Table 1
Ego surfing (the term denoting searching for oneself on a search engine) results over the years.

Year	Position	Search engine results
1998	Medical student	My name was referenced two times: - speaker in a local conference - free message board listing a rug for sale that I no longer needed
2003	Resident	One or two pages of references related to a book I had edited—mostly reviews and places where interested readers could potentially buy it
2007	Junior attending	Two or three pages about research articles that I had authored, corroborating my academic endeavors as an assistant professor while prior book references fell to the back of the search results
2018	Community physician	Over a dozen pages appeared. The first two pages were filled with personal information about me. Places that I had worked seemed to predominate. But then I began seeing what I would later find out are citations from "data aggregators" or "data brokers." Unknowingly, I clicked one search result and it immediately reported my full name, home address, relatives of mine and multiple previous addresses. After a few more search pages, I found properties I had owned, my cell phone number, date of birth and DEA number.

unscrupulous place and paying to delete information another shouldn't have in the first place is extortion and criminal in my mind. All the worse if the data gathered were to be used to commit crimes against my family or me.

While I believe in transparency, I draw the line at my right for privacy and my personal safety. Thoughtful about my profession, I have always opted out of advertisements. I'm on the "do not call list." I haven't joined social media. I believe that my right to privacy should take priority over anyone else's desire to have my information. I am not interested in having my identity stolen again (at least twice that I know of), being stalked or even killed by a disgruntled patient whom I refuse to prescribe narcotics using good medical judgment [8].

Physicians are trained to always consider patient safety above all. We constantly act to protect patients' personal information (HIPPA), safely do procedures, keep safe boundaries with patients and do no harm. Yet I am unaware of any federal laws that protect physicians in the same ways from these data brokers. As a private citizen, I believe that nobody should be subjected to this exposure of their personal lives unless they choose it. But this should be particularly true of a physician who works with the public in a high profile, potentially dangerous work environment. When a data broker can eliminate the delineation between my work life and personal information, a safety alert must be called to provide us federal protections.

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16 February 2019

https://doi.org/10.1016/j.ajem.2019.03.043

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Electronic health record triggered hepatitis C screening in the ED

With an estimated prevalence of nearly 2.4 million in the United States (US) and over 185 million worldwide, infection with hepatitis C virus (HCV) carries a significant burden on the healthcare system [1,2]. In the US, upwards of 50% of affected patients are unaware of their diagnosis, putting them at an increased risk for progression to liver cirrhosis and subsequent organ failure [3]. With advancements in well-tolerated oral therapeutics, an increasing emphasis has been placed on early detection and routine screening practices. The Centers for Disease Control and Prevention (CDC) and the United States Preventive Services Task Force (USPSTF) recommend a one-time "birth cohort" screening for patients born between 1945 and 1965[4,5].

The Emergency Department (ED) plays an important role in the surveillance and detection of HCV infection. Existing literature supports the notion that HCV infected individuals are more likely to utilize the ED for care more than any other healthcare venue with an estimated ED prevalence rate of 4% to 18% [6-8]. Given this, the ED serves as a front-line resource in the early detection of HCV virus, particularly in the medically underserved population. Utilization of the electronic health record (EHR) to establish screening interventions has demonstrated effectiveness in cancer and viral screening in at risk patients in the ambulatory setting [9].

We conducted an IRB approved retrospective chart review to examine the utilization our EHR to initiate opt-out testing of eligible patients for HCV screening in the ED. Descriptive statistics were used to analyze data.

Our tertiary care hospital is located in an urban setting with an annual ED census of roughly 93,000 visits per year. A build was introduced into our EHR that prompted the triage nurse to ask eligible patients if he or she had ever been screened for HCV in the past. Patients were deemed eligible for inclusion based on the registered date of birth in the EHR. Those born between January 1, 1945 and December 31, 1965 were included in the screening process. If the patient had not been previously screened, or was unsure, the EHR would prompt the nurse to place an order for a screening HCV antibody test. Positive antibody screening results would be automatically be forwarded to dedicated patient navigators who would attempt to arrange for confirmatory RNA testing and outpatient follow up with the Hepatology clinic (Fig. 1). These linkages to care efforts were supported by grant funding unrelated to this study.

During the six-month timeframe from June 1, 2018 to December 31, 2018, a total of 3023 patients visited our ED and met the

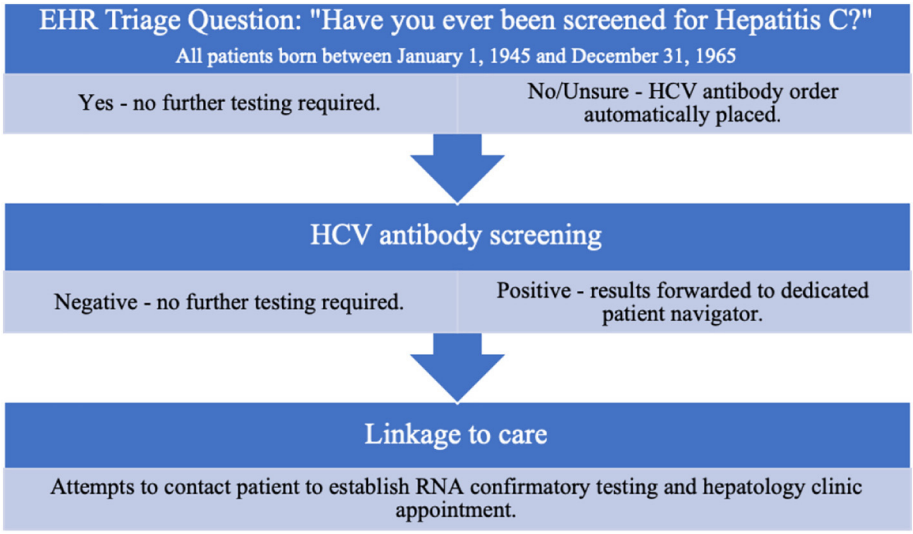

Fig. 1. HCV Screening Algorithm.

inclusion criteria. Of these, 1007 (33.3%) were subsequently screened for HCV through antibody testing. Positive screens were identified in 112 (11.1%) of the cases.

Of the 112 patients that were screened, 38 (33.9%) had a confirmatory RNA test performed. Patients either had the test performed as part of their inpatient workup or after being linked to care by a patient navigator. Of the 38 that had confirmatory testing, 28 (73.7%) had a positive confirmatory test, with 10 (26.3%) having a negative result. Of the confirmed positives, 14 were newly diagnosed. The rest of the patients had been previously diagnosed, although some had been lost to follow up.

Our results demonstrate the importance of screening for HCV from the ED. Newly diagnosed cases from the ED are now provided with an opportunity to obtain treatment and potentially halt progression of disease. With appropriate oral antiviral medical therapy, curative rates for HCV approach 97% - 100% in as little as twelve weeks [10].

Linkage to care after positive screening poses a significant challenge, particularly for medically underserved patients with limited resources. Fragmented healthcare systems as well as costly diagnostics and therapeutics serve as significant barriers to healthcare access outside of the ED. Administrative efforts through the use of EHR-based screening protocols can augment detection rates and enhance surveillance efforts.

The use of electronically driven best practice advisories and triggers from the ED can strengthen efforts towards improving public health. While linkage to care remains a significant hurdle to overcome, the ED serves as an important starting point in the curative journey. Future efforts should be aimed at improving access to outpatient care through a multidisciplinary approach. Additional research is needed to identify specific barriers to successful linkage of care in an effort to enhance the role of the ED in the healthcare system.

Disclosures

MU has no disclosures to report.

GS - Gilead Sciences, research grant co-investigator.

Gilead Sciences had no role in the execution of this study or data interpretation.

Presentations: Preliminary data accepted for presentation at Society for Academic Emergency Medicine (SAEM) Annual Meeting (May 2019), however the authors are unable to present due to scheduling conflicts.

Acknowledgments

The authors would like to acknowledge Dr. Shobha Swaminathan, Associate Professor of Medicine at Rutgers New Jersey Medical School, for her work as principal investigator on grant procurement to aid in linkage of care efforts and laboratory testing.

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20 March 2019

https://doi.org/10.1016/j.ajem.2019.03.043

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"Bandemia" without leukocytosis: A potential Emergency Department diagnostic pitfall

Emergency physicians routinely employ leukocyte counts as a risk stratification tool in a variety of clinical presentations. While a leukocyte count within the normal reference range is widely acknowledged as unreliable, it is nonetheless commonly interpreted as reassuring in a patient not otherwise suspected of harboring severe and acute illness. However, recent data has drawn renewed attention to immature neutrophils ("bands") as a reliable predictor of acuity, even in the presence of a normal leukocyte count.

Peduzzi et al. reported no correlation between leukocyte counts and bacteremia in nearly 500 patients with sepsis in 1992 [1]. In 2012, Seigel et al. found that, among more than 300 patients with culture-confirmed bacteremia, 52% had normal leukocyte counts, and 17.4% had neither leukocytosis nor fever [2]. Several authors have previously reported a correlation between elevated *immature* neutrophil counts ("bandemia") and bacteremia, sepsis and death [2-4]. In a study of over 2000 admitted patients with normal leukocyte counts, Drees et al. found moderate to high band counts in 16% of cases, and reported a correlation between elevated bands and both bacteremia and death [4]. More recently, Shi et al. found steadily increasing risk for death with increasing bandemia, irrespective of leukocyte count [5]. The authors further reported bandemia with normal leukocyte count and normal heart rate in some patients requiring readmission following discharge from the ED (Table 1). Some authors have questioned the clinical utility of screening for elevated band counts [6-8]. Still, bandemia has remained a component of risk scoring tools for more than thirty years, and an association between bandemia and morbidity is evident [9-11].

Standard complete blood counts (CBC) provide automated, quantitative measurements of the number of leukocytes. When requested, a CBC with differential analysis will further provide an automated measurement of leukocyte morphologies (i.e. basophils, eosinophils, monocytes, neutrophils and lymphocytes), and will flag abnormal or immature morphologies (e.g. bands). Quantitative measurement of bands requires a manual differential performed by a laboratory technician, and each hematology lab defines specified criteria to trigger performance of a manual differential. Hospital-based labs commonly perform manual differentials when flagged cells are reported on automated counts, or when samples are submitted from specified departments (e.g. Emergency Departments). However, the process of identifying and quantifying "bandemia" is time-consuming, and results may become available much later than initial CBC results. Further, clinicians may be unaware of flagged results as manual differentials are queued and pending if no reporting system for flagged automated results exists. Emergency physicians must recognize this complex and variable reporting process to avoid early discharge of otherwise well-appearing patients before determination of band counts.

Emergency physicians face increasing external forces to improve both efficiency and accuracy while operating in an inherently high-stakes clinical setting. Throughput is a necessary surrogate for quality, though health outcomes remain the primary operational driver. While emergency physicians may feel compelled to find reassurance in a normal leukocyte count, the balance of evidence strongly suggests a more prudent approach would be to wait for the bands.

Table 1
Correlation between the total white blood cell count, "bandemia", fever, heart rate, and mortality.

WBC	Fever	"Bandemia"	Heart rate	Mortality
4.1 k	No	11	106–113	3.7%
5.6 k	No	13	102–126	
11.4 k	No	17	66–95	
3.6 k	Yes	18	101–108	
8.9 k	Yes	18	63–99	
8.4 k	No	29	58–67	3.9%
4.0 k	Yes	33	107–108	4.9%
4.3 k	No	33	95–102	
8.6 k	No	41	136–137	
7.9 k	No	45	98–126	

Ref: Shi E, Vilke GM, Coyne CJ, Oyama LC, Castillo EM. Clinical outcomes of ED patients with bandemia. Am J Emerg Med. 2015; 33 (7): 876–81.

Conflict of interest

The authors do NOT have a financial interest or relationship to dis-close regarding this research project.

Financial support

This is a non-funded study, with no compensation or honoraria for conducting the study.

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28 March 2019

https://doi.org/10.1016/j.ajem.2019.03.050

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