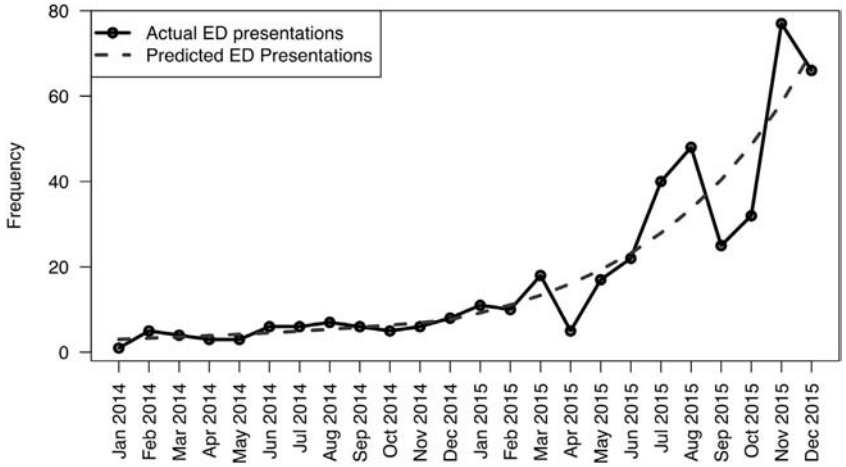

Fig. 1. Increase in SC ED presentations using *t*-test and Segmented Poisson Model. Caption: The slopes represent the change in log-transformed admissions for these periods. Comparing the two slopes using a *t*-test, they are significantly different ($p = 0.015$). Also, shown are ED presentations (the black line with points) vs. the segmented Poisson model's predicted values (hashed line).

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The "myth" of iodine allergy to radiocontrast in Emergency Medicine

Iodine, a trace element, is essential in the synthesis of thyroid hormones. Iodine is present in varying amounts in many foods such as milk, fish, bread and fruit [1].

In 2007, over 62 million computerized tomography (CT) scans were performed in the United States, and 16.2 million Emergency Department (ED) visits included a CT examination [2-3]. A likely significant amount of these scans involved the use of intravenous (IV) radiocontrast media. The question of allergies arises when administering iodinated radiographic contrast media because these medications are associated with a risk of hypersensitivity reaction in up to 1.05% of patients [4]. Unfortunately, when asked about allergies many patients are also prompted to disclose seafood, shellfish or iodine allergies. It is known that iodine is not an allergen and allergies to shellfish do not increase one's risk of an allergic reaction to iodinated contrast media [5-10]. Further, iodine allergy based on skin reactions to topical antiseptics is not believed to increase the risk of reaction to iodinated contrast media [11-12]. Despite these known facts, the myth still persists.

Over a decade ago, 37% of radiologists and 50% of interventional cardiologists replied in a survey that they would not administer iodinated contrast media or would recommend pretreatment in patients who reported a seafood allergy [13]. We sought to see how pervasive the myth remained among Emergency Medicine (EM) and Radiology providers.

A three part survey was created. The first portion included questions intended to evaluate respondents' perception of iodine allergy incidence and prevalence of dietary iodine in select foods. The second portion was intended to evaluate perceptions on the link between iodinated contrast media to iodine and shellfish allergies. The third portion asked for demographics of each provider including professional role, years of training, and primary practice site. The survey instrument was piloted among CT technologists at an academic facility in the Midwest before distributing the final survey to EM physicians and radiologists. Three separate academic sites were recruited for participation.

Table 1
Respondent demographics.

	EM (n = 39)	Radiology (n = 11)	Overall (n = 50)
Physician years of training, n (%)			
PGY 1–2	7 (17.9)	2 (18.2)	9 (18)
PGY 3–4	6 (15.4)	6 (54.5)	12 (24)
Attending	24 (61.5)	3 (27.3)	27 (54)
Midlevel	2 (5.1)	0	2 (4)
Practice site			
Site A	13 (29.7)	7 (63.6)	20 (40)
Site B	24 (64.7)	0	24 (48)
Site C	1 (2.7)	4 (36.4)	5 (10)
Other[a]	1 (2.7)	0	1 (2)

[a] Respondent listed his/her primary practice site as a community hospital not affiliated with one of the pre-selected sites.

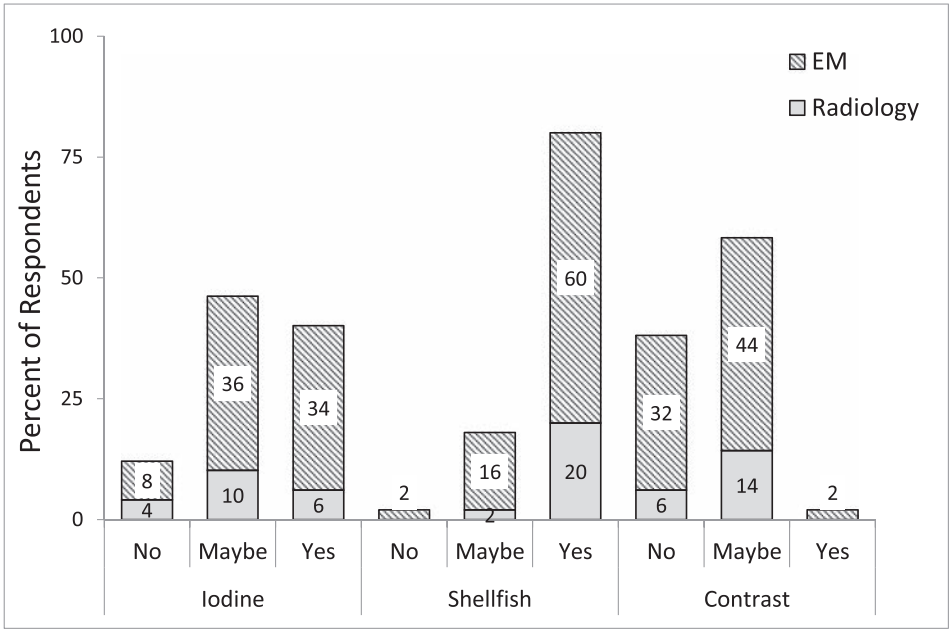

Fig. 1. Responses on continuing with IV contrast order in patients with specific allergy documentation.

The final evaluation included 50 provider responses: 39 EM and 11 radiology. A majority of the respondents were emergency medicine physicians at the attending level (Table 1). All respondents identified that iodine is present in foods commonly found in the American diet, and a majority (47/50, 94%) identified iodine as a component of table salt. EM providers were more likely to report iodine allergies as occurring never or rarely (84.2% vs 63.6%, $p = 0.03$).

When asked if a CT scan with IV contrast could be performed, a majority of respondents indicated that an iodine allergy limited ability to receive IV contrast or required pre-treatment and that a shellfish allergy did not (Figs. 1 and 2). These results did not differ between the EM and radiology provider groups. When prompted with iodine content of yogurt and shrimp then asked if shellfish allergies limited ability to receive IV contrast, all responses indicated that these patients could receive IV contrast (86% yes, 14% yes with premedication).

As part of the first survey question, 10 providers indicated that they would not administer IV contrast to a patient with a shellfish allergy or would only administer contrast if the reaction was mild. After being provided with the iodine content of yogurt and shrimp, 7 of those respondents indicated that they would administer contrast.

Our results show many emergency medicine and radiology providers still believe that cross-reactivity between a non-specific iodine allergy is a concern when administering iodinated contrast media but that most providers no longer consider seafood allergies a concern.

According to the American College of Radiology (ACR), true allergies to contrast medium are uncommon [14]. The ACR position on allergy cross-reactivity is:

> "Patients with shellfish or povidone-iodine (e.g., Betadine®) allergies are at no greater risk from iodinated contrast medium

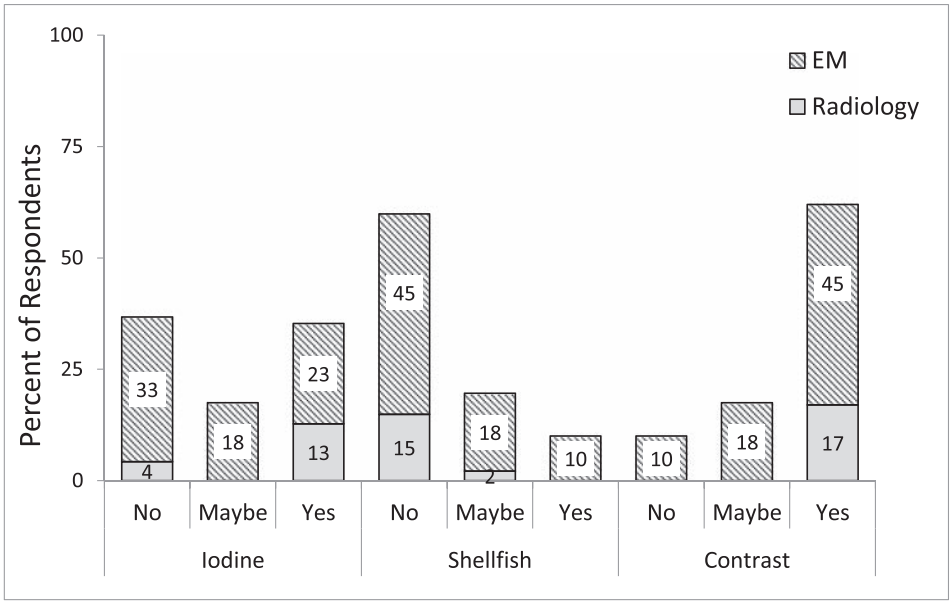

Fig. 2. Responses on need for premedication in patients with specific allergy documentation.

than are patients with other allergies (i.e., neither is a significant risk factor). There is no cross-reactivity between different classes of contrast medium. For example, a prior reaction to gadolinium-based contrast medium does not predict a future reaction to iodinated contrast medium, or vice versa, more than any other unrelated allergy."

[[14-15]]

Emergency medicine and radiology providers could benefit from additional awareness of ACR recommendations for managing administration of iodinated contrast media in the presence of a documented iodine or seafood allergy. Despite numerous evidence and recommendations from national organizations, the myth of iodine allergy and IV contrast still persists to a considerable degree.

Prior presentations

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Emergency provider documentation of sexual health risk factors and its association with HIV testing: A retrospective cohort study

Emergency departments (ED) are targeted areas for diagnosing human immunodeficiency virus (HIV) [1]. There is a paucity of data, however, characterizing emergency provider (EP) sexual history documentation (SHD) practices and its association with HIV testing [2-4]. In this regard, we conducted a retrospective cohort study of patients 18 years and older seen at an ED of a level 1 trauma center in Cleveland, Ohio from January 1, 2016 to December 31, 2016. Inclusion criteria were patients' first index visit in 2016 for those patients with billing codes for either a sexually transmitted infection (STI) diagnosis or STI laboratory testing. Patients were excluded from the study if they were transferred from an outside hospital, admitted, left against medical advice, previously diagnosed with HIV, or pregnant at the time of the visit. Data gathered included demographics and laboratory tests, as well as free text from each patient chart. SHD consisted of 7 components based on the CDC's recommendations for STI screening, which include questions about partners, prevention of pregnancy, protection, type of sexual practices, past history of STIs, and patient's sexual orientation [5]. We further included whether patients had a history of intravenous drug use (IVDU) to incorporate an additional known risk factor for HIV transmission [6,7]. In this study, a score of 1 point was given for each of the seven aspects. This study was approved by the University Hospitals Cleveland Medical Center Institutional Review Board.

Descriptive statistics and Pearson's chi-square tests were used to describe demographic characteristics, SHD, and HIV testing, as well to assess the association between both HIV testing and HIV diagnosis within 1 year of index visit. The association among total SHD score and likelihood of HIV testing was assessed with a logistic regression model. This association was adjusted for patient age, race, gender, number of providers seen at the index visit, and total SHD score, which was a shifted continuous variable ranging from 1 to 8 (instead of 0–7) to allow for assessment of the log-linear relationship with the dependent variable. Two sensitivity analyses were conducted with SHD coded as ordinal categorical (0,1− 3,4+) and binary categorical (0 = no, 1+ = yes). A significance level of 5% determined statistical significance. Statistical analyses were conducted using Jamovi Project (Version 0.9.2.12).

We identified 1450 initial patient visits in 2016. Patients were primarily black (90%), female (77%), with a median age of 27 years (IQR, 22–35) of which only 101 (7%) were tested for HIV and 841 (58%) free text notes had SHD (Table 1). When sexual history was documented, it rarely consisted of >3 of the 7 aspects (17%). The most frequently documented aspect of the sexual history were 'partners' (40%), IVDU (27%), and 'protection' (20%) (Fig. 1). In the unadjusted analysis, the only

Table 1
Patient demographics and index visit characteristics.

Variable	
Count	1450
Age, years	27 (22–35)
Female	1121 (77%)
Race/ethnicity	
Black	1311 (90%)
Caucasian	111 (8%)
Other	28 (2%)
Number of providers seen at ED index visit	3 (1–4)
STI laboratory testing	1429 (99%)
STI discharge diagnosis	508 (35%)
HIV testing	101 (5%)

Reported are either median (Q_1 - Q_3) or count (%); STI = sexually transmitted infection; HIV = human immunodeficiency virus; ED = emergency department. [a] Patients who received laboratory testing for an STI at the ED index visit; [b] Patients discharged from the ED index visit with a diagnosis of an STI. [c] Patients who received laboratory testing for HIV at the ED index visit.