Routine Laboratory Screening for Acetaminophen and Salicylate Ingestion in Preadmission Psychiatric Patients Is Unnecessary

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Study objective: Screening preadmission psychiatric patients for acetaminophen or salicylate overdose is unnecessary in the absence of specific clinical concern for medication ingestion.

Methods: This was a multicenter retrospective cohort study of 3 Veteran's Administration emergency departments that medically evaluate patients prior to psychiatric admission. During the 10-year study period, these departments followed screening protocols that required the measurement of acetaminophen and salicylate levels on every patient prior to psychiatric admission. We examined all the acetaminophen and salicylate assays performed to see if any that were sent for screening led to a diagnosis of overdose and/or the administration of antidotal therapy.

Results: A total of 33,439 combined acetaminophen and salicylate assays were sent on 10,482 unique patients over approximately 17,000 patient encounters. An estimated 29,000 assays were sent for screening purposes only—87% (95% confidence interval [CI] 85% to 89%) of salicylate assays and 85% (95% CI 83% to 87%) of acetaminophen assays. We identified 43 patients with elevated acetaminophen levels and 11 with elevated salicylate levels. Among these patients, only 6 in total had their levels drawn for screening purposes only, with no history of suspected ingestion; in all but 1 patient, the levels were only slightly above the reference range. None of the patients with elevated levels identified by screening had clinical toxicity or received antidotal therapy.

Conclusion: Over a 10-year period, 3 Veteran's Administration emergency departments performed psychiatric preadmission screening protocols with acetaminophen and salicylate assays approximately 17,000 times without diagnosing a single case of toxicity. Our results suggest that this practice is unnecessary and wasteful. [Ann Emerg Med. 2021;■:1-9.]

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INTRODUCTION

Background

In 2017, approximately 3.5% of all visits to the emergency department (ED) in the United States were attributed to psychiatric-related disorders, accounting for over 4.8 million patient visits.[1] One of the responsibilities of the emergency physician during such visits is to medically evaluate the patients requiring psychiatric hospitalization for concurrent or causative medical conditions prior to acceptance by the receiving facility. Multiple studies have suggested that routine laboratory testing (including basic laboratory tests and urine drug screening) does not frequently change the clinician's judgment of medical clearance; however, these studies in aggregate have had a small combined enrollment (n=627). [2-6] The American College of Emergency Physicians (ACEP) clinical policy on care of the psychiatric patient recommends against routine ordering of laboratory testing in medical clearance of psychiatric patients and instead allow "medical history, previous psychiatric diagnoses, and physician examination to guide testing."[7] Despite these findings and recommendations, routine laboratory testing prior to psychiatric hospitalization remains a common expectation for psychiatric admission.[8]

Protocols for routine laboratory testing prior to medical clearance vary significantly among different health systems.[8] As a result of the ubiquity of acetaminophen- and salicylate-containing medications as well as the potential for delayed onset of symptoms and lethality of missed diagnosis, some medical clearance protocols include serum drug levels of these medications.

Editor's Capsule Summary

What is already known on this topic

Screening for acetaminophen and salicylate in psychiatric patients for admission is routinely done in some settings.

What question this study addressed

The utility of routine screening in the absence of clinical indication of potential self-harm exposure.

What this study adds to our knowledge

This retrospective review of patients admitted to psychiatry at 3 urban Veteran's Administration emergency departments found no instances in which screening for acetaminophen and salicylate toxicity led to a change in care.

How this is relevant to clinical practice

Screening for acetaminophen and salicylate as part of routine medical clearance is costly and not valuable.

Importance

Because of the practice of routine laboratory screening for medical clearance, which often includes acetaminophen and salicylate levels, patients undergo testing that may unnecessarily increase costs and delay disposition to definitive care. These burdens can negatively affect patients and medical systems financially and prolong medical evaluations, contributing to ED crowding at large. If shown to be safe, a targeted testing regime based on clinical suspicion of ingestion rather than rote protocol could alleviate such problems, expediting care and allowing EDs to better allocate resources accordingly.

Goals of This Investigation

Our hypothesis was that the routine screening for surreptitious ingestion of acetaminophen or salicylates in psychiatric patients, without a specific reason for clinical concern, was extremely low in diagnostic yield and therefore unnecessary. Our objective was to assess whether this practice changed the medical management of these patients as defined by identifying the need for antidotal therapy or medical admission in ED patients being evaluated for possible psychiatric admission

MATERIALS AND METHODS

Study Design and Setting

This was a retrospective, multicenter, chart review cohort study of 3 urban Veteran's Administration (VA) EDs that care for a diverse patient population that includes veterans and active-duty service members. These 3 facilities have EDs that see a combined ~60,000 patients per year. Similar to non-VA hospitals, VA facilities that offer inpatient psychiatric services vary with regard to the requirements for standardized preadmission medical screening. Specific laboratory screening protocols were required to be performed prior to admission by the psychiatric faculty. The 3 facilities chosen for this study were selected because, during the study period, they each screened all patients requiring psychiatric admission (as well as other patients whom the treating provider suspected might require psychiatric admission but were ultimately not admitted) with laboratory testing protocols that included salicylate and acetaminophen levels to evaluate for possible toxic ingestion. These protocols were implemented through electronic order sets. The study was approved by the Milwaukee VA Institutional Review Board, approval #2696-01 and was performed in compliance with the Strengthening the Reporting of Observational studies in Epidemiology statement for cohort studies.

Selection of Participants

The inclusion criteria were any patients evaluated in the Milwaukee, WI, Madison, WI, or North Chicago, IL VA Medical Centers EDs between June 1, 2009, and June 1, 2019, who had salicylate and/or acetaminophen assays performed during their ED stay. Repeat or trended laboratory values from the same visit were excluded. Patients were identified using the VA Informatics and Computing Infrastructure by Microsoft SQL query performed on the VA Corporate Data Warehouse.

Measurements

Acetaminophen and salicylate serum levels were determined by enzymatic technique with a Siemens Dimension Vista analyzer (Munich, Germany) at all study sites. Laboratory values, demographic data (age, sex, race, ethnicity), and patient identifiers for the entire patient cohort were populated into a Microsoft Excel 14.0 (Redmond, WA) spreadsheet by automated SQL query. The charts were then divided into 2 groups: those with positive values defined as acetaminophen level more than 30 μg/mL or salicylate level more than 20 μg/mL and those with negative values. If there were multiple positive assays in a single visit because of trending of levels, then the highest level was used and the others were excluded. Additional manual data abstraction were performed on all charts with positive test results and 500 of the charts with negative salicylate or acetaminophen values (250 for each assay). These charts were chosen by numbering each

laboratory result consecutively and then selecting a subset through a random number generator.

For the charts selected for manual data abstraction, physician abstractors (KL, AF) used patient identifiers to access the electronic medical record in the Veterans Health Information Systems and Technology Architecture (US Department of Veteran's Affairs). The abstractors were not blinded to the study hypothesis. The records reviewed included nursing and triage notes, ED physician notes, and psychiatric consultation notes if available. The additional data obtained through manual data abstraction were the indication for testing (psychiatric admission prescreening without a history of medication ingestion known prior to testing versus any other indication such as a history of accidental or intentional medication ingestion), presence of altered mental status or suicidal ideation as documented by a health care provider, specific toxicologic treatment with N-acetylcysteine, bicarbonate, and/or hemodialysis, and additional data on clinical course as appropriate. The indication for testing was scored as "psychiatric admission prescreening" if the patient had a psychiatric chief complaint, secondary complaint, or positive suicidality screen, if no history concern for ingestion was documented, and if the preadmission screening order set was utilized. Provider intent was assessed based on the triage note and time-stamped pre-result physician documentation to avoid the possibility that a positive assay resulted in a physician obtaining and documenting additional posthoc history, thereby obscuring that a screening protocol did actually discover a surreptitious ingestion. For the purposes of this study, known or suspected use of alcohol or nonpharmaceutical illicit substances was not considered, in isolation, as history suspicious for medication overdose; similarly, mild intoxication states wherein the patient was still alert and oriented and able to provide coherent history were not considered "altered mental status." In order to fully assess the testing burden imposed by the screening protocols, patients were considered to have been screened and included in the analysis regardless of whether they were ultimately admitted to the hospital. Abstractors reviewed 50 common charts prior to the primary data abstraction for the purposes of calculating a kappa score for the variables of testing indication, altered mental status, and suicidal ideation. Discrepancies were resolved by discussion and consensus of the physician reviewers.

Additionally, we considered the possibility that a "negative" acetaminophen assay could raise concern for overdose in the right clinical context (ie, if the interval between ingestion and blood draw exceeds approximately 13 hours per the Rumack-Matthew nomogram, a level of less than 30 μg/mL could still be considered potentially toxic).[9] Therefore, an additional SQL query was performed on all charts linked to "negative" acetaminophen levels to see if N-acetylcysteine was administered during the clinical encounter despite the level being within the reference range. Separate SQL queries were also used to establish the total number of laboratory sample draw dates (to approximate the total number of ED encounters) and to link the laboratory encounter data to ED encounter data for the purposes of obtaining supplemental data regarding the chief complaint and patient disposition (psychiatric admission, medical admission, or discharge). Cases with ambiguous chief complaints were adjudicated by consensus of AF and KS.

Outcome

The outcome was the identification of a clinically significant acetaminophen or salicylate overdose, defined as a patient requiring medical hospital admission and/or administration of a specific therapy such as N-acetylcysteine, sodium bicarbonate, or hemodialysis.

Analysis

Descriptive statistics were performed. For the charts linked to negative laboratory result values, the proportion of randomly selected charts with a testing indication of "psychiatric admission prescreening without a history of medication ingestion" was used to extrapolate the total number of negative screening assays performed during the study period for that indication. A binomial distribution was used to calculate the 95% confidence interval (CI) of this estimated value. Statistical calculations were performed using SAS 9.4 (SAS Institute, Cary, NC). A sensitivity analysis was performed wherein all repeat visits (ie, the same patient being screened for admission on multiple occasions) were excluded from the manually abstracted data.

RESULTS

Characteristics of Study Subjects

We identified 16,907 acetaminophen assays and 16,673 salicylate assays performed during the study period, for a total of 33,580 assays. There were 33,439 assays remaining after 141 repeat/trending assays were excluded (Figure). These assays were performed on 10,482 unique patients, with the demographics of the patient cohort described in Table 1. The assays were obtained on 16,996 unique laboratory encounter days, which is a close approximation of the total number of ED visits.* This equates to 1.97 combined assays per visit and 1.62 visits per patient in

*In theory, patients could have had multiple ED visits in 1 day during which the specified laboratory samples were drawn or had multiple laboratory sample draws occur during 1 visit spanning multiple calendar days. However, these occurrences were rare and would be expected to have only a minimal effect on the accuracy of this figure.

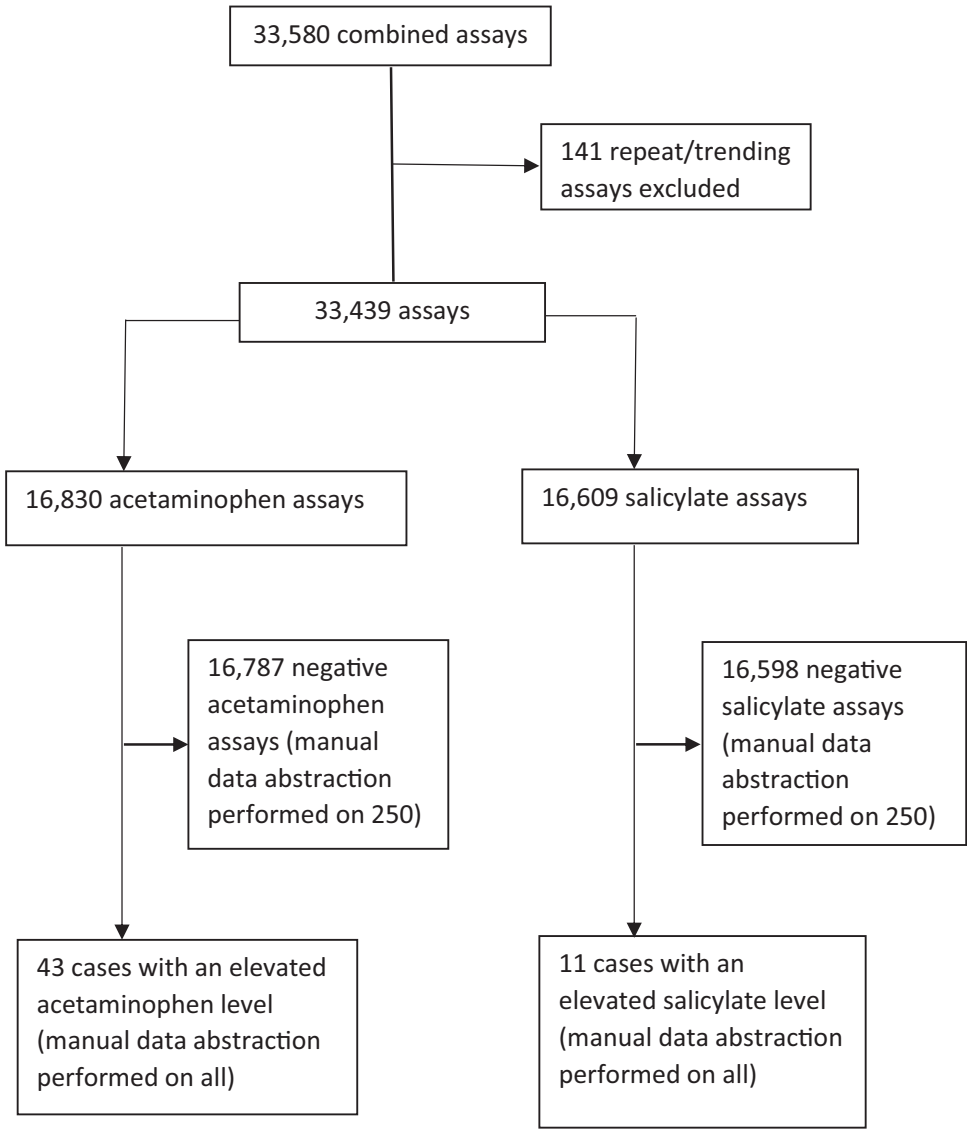

Figure. Flow diagram of the assays used in the analysis.

which 1 or more of these assays were drawn—reflecting the fact that salicylate and acetaminophen assays were almost always performed together and that a significant portion of the population had multiple visits in which they were screened for a potential psychiatric admission. All ED medical records for patients identified as requiring further data abstraction could be linked to the assay results and had manual data abstraction performed successfully. Regarding the ED chief complaint and disposition data, the laboratory data could be linked to 14,837 (87%) ED encounters out of 16,996 total for additional automated data abstraction; the other 13% of encounters could not be matched for technical reasons. Of these 14,837 encounters, 10,152 had chief complaints that were psychiatric in nature. Overall, 4,324 patients were discharged from the ED and 10,513 encounters resulted in hospital admission; 8,228 patients were admitted to psychiatric units and 2,285 to medical units.*

Main Results

The kappa score for inter-reviewer agreement regarding the testing indication of psychiatric admission screening versus any other indication was 0.92,

*In these facilities, some medically stable patients requesting psychiatric admission for alcohol detoxification are initially admitted to medical units for a period of observation if they have a history of complicated withdrawal; they are routinely transferred to psychiatric units after a period of observation. This data only reflects initial patient disposition from the ED, and therefore likely overrepresents the number of patients who were truly admitted for medical, rather than psychiatric, reasons.

Table 1. Patient demographics.

Characteristic	Number (%)* Total=10,482
Sex	
Male	8,387 (80)
Female	2,095 (20)
Age†	
Mean±SD	35.7±18.5
≤17‡	64 (0.6)
18–25	4,904 (47)
26–45	2,164 (21)
46–65	2,531 (24)
>65	819 (8)
Race	
White	7,595 (72)
Black	2,319 (22)
Asian	130 (1)
Native Hawaiian or other Pacific Islander	156 (1)
Unknown/not given	282 (3)
Ethnicity	
Hispanic	928 (9)
Non-Hispanic	9,337 (89)
Unknown/not given	217 (2)

*Percentage values may not add up to 100 because of rounding.
†For patients with multiple encounters meeting the inclusion criteria, the age at the first encounter was used.
‡Infrequently, VA emergency departments are utilized by nonveteran, nonmilitary patients, which explains the small number of patients enrolled who were under 17 years of age.

indicating near-perfect agreement between the physician abstractors. Likewise, kappa scores for the determination of altered mental status and suicidal ideation were 1.0 and 0.89, respectively. There were 43 cases of supratherapeutic acetaminophen ingestion and 11 cases of supratherapeutic salicylate ingestion. One patient had supratherapeutic levels of both acetaminophen and salicylate simultaneously, but there were no instances of the same patient presenting with an elevated salicylate or acetaminophen level on multiple different ED visits. The characteristics of the patients with supratherapeutic ingestions are described in Tables 2 and 3 for acetaminophen and salicylate levels, respectively. A total of 6 supratherapeutic assays came back on patients for whom there was no known history of overdose prior to the level being sent, with the level having been apparently ordered for psychiatric screening purposes only. These cases are summarized as follows. In none of the cases identified by screening did the elevated laboratory value result in apparent toxicity, medical admission, or the administration of antidotal or other therapy.

Patients with elevated acetaminophen levels identified by screening.

Patient 1

A 34-year-old man presented to the ED complaining of panic attacks and severe anxiety as well as an unrelated musculoskeletal pain complaint. He denied suicidal ideation to the ED staff. His acetaminophen level was found to be 92.3 μg/mL, but his alanine aminotransferase level was within the reference range. When confronted about the elevated acetaminophen level, the patient admitted to taking a "handful" of acetaminophen tablets for pain just prior to arrival and denied it was a suicide attempt. At 4 hours, the acetaminophen level was found to be 63.3 μg/mL. N-acetylcysteine was not administered. The patient was subsequently admitted to psychiatry for several days. He never developed any signs or symptoms of acetaminophen toxicity.

Patient 2

A 24-year-old woman was evaluated for suicidal ideation. She endorsed the use of acetaminophen for pain, with no specific documentation that this use was suspected to exceed

Table 2. Characteristics of patients with supratherapeutic acetaminophen levels.

Characteristic	Not Sent for Screening, N=39	Sent for Screening, N=4
Female sex, n (%)	20 (51)	2 (50)
Median age, y (range)	23 (18–72)	32 (24–42)
Median level, μg/mL (range)*	57 (30–267)	32 (30–92)
Altered mental status, n (%)	14 (36)	1 (25)
Suicidal, n (%)	29 (74)	1 (25)
Concern for accidental overdose, n (%)	9 (23)	NA
Received N-acetylcysteine, n (%)	21 (54)	0 (0)

NA, not applicable.
*Repeat/trended values were excluded; if there were multiple positive values in a visit, the highest value was used.

Table 3. Characteristics of patients with supratherapeutic salicylate levels.

Characteristic	Not Sent for Screening, N=9	Sent for Screening, N=2
Female sex, n (%)	2 (22)	0 (0)
Median age, y (range)	53 (22–86)	60 (55–64)
Median level, μg/mL (range)*	42 (20–79)	22 (20–24)
Altered mental status, n (%)	4 (44)	1 (50)
Suicidal, n (%)	7 (78)	0 (0)
Concern for accidental overdose, n (%)	2 (22)	NA
Received sodium bicarbonate, n (%)	7 (78)	0 (0)
Received hemodialysis, n (%)	1 (11)	0 (0)

NA, not applicable.
*Repeat/trended values were excluded; if there were multiple positive values in a visit, the highest value was used.

dosing recommendations. Her acetaminophen level was 32.4 μg/mL; the aspartate aminotransferase level was within the reference range. N-acetylcysteine was not administered. She was admitted to psychiatry for 5 days and never developed signs or symptoms of acetaminophen toxicity.

Patient 3

A 42-year-old man was evaluated for bipolar disease with uncontrolled mania as well as a chronic musculoskeletal pain complaint. His acetaminophen level was found to be 32.4 μg/mL; alanine aminotransferase and aspartate aminotransferase were both within the reference range. N-acetylcysteine was not administered. He was admitted to psychiatry for 3 days and never developed signs or symptoms of acetaminophen toxicity.

Patient 4

A 29-year-old woman presented to the ED with anxiety. Her acetaminophen level was found to be 30.4 μg/mL; alanine aminotransferase and aspartate aminotransferase were both within the reference range. N-acetylcysteine was not administered. She was seen by psychiatry in the ED and cleared for discharge to home. Per chart review of her subsequent care in the months following her ED visit, there was nothing to suggest that she had developed signs or symptoms of acetaminophen toxicity.

Patients with elevated salicylate levels identified by screening. Patient 1

A 64-year-old man presented to the ED with suicidal ideation, homicidal ideation, and substance abuse disorder. His salicylate level was 20.4 μg/mL, with a serum bicarbonate level of 27 mg/dL. Bicarbonate was not administered. He was admitted to psychiatry for 14 days and never developed signs or symptoms of salicylate toxicity.

Patient 2

A 55-year-old man with bipolar disorder presented to the ED with suicidal ideation. His salicylate level was 23.5 μg/mL, with a serum bicarbonate level of 21 mg/dL. Bicarbonate was not administered. He was admitted to psychiatry for 9 days and never developed signs or symptoms of salicylate toxicity.

Characteristics of patients with "negative" laboratory assays. Based on the random sampling of charts with negative salicylate and acetaminophen levels, we found that 218 (87%; 95% CI 85% to 89%) of the 250 negative salicylate levels were sent on patients requiring potential psychiatric admission with no specific history of a medication ingestion. For the negative acetaminophen levels, 213 of 250 (85%; 95% CI 83% to 87%) were likewise sent purely for screening purposes. Among the 431 patients being screened for psychiatric admission, 216 (50%) had suicidal ideation and 19 (4%) had altered mental status. In the sensitivity analysis that excluded repeat visits, these results were essentially unchanged. Regarding the SQL query of cases with negative acetaminophen levels, there were no instances identified in which an acetaminophen level was within the reference range but nonetheless felt to indicate clinical concern for acetaminophen overdose requiring N-acetylcysteine therapy.

A total of 16,787 negative acetaminophen assays and 16,598 negative salicylate assays were sent during the study period. By multiplying the percentage of negative assays sent for the indication of screening in the randomly selected charts by the total number of assays for both acetaminophen and salicylates, respectively, we estimate that a total (±SD) of 29,000±580 negative acetaminophen and salicylate assays were sent for psychiatric screening purposes.

LIMITATIONS

This study is limited by its retrospective design and the collection of data, which included variables that were dependent on the subjective judgment of the abstractors,

who were not blinded to the study hypothesis. Although this was a multicenter study, the use of a veteran and active-duty population skews the sample to be predominately male, which may affect generalizability, particularly because women are more likely than men to attempt suicide by overdose.[10] However, this limitation was mitigated by the fact that because of the large overall study enrollment, even though our sample contains only 20% female subjects, this still amounts to over 2,000 female subjects. Relatedly, because of the demographics of the VA patient population, a relatively small number of adolescent patients were enrolled. Therefore, the results may not be applicable to that age group. The total number of negative assays was approximated by sampling and extrapolation and was not an exact count. Although we were able to obtain data regarding the chief complaint and ultimate disposition following ED evaluation for most of these patients, these data were incomplete.

DISCUSSION

Despite an ACEP practice recommendation to the contrary, laboratory screening of preadmission psychiatric patients is commonplace in EDs.[2] These screening protocols are often performed at the behest of accepting psychiatric inpatient services, differ considerably between institutions, and sometimes include testing for surreptitious ingestion of acetaminophen and salicylates.[8] The results of our study strongly suggest that laboratory assessment for toxic ingestion without specific clinical concern is unnecessary in an adult patient population. We also found that in the EDs that employed them, these screening protocols were the primary driver of acetaminophen and salicylate testing, accounting for 86% of all such tests performed.

Previous research has assessed the overall utility of laboratory screening protocols in ED psychiatric patients overall with findings of low diagnostic utility. However, the available data have been insufficient to alter clinical practice—perhaps because the prior studies were few in number (n=3),[11–13] with a small combined enrollment (n=627) according to one systematic review. As such, the aforementioned ACEP policy statement regarding laboratory screening of psychiatric patients carries only a level C recommendation, based on studies rated as Level of Evidence III. Additionally, only one of the studies cited by the policy evaluated a screening protocol that included salicylate and acetaminophen levels.[2] Prior studies addressing the question of laboratory screening only evaluated if testing resulted in a change of disposition, whereas our study also assessed for changes in management. Although our study only assessed the utility of toxicological assays rather than laboratory testing at large, it did so with a much larger data set than any previous work.

Another strength of this study was the methodology insofar as we obtained and analyzed all acetaminophen and salicylate assays that were sent from the study EDs. This allows us to be highly confident that we captured every patient that was screened with laboratory testing, compared with relying on the accuracy of the charted "chief complaint" or International Classification of Diseases (ICD-9) or ICD-10 codes to identify all patients being evaluated for possible psychiatric admission. We were also able to quantify the percentage of assays sent for screening purposes as a percentage of the whole and thereby quantify the proportional burden imposed by these protocols. Although VA patients differ from other patient populations in important ways, we believe that the use of VA data were appropriate to address this specific clinical question. Veterans are at a higher risk of suicide than the population at large, and intentional overdose is the most common means of attempted suicide in VA patients.[14,15] Therefore, it would follow that our population would be at a similar or greater risk of suicide by ingestion than the population at large—and was an appropriate choice for testing our hypothesis accordingly. Because of the integrated nature of the VA health system and its electronic medical record, no patients were lost to follow-up.

Patients with psychiatric morbidity are at risk of psychosis, delirium, and substance-induced encephalopathy, which may interfere with the ability of the emergency physician to obtain a reliable history and intrinsically raise clinical concern that unidentified substance ingestion has occurred. For this reason, screening for salicylate ingestion has been tentatively recommended in drug overdose patients with altered mental status.[16] However, in our population, the proportion of patients being screened for admission who had altered mental status was small (4%). Therefore, based on our results, if laboratory protocols were limited to those with altered mental status and/or a history concerning for intentional medication ingestion, more than 80% of tests in our facilities would be eliminated. Along similar lines, even if screening for ingestion was only limited to cases in which patients were presenting with suicidal ideation as opposed to other psychiatric complaints such as anxiety or substance abuse, this would result in a 50% reduction in unnecessary assays in our population.

Our regional milieu mirrors the general lack of consensus on the issue of which laboratory assays are appropriate to obtain when screening psychiatric patients: in preparation for this study, we surveyed each of the 8 EDs within our VA region, Veterans Integrated Service Network 12, regarding

their medical screening practices for psychiatric patients. Each required preadmission laboratory tests, but the protocols varied widely; no 2 were exactly alike, and although 3 EDs routinely checked acetaminophen and salicylate levels, the other 5 did not. Specific data regarding the prevalence of acetaminophen and salicylate testing in such screening protocols nationwide are sparse. If the prevalence of this practice in our region (3 of 8 EDs) or in the studies cited in the ACEP policy statement (1 of 3) is roughly representative of the country as a whole, then that would imply that screening for salicylate and acetaminophen ingestion is performed in a significant fraction, but not a majority of facilities evaluating patients for psychiatric admission. Even if the prevalence of screening protocols that include acetaminophen and salicylate levels is as low as 5%, with approximately 5,000 EDs in the United States and 4.8 million annual ED visits for psychiatric concerns that would amount to hundreds of facilities that perform this testing nationwide and hundreds of thousands of unnecessary assays performed every year.[1,17]

In terms of the potential monetary savings from eliminating unnecessary testing, the direct marginal cost of these tests to our VA facility on a per case basis is not high; about US$1.23 each for the salicylate and acetaminophen assays, which includes the test tube and reagents. However, given the frequency with which VA EDs screen psychiatric patients, the overall cost to the system is still potentially significant. Additionally, the cost of unnecessary testing to the patient, particularly outside of the VA (where patients are billed flat fees rather than in an itemized fashion for services), can be orders of magnitude higher—often in excess of US$1,000 for a full laboratory panel depending on the insurance status.[18] The cost burden of unnecessary laboratory assays also does not reflect the use of other resources such as personnel to perform phlebotomy or the additional time spent in the ED space awaiting test results. Because of these factors, the greatest potential benefit would be derived from the elimination, where appropriate, of laboratory screening entirely. Directions for future study should therefore include analysis of large data sets to evaluate the utility of the other most frequently obtained screening laboratory tests (CBC count, basic metabolic panel) with the goal of establishing which subsets of preadmission psychiatric patients do not require any laboratory testing to be performed. Although laboratory test protocols are often implemented at the behest of psychiatrists accepting patients for admission, it is still within the purview of emergency physicians to utilize the available evidence to advocate for a reduction in unnecessary testing. As such, we were able to present these data to our psychiatric colleagues at our local institution and have the salicylate and acetaminophen assays removed from our preadmission screening protocol with their consent. It is our hope that moving forward, others may be able to do so as well.

In summary, we found that in 3 EDs over a 10-year period, the practice of routinely screening psychiatric patients for surreptitious acetaminophen or salicylate ingestion in the absence of any concerning history resulted in approximately 30,000 assays being sent without identifying a single case requiring antidotal therapy. Our results showed that in adult patients, laboratory assessment for overdoses of these over-the-counter analgesics can be safely limited to cases in which there is specific concern on the part of the treating emergency physician.

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