(68%) of the 59 cases. In the latter context, it may not be the primary pathogen. *C. difficile* is thought to potentiate infections by other organisms or enhance the pathogenesis of other bacteria in mixed infections (7).

Although the majority of patients had underlying illnesses (e.g., malignancy, chronic renal disease), trauma, or surgery, at least 30% had no identifiable predisposing condition. It is postulated that *C. difficile* gains access to the abdominal cavity or bloodstream following a breakdown of the mucosal barrier. However, a gastrointestinal pathology was either absent (27%) or not reported (31%) in a substantial proportion of patients. Diarrhea was absent in at least 32% of the patients with extraintestinal infection. Thirty-seven percent of patients died.

Assays for toxin, the main virulence factor for *C. difficile,* have rarely been done in patients with extraintestinal *C. difficile* infections. Some cases have been caused by nontoxigenic strains. Stieglbauer et al (8) reported that the level of immunoglobulin (Ig) G antibodies to toxin A was 20-fold higher, whereas that of IgA antibodies was threefold higher, in a patient who developed a splenic abscess due to *C. difficile* infection, as compared with the mean levels in sera from 14 patients who had *C. difficile* diarrhea only. The effect of these naturally occurring antibodies on the natural history of the infection is uncertain (9,10).

In conclusion, extraintestinal *C. difficile* is a rare and probably underdiagnosed condition that is associated with high mortality. Its true prevalence, pathogenesis, and risk factors require further study.

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CIPROFLOXACIN USE AND MISUSE IN THE TREATMENT OF TRAVELERS' DIARRHEA

To the Editor:

Diarrhea affects 20% to 50% of persons who travel to tropical and semitropical areas. Fluoroquinolones, particularly ciprofloxacin, have become the drugs of choice for self-initiated treatment of travelers' diarrhea given their excellent activity against enteropathogenic bacteria (1,2). At our travel clinic, we provide a prescription for patient-initiated treatment to travelers visiting endemic areas. In addition, immunizations and malaria chemoprophylaxis are provided per Centers for Disease Control and Prevention guidelines.

We identified 312 travelers (aged ≥16 years) who were visiting developing countries by review of antimalarial prescriptions. Post-travel telephone interviews consisting of a 34-item questionnaire were conducted during January and October 2000. Travelers' diarrhea was defined as at least three loose bowel movements during a 24-hour period (1). Adherence with antimicrobial prescriptions, side effects, and the disposal of unused ciprofloxacin were assessed.

We obtained questionnaires from 99 patients (female sex, n = 49). Mean age was 44 years (range, 16 to 75 years). Mean travel duration was 4 weeks (range, 1 to 48 weeks). There were 47 trips to Asia, 33 to Africa, and 22 to Central or South America; 3 patients visited multiple regions. Seventy patients received prescriptions for a self-initiated, 3-day course of ciprofloxacin (500 mg twice daily) for travelers' diarrhea.

Only 7 (41%) of the 17 patients who had travelers' diarrhea took ciprofloxacin; all reported that the medication was helpful. Two patients who had travelers' diarrhea had not filled their ciprofloxacin prescriptions. Two patients took ciprofloxacin for gastrointestinal symptoms other than diarrhea. There was no correlation between age, travel destination, sex, or antimalarial compliance and ciprofloxacin use for travelers' diarrhea.

Sixty-seven (97%) of the 70 filled prescriptions were not used completely during travel (Table). Moreover, only 2 patients used the medication as directed. Most unused ciprofloxacin was stored, as was the case with 46 (66%) of the filled prescriptions. Eight prescriptions (11%) were used for nondiarrheal ailments, given away, or lost.

The relatively low rate (41%) of self-treatment in our study is consistent with the findings of Hill (3). However, our study was smaller and

Table. Use of Ciprofloxacin by Travelers (N = 70)

Measure Taken	Number	% of All Filled Prescriptions
Used all of the ciprofloxacin for:		
Travelers' diarrhea	2	2.9
Sore throat, fever	1	1.4
Used part of the ciprofloxacin for:*		
Travelers' diarrhea	5	7.1
Gas, bloating, or upset stomach	2	
Did not use any ciprofloxacin, but:		
Stored unused pills	40	57.1
Disposed of pills	13	18.6
Donated pills	2	
Unknown	2	
Other	3	4.3
Gave to a friend	1	
Gave to dog	1	
Lost	1	

* Of these 7 patients, 6 stored and 1 disposed of the remaining pills.

did not address the use of adjunctive treatment for travelers' diarrhea, including bismuth subsalicylate, loperamide, and probiotics. These agents were used by almost half of the patients in Hill's study, obviating the need for antimicrobial therapy in many patients and contributing to the amount of unused antibiotics (3).

The disposal of unused ciprofloxacin is a previously unappreciated aspect of this clinical problem. Studies have shown that 10% to 40% of oral antibiotics are either wasted or used in potentially dangerous ways, such as self-medication, particularly for upper respiratory tract infections (4-6). The role of travel clinics in this alarming phenomenon has not been well described. How unused medications are "disposed" needs to be addressed. Patients could be informed with useful measures, such as revised medication labels to describe intended use and disposal procedures, targeted discussion at travel clinic follow-ups, and programs to recycle unused and unexpired medications.

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CHYLOTHORAX AS THE FIRST MANIFESTATION OF CONSTRICTIVE PERICARDITIS

To the Editor:

Chylothorax is defined as an accumulation of chyle in the pleural space due to disruption of the thoracic duct or one of its major divisions (1). We describe a 35-year-old white man with a 4-month history of bilateral chylothorax who presented with recent-onset ascites following thoracic duct ligation.

The patient's past history included aortoplasty for aortic coarctation at the age of 5 years. At admission, he appeared pale and ill. The physical examination revealed jugular venous distention at the angle of the jaw (8 cm above the sternal angle) while he was sitting. Heart sounds were normal. There was massive intra-abdominal free fluid. There was slight hepatomegaly and pitting edema of the legs. Blood chemical levels were normal except for a slight elevation in alkaline phosphatase and γ-glutamyl transpeptidase levels. Tuberculin skin test was negative. Paracentesis yielded a milky fluid with the following biochemical composition: triglycerides, 1080 mg/dL; cholesterol, 89 mg/dL; total protein, 3.8 g/dL; and lactate dehydrogenase, 108 U/L. Cytological and microbiologic examinations of peritoneal fluid were unremarkable. A chest radiograph showed minimal cardiac silhouette enlargement without pericardial calcification and moderate left pleural effusion. Abdominal echography disclosed a dilated inferior vena cava, which did not change in diameter during respiration. Computed tomographic (CT) scan of the thorax revealed a 1-cm thick pericardium (Figure) with some pericardial effusion and left pleural effusion. Right and left heart catheterization displayed an early diastolic dip followed by a mid-through-late diastolic plateau of the pressures in both ventricles. Cardiac index was reduced to 1.2 L/min/m^2. Pericardiectomy showed a thick and encasing pericardium. Microscopic examination revealed nonspecific chronic pericarditis. Ascites progressively resolved, and the patient had an uneventful recovery and was asymptomatic 24 months later.

Pleural effusion may be present in constrictive pericarditis (2). In our patient, errors in diagnosis and the physical examination led to delayed treatment. After a preliminary CT scan ruled out masses as an intra-thoracic cause of lymphatic obstruction, the past cardiovascular procedure be-