the authors identify any conflict of interest.

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Authors' Affiliation:

- Department of Surgery, John A. Burns School of Medicine, University of Hawai'i

Correspondence to:

Daniel Murariu MD, MPH
Department of Surgery, John A. Burns School of Medicine, University of Hawai'i
1356 Lusitana St., 6th Floor
Honolulu, HI 96813
Ph: (808) 722-1114
Email: dmurariu@yahoo.com

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PUBLIC HEALTH HOTLINE

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Advancing Public Health Today and for Future Generations

Loretta J. Fuddy ACSW, MPH; Director, Hawai'i Department of Health, State of Hawai'i

The Hawai'i State Department of Health (DOH) is a large and multifaceted agency with a broad mandate to monitor, protect, and enhance the health and environment of our state. Our areas of responsibility include behavioral health, environmental health, health promotion and wellness, disease outbreak and control, oral health, infectious disease management, and primary prevention for people of all ages, ethnicities, and communities on every island. At the start of a new administration, the most common questions asked are: What is your vision? What are your priorities for the Department of Health? How do you leverage your resources to improve health status? I am pleased to announce our departmental strategic plan, *Foundations for Healthy Generations*, which will align our efforts to address five priority areas: health equity, disease prevention and health promotion, public health emergency preparedness, clean and sustainable environments, and quality and service excellence.

Initiatives and objectives outlined in the plan serve as the platform to measure progress and improvements in the health status of the people of Hawai'i. The priorities are responsive to the current health challenges of our state and nation, based upon a public health theory of change, and grounded in evidenced-based practice.

Health Equity

Health Equity is central to a quality and high performing health care system. Vulnerable populations, such as those lacking in health care coverage, low-income families, racial and ethnic minorities, and rural and isolated communities are at an ever increasing risk for poorer health outcomes than the rest of society.¹ The World Health Organization states the aim of establishing health equity is to reduce or eliminate health disparities that result from "factors which are considered to be avoidable



Figure

or unfair.”² Inequities are often systematic in the health care system or predicated upon the social determinants of health.³ The distribution of disease can often be traced back to injustices based on race, class, gender, religion, immigration, sexual orientation, and stigma.⁴ Nationally, and in Hawai‘i, there are significant disparities in key health indicators: infant mortality, life expectancy, and rates of preventable disease. For example, Hawaiian mothers have higher rates of unintended pregnancies, late prenatal care, and poor birth outcomes.⁵ Native Hawaiians are five times more likely to experience diabetes between the ages of 19-35, and have the highest cancer mortality rates.⁶ The Department of Health will provide the leadership at the governmental level to ensure that health equity and the social determinants of health are addressed at policy and programmatic levels.

Disease Prevention and Health Promotion

Hawai‘i and the nation have seen health care costs increase dramatically over time. The United States spends more on healthcare than any other country, mostly to treat preventable and non-communicable diseases such as cardiovascular disease, hypertension, and diabetes. Despite this enormous expenditure, we continue to see unprecedented rates of chronic disease in children and adults. For the first time in over 200 years, today’s children may expect a shorter life span than their parents.⁷

Current societal norms and practices encourage lifestyle and behavioral choices that often result in preventable conditions such as obesity and cancer.

Financial, housing, and interpersonal stress often influence unhealthy habits like smoking, alcohol and substance abuse, and passive forms of entertainment. Our environment, both natural and built, affects our choices for physical activity and can worsen rates of diseases such as asthma and cancer. Unless significant societal changes are made, chronic disease will become an unsustainable burden for future generations. To assure the health of future generations we must take a concerted and systemic approach to address the myriad factors which influence health behaviors at a societal level.

Public Health Emergency Preparedness

Events like Hurricane Katrina, September 11th and the H1N1 influenza outbreak have redefined public health and the need to improve departmental response to natural and man-made disasters. While we have made significant investments to upgrade our capacity to prevent disease and respond to public health emergencies, resources are lower than the projected need.⁸ With Hawai‘i being one of the most isolated places in the world, it is especially critical that our department forge collaborative relationships with the state’s health care system and community volunteers to assure timely response at the county and state levels. We need to continue to increase our departmental capacity to prepare for all-hazards emergencies and ensure that tools are in place for a robust public health response across the state, especially as new threats emerge. Critical to this effort is a well-trained workforce, biosurveil-

lance infrastructure, epidemiological expertise, improved public health laboratory capacity, and maintaining a volunteer Medical Reserve Corps. We will continue to enhance our technology to improve emergency communication between our department, hospitals, the State Civil Defense, county level response teams, and other responders. Being prepared saves lives and protects the health of our community as well as that of the emergency responders. With a focus on emergency preparedness, response, and recovery, the department is committed to increase our capacity to address a wide spectrum of threats and to preserve and protect our families and our environment.

Clean and Sustainable Environments

Clean air, soil, water, and a safe source of food are fundamental to assuring the health of communities. In addition, Hawai‘i is renowned for our pristine environment, clean air and clear waters. Our way of life, economic sustainability and public health all depend on preserving these gifts of nature. *Foundations for Healthy Generations* will emphasize the issues of environmental justice; no community because of its social, cultural, or economic status should bear a greater burden of impacts from regulated industries or facilities. While protecting our air, land, and water from harmful pollutants, we will also focus on improving our business processes by implementing electronic permitting to promote both environmental and economic sustainability. If harmful oil or chemicals are spilled or discovered, we will be ready to immediately respond and oversee their appropriate and immediate clean up. Consolidation of the vector control and food safety programs will increase our ability to prevent food-borne and vector-borne illness. In light of global threats ranging from a tsunami’s destruction of nuclear facilities to international terrorism, our radiological response team will remain on alert for any harmful contamination. Among all the complex public health challenges that our department faces, assuring a clean and sustainable environment remains an important pillar built on a solid foundation of service and the sacred trust of our people.

Quality and Service Excellence

Government is often viewed as inefficient, unresponsive, and costly. *Foundations for Healthy Generations* answers Governor Abercrombie’s call to transform government with strategies that maximize tax payer return on investment, customer satisfaction, and public health impact.

Our Performance Improvement Initiative will identify and integrate the best practices of management science into public administration, and establish a business culture committed to the principles of Continuous Quality Improvement and customer service. We will improve government transparency and public confidence by implementing online performance report cards on our public health activities and business operations. This initiative will culminate with our application for full national accreditation by the Public Health Accreditation Board, a credential that will distinguish the Hawai‘i Department of Health as a center of public health excellence and leadership.

Foundations for Healthy Generations will drive the public health system to achieve fundamental, cost-effective, and sustainable improvements in health status that will improve outcomes and reduce long-term cost. Our strategic plan harnesses the department's expertise in behavioral health, environmental health, and public health to advance proven and promising practices such as promotion of healthy life choices, family and care-giver support, strengthening the safety net, and assisting individual and family decision-making. Through this initiative we aspire to influence key drivers of social determinants of health such as tax policy, built and natural environments, economic development, education and human services, housing and transportation, and natural resources.

Foundations for Healthy Generations connects with people across the lifespan, starting with preconception and perinatal health, through childhood and adolescence, and on to adulthood and the senior years with approaches appropriate to the unique and rich diversity of populations in Hawai'i.

Over the next few months you will learn more about each of the five pillars of the department's *Foundations for Healthy Generations*. The strategic plan is available online at <http://hawaii.gov/doh/strategicplan>. We will seek your guidance and expertise as we implement the plan, because reaching the department's vision of "Healthy People, Healthy Communities and Healthy Islands" can only be achieved through strategic

partnerships and leveraging our resources. Our future descendants deserve nothing less.

Together with deliberate thought and action, let us create a legacy of sustainable islands, with lifelong health and wellness for generations to come. 'A'ohē hana nui ka alu'ia, no task is too big when done together by all.⁹

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Transition to Clerkship Week at the John A. Burns School of Medicine

Damon H. Sakai MD; Sheri F.T. Fong MD, PhD; Royce T. Shimamoto MD; Jill S.M. Omori MD; and Laurie M. Tam MD; Office of Medical Education, John A. Burns School of Medicine

The transition from preclinical classroom learning to clerkship education is a major challenge for third-year medical students in US-based medical schools.¹ To ease this transition, many schools, including John A. Burns School of Medicine (JABSOM), have incorporated clinical skills sessions and preceptorships in the pre-clerkship years to improve medical student preparation for and comfort with the start of third year.² However, these pre-clerkship experiences do not completely prepare the students for the new roles, responsibilities and skills needed when immersed in a clinical environment as members of a team directly caring for patients. They must master skills learned during their pre-clerkship years that include performing history and physical examinations, presenting patients, and writing progress notes. In addition, they must cope with the stress inherent in assuming new responsibilities and the emotions that come with caring for patients in both the ambulatory care and inpatient hospital settings. To address these issues, in 2009, JABSOM replaced its one-day clerkship orientation with a Transition to Clerkship Week (TCW) at the start of their third year. The following are current goals, major topics, student feedback, and future direction for this curriculum.

The goals of the TCW are to provide students:

- An understanding of their roles and responsibilities, and the school's policies and procedures with respect to clerkship.
- Active, realistic practice of the skills required at both ambulatory and inpatient sites.
- An understanding of workplace rules, safety precautions, and professionalism expectations.
- A centralized delivery of pre-clerkship requirements (TB testing, CPR/BLS certification, electronic medical record training, etc)

All six clinical departments involved in the third-year clerkships contribute to the one-week course. Students meet all the Clerkship Directors and Coordinators, who will later present a detailed orientation to the students at the start of their respective clerkships. An example of the 2011 TCW Schedule (shown in Table 1) includes a review of the adult, child, and infant physical exam; practice with injections, other procedural skills and presenting patients; instruction on writing progress notes and universal precautions; information on student well-being, academic policies, and grading; and mentorship sessions with

fourth-year students. The schedule has evolved since 2009 based on the student feedback, and includes more clinical skills, time with the fourth-year students, and opportunities to visit all clerkship stations.

Workplace learning theory suggests that students are prepared best by practicing "authentic" tasks that accurately simulate the skills they would be asked to exhibit during their clerkships.^{2,3} This theory is incorporated into the TCW Clinical Experience Sessions. For example, following a session on presenting patients, students are asked to perform a history and physical examination, and "round" on hi-fidelity manikins programmed to display key physical findings as if the students were seeing their own patients in the hospital. The patients are modeled after the patients in their health care problems (HCP) studied during their pre-clerkship problem-based learning (PBL) sessions. This process adds a unique continuity to the curriculum. Students must find time to see and assess their patients in between structured educational activities. At a designated time, students are asked to meet "at the bedside" with a faculty member to whom they present their patient, simulating bedside or "attending" rounds. Faculty members question the students, as would occur on wards, and provide feedback to the students on their presentation and responses. In another exercise, students interview fellow students playing the role of ambulatory patients with common problems such as a sore throat, hypertension, and low back pain. After gathering their information, the students present their ambulatory care case to a faculty member, as they would do during clerkships. Faculty members provide feedback on their presentation and guide them through clinical reasoning to formulate an assessment and plan for their patient.

Selected feedback collected from students about the TCW is summarized in Table 2. In general, students appreciated experiencing mock clinical scenarios, practicing clinical skills, completing clerkship requirements, and having fourth-year students as mentors.

Student comments about strengths of TCW include these representative statements:

- "It helps (me) realize what the 3rd year will be like and how to prepare for the next week. It acted as a good transition period."
- "Talking to MS4s helped ease a lot of anxiety. Practicing presentations was helpful."

Day	Morning	Afternoon
Monday	Orientation (Large Group) - Welcome and Overview - First Day of 3rd Year Video - Meet Clerkship Directors & Coordinators - Introduction to T-Res Didactics (Large Group) - Your Role in Patient Care - Injection Workshop and Needlestick Precaution	Orientation (Large Group) - Introduction to Ambulatory Clinic Didactics (Large Group) - History and physical (H&Ps) and subjective-objective-assessment-plan (SOAP) notes - Oral Case Presentations - Things You Need to Know (includes school policies, practices and grading, universal precautions student responsibilities, student well-being and professionalism)
Tuesday	Clerkship Requirements (Small Group Rotations) - Respirator Mask Fitting - CPR Certification	Orientation (Small Group Rotations) - Block 1 Orientation Clinical Experience (Small Group Rotations) - Ambulatory Care Clinic
Wednesday	Orientation (Large Group) - Hawai'i Pacific Health	Didactics (Large Group) - T-Res - Safety Precautions - Gowning and Gloving
Thursday	Clerkship Requirements (Small Group Rotations) - CareLink Training	Clinical Experience (Small Group Rotations) - Pre-Rounds - Clinical Skills Stations
Friday	Orientation (Large Group) - Tripler Hospital Mentorship from Fourth Year Students (Large Group) - First Aid for the JABSOM Third Year	Mentorship from Fourth Year Students - MS4 Clerkship Stations (Small Group Rotations through 6 stations) - MS4 Clerkship Panel (Large Group) Wrap-Up

	Statement	(4) Strongly Agree	(3) Somewhat Agree	(2) Somewhat Disagree	(1) Strongly Disagree	Mean	SD
1	The goals and objectives were met.	40 (74%)	14	0	0	3.7	0.4
2	Overall content delivered helped in my preparation for third year.	37 (69%)	14	1	1	3.6	0.6
3	The Injection Workshop and Needlestick Precautions were useful.	45 (83%)	9	0	0	3.8	0.4
4	The H&Ps and SOAP Notes Presentation was useful.	48 (89%)	7	0	0	3.9	0.3
5	The Ambulatory Clinic session was helpful in allowing me to practice presenting cases in this setting.	39 (72%)	14	2	0	3.7	0.5
6	The Clinical Skills sessions were helpful for reviewing and practicing physical exams for different patient settings.	34 (63%)	17	3	0	3.6	0.6
7	The MS Clerkship Panel was helpful.	42 (78%)	11	1	1	3.7	0.6

- “Ambulatory clinic helped ease tension about 3rd year.”
- “H&P and SOAP notes orientations, practice presentations to attendings, clinical skills rotations, CPR re-certifications, 4th (year) representatives— Very helpful, really eased my anxiety about 3rd (year).”
- “It did a good job answering questions about third year.”

Of the 126 medical schools in the United States, 68 schools responded by survey to having a Transition to Clerkship Course.¹ The length of these courses ranged from 7 hours (1 day) to 144 hours (18 days). Most courses covered topics such as expectations for medical students, professionalism, stress management,

and procedural skills. Lectures and didactic sessions made up the majority of the sessions. Many courses also incorporated hands-on activities. Providing an opportunity for transitioning students to interact with senior students was also commonly incorporated.

Student feedback about the JABSOM's TCW suggests the course has been successful in meeting its objectives. Committees within the Office of Medical Education also regularly review TCW. Implemented through this review process are innovative and interactive learning activities that will meet the needs of our hospitals, clerkship directors, and students for today and into the future. Forthcoming plans include simulations

designed to help students cope with some of the emotional trauma associated with clinical medicine, such as the death of a patient and talking with the family. Plans are in place to have students create a well-being plan in anticipation of the stress of their clerkship year, and to provide more curriculum time on professionalism, including a session on giving, receiving, and responding to feedback on professionalism issues. Clerkship course directors hope to provide more activities that take place in clerkship hospitals and clinics to enhance enculturation into these settings. Pre-clerkship course directors plan to provide more experience with skills necessary in the clerkships, such as case presentations, problem lists, and the subjective-objective-assessment-plan (SOAP) format, using the HCPs in PBL. Finally, since the TCW takes place at the start of the third year, many of the themes introduced will be reinforced longitudinally. An issue common to most medical schools is the reported erosion in empathy and the start of cynicism in the third year.⁴ Beginning in the TCW, sessions throughout the third and fourth year that combine reflection on clinical experiences as well as the study of arts and humanities may help to mitigate this erosion.

JABSOM's Transition to Clerkship Week (TCW) is a critical addition to the curriculum that has been successful in providing students with an understanding of their responsibilities and faculty expectations, and opportunity to practice skills necessary as members of a patient care team. Future goals include opportunity to practice skills in real ambulatory and inpatient care settings, and simulated experiences with patient death and talking with family members, so that JABSOM continues to produce skilled, compassionate physicians for Hawai'i.

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THE PLACE TO PASS ON CURVES YOU KNOW IS ONLY AT THE BEAUTY SHOW.

In Wyoming a driver was injured when his truck slid off an icy road. Emergency personnel secured his head, neck, and spine and brought him to the hospital emergency room with a possible neck fracture. The ED physician obtained imaging studies of head, thoracic spine, and facial bones. He did not order x-rays of the neck. The patient was discharged without a neck brace and without a careful physical examination. Four days later he returned to the hospital complaining of neck and shoulder pain. Further evaluation revealed a fractured cervical spine that required emergency spinal fusion. He sustained permanent C5 nerve root damage, and will need additional surgeries. The jury found the doctor and hospital negligent and awarded \$7 million to the plaintiff plus \$2 million to his wife for loss of consortium. The damages far exceeded the previous Wyoming maximum judgment of \$1.5 million. This case describes why defensive medicine is frequently overdone in emergency departments.

SOME DISEASES JUST WON'T GO AWAY. FORGET ANTIBIOTICS, IT'S A RETURN TO FRESH MOUNTAIN AIR.

A frightening report came from Mumbai, India, about a new strain of tuberculosis. In December, Zarir Udhwadia, a leading private pulmonologist in Mumbai, reported the first four cases of a Tbc strain totally resistant to all current treatment. He has now tested a total of twelve patients at Mumbai's Hinduja National Hospital who are resistant. Three have already died. While this is but a handful of reports, Dr. Soumya Swaminathan, senior deputy director of the National Institute for Research in Tuberculosis, states, "It's just the tip of the iceberg." India has made giant strides in fighting Tbc, reducing the number of deaths to 280,000 in 2010 from 500,000 in 1997. The treatment regimen requires a combination of powerful medicines taken three times a week over a six-month period. Too often symptoms subside after a month of therapy and patients discontinue the meds because of side effects. Partial treatment encourages resistant strains that become untreatable.

CHILDREN KNOW WHAT THEY WANT. THEY WANT OUT OF CHILDHOOD.

In California, the law previously required children up to the age of 6 years or 60 pounds to use a child's car seat. Change was instituted as of January 1, 2012. The new statute requires a car seat up to age 8 or 4 feet 9 inches tall. Sorry, Kids! It's back to the boosters, preferably in the back seat, height and weight, not age, controlling factors. Car seat guidelines come from the American Academy of Pediatrics, and it's a boon for the seat makers. Violation by the driver could bring a fine of \$475 and one point on a driving record.

HUMAN BEINGS, THE MOSQUITO'S FAVORITE BLOOD DONOR.

Dengue (Break-bone fever), the viral mosquito-borne disease has been active in Hawai'i in the past. Typical infections produce fever, headache, rash, and weakness with severe muscle and joint pain. Though no current cases have been reported, traffic moving into the islands from the western Pacific keeps us at risk. A Singapore research team has provided clinical trials on 1,200 volunteers ages 2 to 45 randomly assigned to receive three doses of vaccine over a year. A control group received inert injections. The scientists found signs of immunity against 3 of the 4 dengue subtypes in 87 percent of vaccine recipients tested and against all 4 subtypes in 67 percent. Thirteen clinical trials are underway at other venues testing various dengue vaccines.

NOT TONIGHT, BABE. I'M REALLY TIRED.

As if new fathers needed to be told, the National Academy of Sciences has found that tending to a newborn will reduce circulating testosterone. Decreased libido, aggression, and musculature are affected with chores like changing diapers, washing baby bottles, helping with housework, and midnight feedings. Scientists found in a study of 624 Filipino men age 21 years, their testosterone levels dropped by 26% in the morning and plummeted 34% by bedtime from norms recorded pre-delivery. Harvard biologist Peter Ellison, who was not involved in the study, believes the results support the idea that testosterone levels respond to a man's behavior and cues from his cultural environment. Moreover, there is that spousal declarative, "Don't touch me!"

HOT CORNBREAD AND BLACK-EYED PEAS, THAT'S WHAT I LIKE ABOUT THE SOUTH.

A prospective cohort study of exfoliation glaucoma was reported in Ophthalmology, the journal of the American Academy of Ophthalmology. from 1980 through 2008, 78,950 female and 41,200 male health professionals, age 40 years or older, reported undergoing medical eye examinations. Increasing age and female gender was a significantly increased risk. No predisposition by ancestry or iris color emerged as a factor. The most interesting finding was that lifetime residence in the middle geographic tier and in the southern geographic tier was associated with markedly reduced risk of exfoliation glaucoma. One more reason lucky you live Hawai'i.

QUICKER AND SICKER! ROUND'EM UP! HEAD 'EM OUT!

In data collected from 17 countries regarding 30-day readmission rates following myocardial infarction, variations were 7.7% to 14.5%, with a median of 9.9%. United States had the highest rate of returns at 14.5% and also had the shortest primary hospital stay of 3 days.

BEER NOT ONLY MAKES YOU TALKATIVE, IT MAKES YOU WALKATIVE.

In Queenstown, New Zealand, an agricultural show announced a contest for best home-brewed beer. A 36-year-old woman named Rachel Beer showed up, but was told the contest was "blokes only," and was sent away. She asked, "Who cares if I have or haven't got balls?" An official from the Human Rights Commission said, "On the face of it, the competition may be breaching the human rights act." Ms. Beer refused to file a complaint. Hey, Mate! We're talking beer.

ADDENDA

- According to the US census data, the number of citizens age 90 years or more increased to 1.9 million, almost three fold since 1980.
- After thousands of LGBT (lesbian, gay, bisexual, transgender) activists signed a petition for Sesame Street's Bert and Ernie to get married, PBS issued a statement that they are not gay but just best friends. By the way, they are puppets.
- Nobody ever says, "Can I have your beets?"
- The head Klan leader was a bed wetter. He went to KKK meetings in a rubber sheet.

ALOHA AND KEEP THE FAITH rts

(Editorial comment is strictly that of the writer.)

UPCOMING CME EVENTS

Interested in having your upcoming CME Conference listed? Please contact Brenda Wong at (808) 536-7702 x103 for information.

Date	Specialty	Sponsor	Location	Meeting Topic	Contact
March 2012					
3/7-3/12	GM, IM, FP	UCLA Office of CME	Wailea Beach Marriott Resort & Spa, Maui	Meeting the Challenge of Primary Care	www.cme.ucla.edu/courses
3/25-3/28	GS	University of California San Francisco School of Medicine	JW Marriott Ihilani, O'ahu	The Postgraduate Course in General Surgery	www.cme.ucsf.edu/cme
April 2012					
4/1-4/6	GP, FM, GPM	University of California San Francisco School of Medicine	Wailea Beach Marriott, Maui	Primary Care Medicine: Update 2012	www.cme.ucsf.edu/cme
4/14	GP, FM, GPM	University of Hawai'i, JABSOM, Area Health Education Program	Sheraton Waikiki, O'ahu	Hawai'i Physician Workforce Summit: Implementing Patient Centered Medical Home	https://adobeformscentral.com/?f=1ukFQNUGsHt1xX7O6Kq7Ug
4/20	GYN, ON, GO	University of Hawai'i John A. Burns School of Medicine	Ala Moana Hotel, O'ahu	Gynecologic Oncology Conference 2012	Email: jlouis@ucera.org
4/20-4/21	ORS, OSM, OTR	Hawai'i Orthopaedic Association	Hawai'i Prince Hotel, Waikiki, O'ahu	27th Annual Combined Orthopaedic Spring Symposium	Email: cathy.iwai@hawaiiintel.net
May 2012					
5/25	ADM, ADP	University of Hawai'i, JABSOM, Department of Psychiatry	Queen's Conference Center, O'ahu	Hawai'i Addictions Conference: Trends & Developments	Email: nmatsuda@dop.hawaii.edu
June 2012					
6/13-6/16	OPH	UC Davis Health System	Hilton Waikoloa Village, Kohala, Hawai'i	35th Annual Ophthalmology Symposium, Big Topics on the Big Island: An Update of Comprehensive Ophthalmology	www.ucdmc.ucdavis.edu/cme
July 2012					
7/1-7/6	OBG, REN	University of California San Francisco School of Medicine	Hapuna Beach Prince Hotel, Big Island, Hawai'i	Essentials of Women's Health: An Integrated Approach to Primary Care and Office Gynecology	www.cme.ucsf.edu/cme
7/7-7/13	PD	Childrens Hospital Los Angeles Medical Group	Hyatt Regency Maui Resort & Spa	Pediatrics in the Islands... Clinical Pearls	www.childrenshospitalamedicalgroup.org
7/9-7/12	R	Postgraduate Institute for Medicine	Hyatt Regency Maui	Summer Imaging in Hawai'i	www.imaginginhawaii.com
7/17-7/20	EM	UC Davis Health System	Fairmont Kea Lani, Maui	Emergency Medicine Update: Hot Topics 2012	www.ucdmc.ucdavis.edu/cme/conferences
7/29-8/2	ORS, OSM, OTR	Kaiser Permanente	Grand Hyatt Kauai, Kaua'i	20th Annual Update in Orthopaedic Surgery Conference	Email: kpos@sbcglobal.net
August 2012					
8/9-8/11	IM, FM	MCE Conferences	Disney Hawai'i Aulani Resort, O'ahu	Internal Medicine Update for Primary Care	www.mceconferences.com
September 2012					
9/10-9/13	R	Postgraduate Institute for Medicine	Ritz-Carlton Kapalua, Maui	Imaging in Hawaii: Practical & Clinical Education	www.imaginginhawaii.com
October 2012					
10/22-10/26	GM, IM, FP	Continuing Education Company	Sheraton Maui Resort & Spa	2nd Annual Primary Care Fall CME Conference: Maui	www.cmemeeting.org
10/27-11/2	PD	Childrens Hospital Los Angeles Medical Group	Grand Hyatt Kaua'i Resort & Spa	Aloha Update: Pediatrics 2012	www.childrenshospitalmedicalgroup.org
10/3-10/6	CD	UC Davis Health System	Hilton Waikoloa Village, Kohala, Big Island, Hawai'i	32nd Annual Current Concepts in Primary Care Cardiology	www.ucdmc.ucdavis.edu/cme/conferences