Background. Candidemia is a commonly misdiagnosed infection caused by Blastomyces spp. It is not reportable in New York State (NYS), but where reportable, yearly incidence is 1–2/100,000 persons. In October 2017, a physician notified the NYS Department of Health (NYSDOH) of six blastomycosis cases seen during April 2016–July 2017 in the nonendemic eastern upstate area known as the Capital District (CD). NYSDOH investigated to determine the possibility of locally acquired blastomycosis.

Methods. NYS hospital blastomycosis discharge codes from the January 2007–December 2016 Statewide Planning and Research Cooperative System dataset were reviewed. To better understand illness in the area of highest incidence, NYSDOH contacted CD physicians to identify patients diagnosed with blastomycosis during April 2016–February 2018. Chart reviews and interviews were conducted to obtain travel and disease progression details.

Results. During 2007–2016, there were 279 blastomycosis diagnoses in NYS. Mean annual blastomycosis diagnoses during 2007–2015 was 24 (incidence: 0.1/100,000 persons); in 2016, there were 59 blastomycosis diagnoses (incidence: 0.3/100,000 persons). A CD county had the highest state incidence, with a rate increase from 2.0/100,000 persons during 2007–2015 to 4.1/100,000 persons during 2016. CD physicians provided contact and clinical information for the six initially-identified patients and two additional patients seen during April 2016–February 2018. All experienced delays in diagnosis, likely because two had cutaneous blastomycosis, three had pulmonary blastomycosis, and three had disseminated blastomycosis. One died from blastomycosis and another required long-term ventilator support. Seven cases were identified by culture or histopathology; the diagnostic method for one was unknown.

Conclusion. One CD county had blastomycosis rates similar to known endemic areas; patients lacked travel history to endemic areas, indicating locally acquired blastomycosis might have occurred. To improve prompt diagnosis, NYS clinicians and laboratory researchers should consider blastomycosis in patients with pneumonia, even without travel history to endemic areas. Further evaluation is needed to determine whether the endemic area of NYS has expanded.

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367. Influence of Body Weight and Outcomes in Candidemia
Mary Magroove, PharmD; Rachel M Kenney, PharmD; Susan Davis, PharmD andBonnie Vasquez, MD, FIDSA, ACHA. Henry Ford Hospital, Detroit, Michigan, 1Henry Ford Health System, Detroit, Michigan, 2Henry Ford Health System, CFP#3, Michigan, 3Infectious Diseases, Augusta University Medical Center, Augusta, Georgia

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Background. Obese patients may have altered pharmacokinetic parameters when compared with normal weight patients due to their body habitus and altered drug clearance. This retrospective cohort study evaluated the impact of obesity on antifungal outcomes.

Methods. The study was a retrospective cohort study at five hospitals with an antifungal stewardship program. Date: January 1, 2014–January 31, 2018. Included: 218 years, Candida species positive blood culture or T2MR, anidulafungin FDA label dose for ≥272 hours. Exclusion criteria: neutropenia, endocarditis, osteomyelitis, meningitis, and mucormycosis. Primary outcome: 30-day all-cause mortality. Secondary outcomes: 14-day clinical cure rates, Candida eye involvement, recurrence, antifungal restart, and optimal azole dose.

Results. One hundred seventy-three patients included: 121 blood; 73 T2MR. Obese: more female, pulmonary disease. Underweight: less surgery. Most common species: C. albicans (33%), C. glabrata (33%). More C. parapsilosis in obese (36.4%). Low anidulafungin minimum inhibitory concentrations (MIC) in all groups, but elevated in C. parapsilosis. No association between body mass index and mortality: underweight (36.4%), normal (35.8%), overweight (32.0%), obese (33.9%), morbidly obese (31.8%). See Table 1 for variables associated with mortality. No differences in quality of management, recurrence, Candida eye involvement, antifungal restart, optimal azole dose. More global cure in survivors.

Conclusion. We were unable to detect a difference in mortality in patients with candidemia by weight group. Line removal and receipt of ≥25 days of anidulafungin were protective.

Table 1.

| Survived, n (%) | Died, n (%) | Unadjusted OR [CI] | Adjusted OR [CI] |
|-----------------|------------|--------------------|-----------------|
| N = 118         | N = 55     |                    |                 |
| Echinocandin MIC ≥ 0.12 μg/mL | 11/29 (38) | 0/0 (0.0–0.97)     | –               |
| Severe sepsis   | 7/62 (11)  | 46/84 (0.8 1.4–7.1) | 5.1 (1.7–14.8)  |
| Liver disease   | 10/18 (55) | 13/24 (3.3 1.4–8.2) | 3.2 (1.1–9.4)   |
| Congestive heart failure | 7/14 (50) | 15/27 (2.2 1.0–4.9) | 2.0 (0.9–6.8)   |
| Echocardiographic abnormalities | 32/68 (48) | 32/68 (0.45 0.24–0.87) | 0.35 (0.16–0.8) |
| Line removal    | 95/101 (94) | 28/53 (0.07 0.03–0.19) | 0.05 (0.02–0.2) |

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368. Community-Onset Candidemia: Trends Over 7 Years
Rebecca Witherell, MD, Babak Hooshmand, MD, Kathleen Riederer, MT, Leonard Johnson, MD and Riad Khatli, MD; Infectious Diseases, Saint John Hospital and Medical Center, Ascension, Grosse Pointe Woods, Michigan

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Background. Candidemia is often hospital acquired. With the inpatient–outpatient shift in healthcare, many cases are acquired in the community. We present a national community-acquired candidemia.

Methods. We reviewed blood culture results (January 1, 2010–December 31, 2017), selected patients with candidemia, defined the place of onset (community onset [CO]: 0–3 days after admission; hospital onset [HO]: ≥24 days), the source and species distribution, and compared CO and HO cases.

Results. We encountered 210 candidemia episodes. The rate of candidemia (0.6–1.2/1,000 discharges) and species distribution fluctuated without a clear trend. CO accounted for 92 (43.8%) episodes including 83 healthcare-related (CO-HC) and 9 (4.3%) without healthcare exposure (CO-A). CO-HO proportion did not significantly change over time. Source and species distribution were similar in CO and HO cases except for higher proportion of intravenous drug users (IVDA), soft tissue/bone (other), sources and trend toward more UTI in CO (table). Comparison of cases with C. albicans and C. glabrata revealed that C. glabrata was more common in diabetics (51.5 vs. 33.0%; P = 0.005), and hemodialysis-dependent (H-D) cases (63.6% vs. 38.5%; P = 0.04), and tended to be less common in UTI (25.9% vs. 45.4% in other sources; P = 0.09).

Conclusion. Candidemia remains a healthcare-related event but a significant portion is CO. CO-A is limited to IVDA and patients with comorbidities. Sources and risk factor distribution was similar in CO-HC and CO-A cases except for more IVDA in CO-HC. C. albicans remained more common but C. glabrata surpassed C. albicans among diabetics and H-D.

Candidemia: Comparison of CO-A, CO-HC, and HO Cases. Results Represent. %

| Onset (n) | CA | DM | HO | IVDA | VA | AB | UTI | STB | O-U | alb | gla |
|-----------|----|----|----|------|----|----|-----|-----|-----|-----|-----|
| CO (8)    | 11.1| 11.0| 44.4| 0.033| 22.2| 33.2| 22.2| 44.5| 33.3| 0.07| 0.09|
| CO-HC (83)| 25.3| 42.2| 21.7| 9.6| 32.5| 12.0| 22.0| 8.5| 25.6| 41.0| 36.1| 29.8|
| CO-A (9)  | 31.1| 4.4| 28.1| 46.2| 21.2| 11.9| 1.4| 34.7| 47.5| 31.4| 21.1|
| P value   | 0.4 | 0.9| 0.4| 0.032| 0.5| 0.5| 0.98| 0.004| 0.1 | 0.5| 0.8|

Cancer; diabetes; vascular; abdomen/pelvis; urinary tract; soft tissue/bone; other; unknown; albicans; glabrata: a chi square test.

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369. Using Hybrid Models and Blockchain Technology as a Means to Develop a Novel Propensity Score for Candidemia and Invasive Candidiasis
Arti Sr Srinivas Rao, PhD; Jose Vasquez, MD, FACR FIDSA2 and Luis Ostrosky-Zeichner, MD, FIDSA, FSHEA;1; Population Health Sciences, Medical College of Georgia/Augusta University, Augusta, Georgia, 2Infectious Diseases, Augusta University Medical Center, Augusta, Georgia

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Background. Early initiation of empiric antifungal therapy has been shown to decrease morbidity and mortality among patients with candidemia/invasive candidiasis (C/IC). However, initiation of appropriate antifungal therapy is frequently delayed due to the severe limitations in early diagnosis. The goal of this study is to develop a high risk scoring system to predict the likelihood of a preemptive antifungal therapy. The proposed new methodology combines hybrid modeling and blockchain technology.

Methods. Our approach is novel and uses expert physicians’ perception of C/IC risk factors with those described in the hospitals through a set of models (hybrid model building from primary and secondary data). The goal is to improve the early detection of C/IC and initiate antifungal therapy. Once candidate hybrid models are derived, blockchain technology will be utilized. The methodology is based on vectors consisting of the ranking of candidiasis risk factors. These vectors will be constructed based on expert clinicians rank correlation computations, but Spearman’s rank correlation, etc.

Results. Preliminary analysis suggests three potential models. Model 1: uses the following order of variables, by their relative importance: (1) major surgery within 0–3 days, (2) TPN–7–3 days, (3) steroids 0–3 days, (4) ECMO, (5) hemodialysis 0–3 days, (6) diabetes mellitus. Model 2 includes: (1) multifocal Candida colonization, (2) central venous catheter 0–3 days, (3) IVAD, (4) medical ICU (5) APACHE score > 20, (6) mechanical ventilation. Model 3 includes (1) pancreatitis –710 days, (2) diabetes mellitus, (3) hemodialysis 0–3 days, (4) central venous catheter 0–3 days, (5) TPN–7–3 days, (6) APACHE score > 20.

Conclusion. Blockchain methods we propose are some of the first of their kind used in health research and are very suitable for the early detection of C/IC and other diseases where preemptive therapy is necessary. The following step will be to verify and use these models in the clinical realm and verify their effects on outcomes. Second we need to develop and evaluate our proposed methodology in building hybrid models,