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Anthropology

Forensic anthropology casework at the Cook County Illinois Medical Examiner's Office, Chicago, IL, 2012–2022

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Abstract

Forensic anthropology has grown in recent years with increased methodological standardization, technical advancements, and increasing numbers of academic institutions offering coursework and programs at the undergraduate and graduate levels. However, few practicing forensic anthropologists publish the composition of their casework, resulting in limited understanding of the true mechanics of the field by academics and forensic professionals. This study reports on forensic anthropology casework at the Cook County Medical Examiner's Office between March 2012 and February 2022. A total of 132 cases were evaluated. Results indicate that peak months of discovery were June (n = 19) and September (n = 17), with the fewest in January (n = 5). Most discovery contexts were outdoor surface recoveries (n = 55) and were fully skeletonized (n = 47). The majority of consultation requests consisted of biological profile estimation (n = 99). An average of 77.1 days elapsed from discovery to anthropology consult, 60.3 days from consultation to anthropological analysis, and 14.1 days from analysis to report submission. Assessment of the data indicates that the impact of seasonal variation, changing Medical Examiner personnel, as well as the complexity of cases influence forensic anthropology casework in Cook County. Report and discussion of forensic anthropologists' casework strengthens our understanding of the field, allows for the formulation of best practices, and serves as data upon which decisions regarding protocol, funding, resources, and need can be based. With additional practitioners collecting and sharing their data, a clearer understanding of the scope and utility of the field will be appreciated by colleagues and the greater forensic scientific community.

KEYWORDS

casework, Chicago Illinois, discovery context, forensic anthropology, month of discovery, seasonal variation, state of remains

Highlights

- The Cook County Medical Examiner averages 13.2 forensic anthropology cases per year (2012–2022).

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- Requests for forensic anthropology evaluation peak in June and September.
- The majority of cases evaluated were fully or partially skeletonized remains.
- Biological profile of decedents was the most common type of evaluation requested by pathologists.
- Data sharing reveals the utility of anthropological analyses and facilitates best practices.

1 | INTRODUCTION

Attention toward the field of forensic anthropology has increased in recent years. The field's growing recognition has been fueled by methodological and technological advancements in addition to improved standardization. This has led to an increased number of courses offered in undergraduate and graduate degree programs, increased numbers of board-certified forensic anthropologists (D-ABFA), and more Medical Examiners and Coroner's (ME/C) engaging directly with forensic anthropology practitioners [1–4]. However, the nature and composition of casework completed by active, practicing forensic anthropologists often remains unpublished, resulting in limited knowledge of the operationalization of the field by academics and forensic professionals.

Publication of forensic anthropological casework by practitioners serving a single jurisdiction is limited. Rather, publications historically focus on cases of public interest and the lifetime work of individual practitioners [5–8] or casework spanning multiple decades [5, 9, 10]. This has led, in part, to the perception that the specialization is beyond the scope or out of reach for many ME/C offices [11]. Recently, however, a number of practicing forensic anthropologists have published aspects of their casework in an effort to share data and provide context. Pokines [12], for instance, provides an analysis of 8 years (2011–2018) of casework focusing on taphonomy and the relatively large archeological and historic nature (35% of total sample) of cases entering the Office of the Chief Medical Examiner, Boston. Ost et al. [13] provide a review of the casework at Mercyhurst University from 1983 to 2020 focusing on the changing role of forensic anthropologists and their increased inclusion in fatal fire scene recoveries. Additionally, many practicing forensic anthropologists in the Southwest U.S. have reported on the changing nature of their casework due to increased numbers of migrant deaths along the U.S.-Mexico border and the need for better means of positive identification and repatriation (e.g., Ref. [14–18]). While these reports offer insight into the scope and the utility of work conducted, comparing these data to casework needed and/or completed in urban jurisdictions is difficult given the varied contexts within which forensic anthropologists work.

Hence, we suggest that sharing and publishing reports on the composition of anthropology casework from varied jurisdictions will provide essential data upon which planning, needs assessment, and resource determinations can be appraised. Continued discussion and publication of casework will serve future practitioners within anthropology and the broader audience of forensic scientists who engage with or request our expertise.

2 | MATERIALS AND METHODS

Illinois supports a mixed Coroner/Medical Examiner system, with the Cook County Medical Examiner's Office (CCMEO) serving as the only Medical Examiner's office in the state. The CCMEO jurisdiction extends over 1635 square miles, covers 63 miles of lakeshore, approximately 11% (70,000 acres; 110 sq mi) of forest preserve lands, and includes approximately 5.2 million people representing 45% of the population of Illinois [19, 20]. Approximately 16,000 deaths are reported annually, with 5600 requiring further examination [20]. Prior to March 2012, anthropology consultations were made by Dr. Clyde Snow who visited Chicago several times per year to assist with cases in Cook County and neighboring Coroner's Offices.

Since March 2012, two anthropologists, working in concert, have been hired as part-time consultants on 2-year renewable contracts. The first author (EBW) has been a Diplomate of the American Board of Forensic Anthropology since 2020. In most instances, the anthropologists are notified of a need for anthropological consultation by a forensic pathologist after remains have been brought to the Medical Examiner's Office. Upon review of CCMEO Investigator's Reports, photographs taken upon arrival and throughout the autopsy process under the pathologists' direction, and radiographs taken of the decedent upon arrival at the CCMEO, the anthropologists may request maceration. This is completed by the Medical Examiner's staff. Additional photographs are taken by CCMEO Photography Department staff under the anthropologists' direction during anthropological analysis.

With the objective of evaluating the composition of forensic anthropology casework at the CCMEO between March 2012 and February 2022, the following variables were recorded: number of anthropological analyses per year, month of initial discovery, decedent depositional environment, condition of remains upon initial discovery, type of anthropology consult requested, time from discovery to consultation request, time from consultation request to analysis, and time from analysis to report submission.

Month of initial discovery and decedent depositional environment were appreciated based on Investigator's Reports received with initial anthropologist consult request. Depositional environmental conditions included ground surface outdoors, indoors, aqueous, completely buried, partially buried, found within a vehicle, displaced, or unknown. The displaced category includes remains noted in the Investigator's Report or suggested by the forensic pathologists to have been discovered apart from the original point of deposition. Condition of remains upon initial discovery was assessed from photography taken upon arrival of the remains at the

CCMEO, since the forensic anthropologists are rarely called into the field to assist with recovery. Categories for condition of remains upon discovery include fully fleshed (no visually apparent decompositional openings in the soft tissue), partially decomposed (soft tissue demonstrates decompositional changes, with openings in soft tissue), severe decomposition with partial skeletonization (minimal skeletonized elements are visually appreciated), mostly skeletonized (more than 50% of the decedent was skeletonized, but remnant soft tissue is still visually appreciated inhibiting complete skeletal analysis), fully skeletonized, displaying thermal alteration (some component of soft or skeletal tissue demonstrated thermal alteration), or initial condition of remains was unknown.

Demographic variables of decedents, including estimation of age at death, sex, and ancestry, are not included in this analysis since the focus is on the composition of anthropological casework, rather than the decedents themselves. However, demographic analyses of decedents in anthropological casework in other jurisdictions have been provided by Falsetti [6], Grisbaum & Ubelaker [10], and Komar [9].

3 | RESULTS

A total of 132 cases (including human/nonhuman assessments) distributed over 10 years produce an average of 13.2 cases per year, with the greatest number of cases occurring in 2021 ($n = 19$, 14.3%) and the fewest in 2020 ($n = 8$, 6.0%) (Table 1).

The greatest number of cases were discovered each June ($n = 19$, 14.3%), with the fewest cases discovered each January ($n = 5$, 3.7%) (Figure 1). Summer months (June to September) demonstrated markedly greater caseload discovery compared to winter months (December to February).

Most cases were outdoor, ground surface recoveries ($n = 55$, 41.6%), with indoor recoveries being the second most common discovery context ($n = 30$, 22.7%). Fewer cases were displaced (believed to have been discovered apart from original location of deposition; $n = 16$, 12.1%), aqueous (recovered from Lake Michigan, local rivers, or canals; $n = 15$, 11.3%), buried ($n = 11$, 8.3%), partially buried ($n = 3$, 2.2%), in a vehicle ($n = 1$, 0.7%) or unknown ($n = 1$, 0.7%) (Figure 2).

Upon initial discovery, most cases were fully skeletonized ($n = 47$, 35.6%), many were in a state of severe decomposition with partial skeletonization ($n = 44$, 33.3%), a few were partially decomposed ($n = 17$, 12.8%), mostly skeletonized ($n = 13$, 9.8%), fully fleshed ($n = 4$, 3.0%), or displaying some degree of thermal alteration ($n = 4$, 3.0%) (Figure 3). No cases of cremation were reported.

While an anthropological consult request may include multiple analyses, 99 requests (75.0%) included biological profile estimation, 62 requests (46.9%) included trauma analysis, 17 (12.8%) included human/nonhuman assessment, and 5 (3.7%) requested estimation of the minimum number of individuals. In one case, the pathologist specifically requested age estimation only. Most requests included multiple analyses (most commonly requesting biological profile and trauma analysis) (Figure 4).

On average, from 2012 to 2022, 77.1 days elapsed from discovery of the decedent to a request for anthropology consult (time to notification, TTN), 60.3 days elapsed from consultation request to anthropology analysis of the case (time to analysis, TTA), and 14.1 days from the anthropological analysis to the final report submission (time to report, TTR). In 2012, data for TTN and TTA were not available for all cases. TTN and TTA were significantly influenced by a backlog of Medical Examiner casework, particularly of unidentified decedents, as well as staff availability to macerate partially or fully fleshed remains. For example, included in the 2014 casework were two cases brought to the CCMEO in 2010, one case from 2011 and two cases from 2012. These contributed to the large TTN and TTA annual averages for that year (Table 2).

TABLE 1 Number of forensic anthropology cases per year (March 2012–February 2022) at the CCMEO ($N = 132$)

Year	*n*
2012[a]	12
2013	13
2014	12
2015	18
2016	14
2017	9
2018	17
2019	9
2020	8
2021	19
2022[b]	1

[a]Data covering 10 months (March to December).
[b]Data covering 2 months (January to February).

4 | DISCUSSION

In this 10-year retrospective, forensic anthropology consultations at the Cook County Medical Examiner's Office demonstrate a range of casework and case conditions. In general, a "typical" case referred to anthropologists for analysis at the CCMEO consisted of skeletonized or partially skeletonized remains found on the ground surface with little to no indication of the decedent's identity and no perimortem skeletal trauma that could assist the pathologists' assessment of cause or manner of death. Less frequently, anthropologists were called in for consultation on cases involving isolated anatomical elements (such as crania denoted as "trophy skulls") or requested to confirm the identification of nonhuman, faunal remains at the CCMEO. This may be due to efforts by the Cook County Sheriff's Office and the Chicago Police Department to instruct officers to contact the CCMEO forensic anthropologists directly prior to creating a formal police report or initiating a case number at the CCMEO when recovered remains are suspected to be nonhuman.

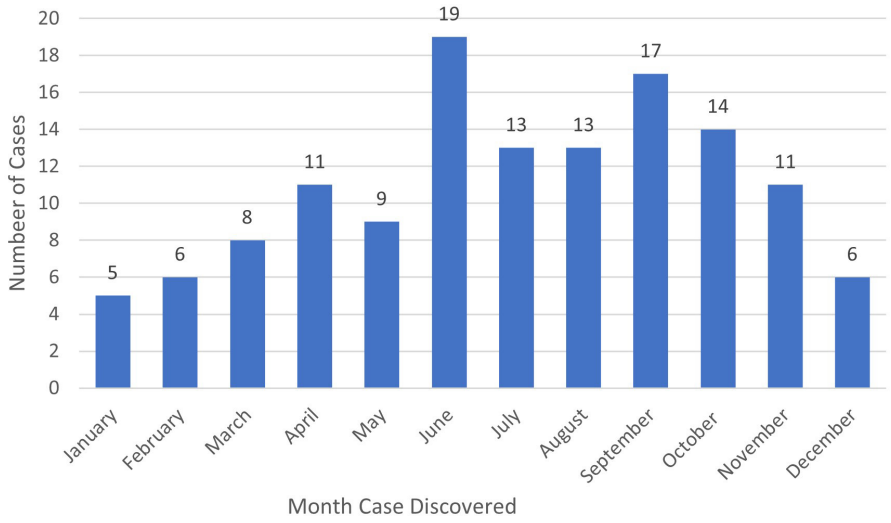

FIGURE 1 Forensic anthropology cases by month of discovery (total casework $N = 132$)

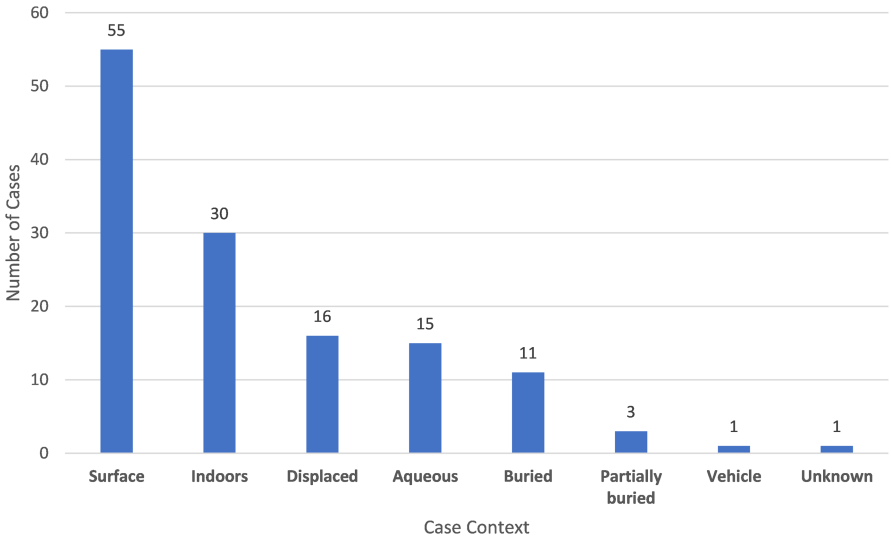

FIGURE 2 Forensic anthropology casework by discovery context (total casework $N = 132$)

Caseload number per year at the CCMEO was relatively consistent over the decade. Comparable to results from Pilloud et al. [21], we averaged 13.2 cases per year (including human/nonhuman assessments). T. Dale Stewart [8], during his period of maximum forensic casework, averaged 10.6 cases per year. Bass & Driscoll [22] noted a significant increase in caseload over time between 1971 to 1981. They attributed this increase to educational efforts in forensic anthropology at the University of Tennessee-Knoxville for students, law enforcement, and "citizens' groups" [22, p. 159]. The appreciable increase in our CCMEO caseload in 2021 (Table 1) was due to COVID-19 restrictions and protocols, which began in March 2020, yielding significant reduction of anthropological consultations in 2020 and a compensatory increase in 2021.

Data on caseload by month are directly related to the environment and climate of Illinois, specifically Cook County. Within the 10-year duration of this study, this area experienced variable precipitation (maximum precipitation of 10.35 inches, October 2017 and minimum precipitation of 0.36 inches, January 2022) and temperature (maximum monthly mean of 91.7°F, July 2012 and minimum monthly mean of 8.8°F, January 2014), with a Köppen-Geiger classification dfa subtype (hot summer humid continental) [23, 24]. In our analysis, most cases were discovered in warm, summer months (June and September) and least often discovered in winter (January). These results are comparable to those described by Pokines et al. [25], who report that human remains from Massachusetts are most frequently discovered in April and May and least frequently discovered in January and February. Pokines et al. [25] attribute this pattern, comparable to Illinois, to winter snow and ice melt, removal of leaf litter through human or nonhuman animal activity, increased pedestrian traffic and natural flora decomposition. Similarly, in his discussion of the work of Dr. William Maples and cases assessed through the C. A. Pound Human Identification Lab, Falsetti [6] reports that May and June yield the greatest number of forensic cases in Florida, with July to September being particularly slow. This pattern was attributed to the heat of summer months, which tends to attract pedestrian traffic to the coast and away from wooded areas where human remains are often discovered.

Other analyses of forensic anthropology casework report varying caseloads associated with month of discovery. Grisbaum and Ubelaker's [10] evaluation of cases submitted for forensic anthropological analysis to the Smithsonian Institution from the Federal Bureau of Investigations over a period of 30 years found that most

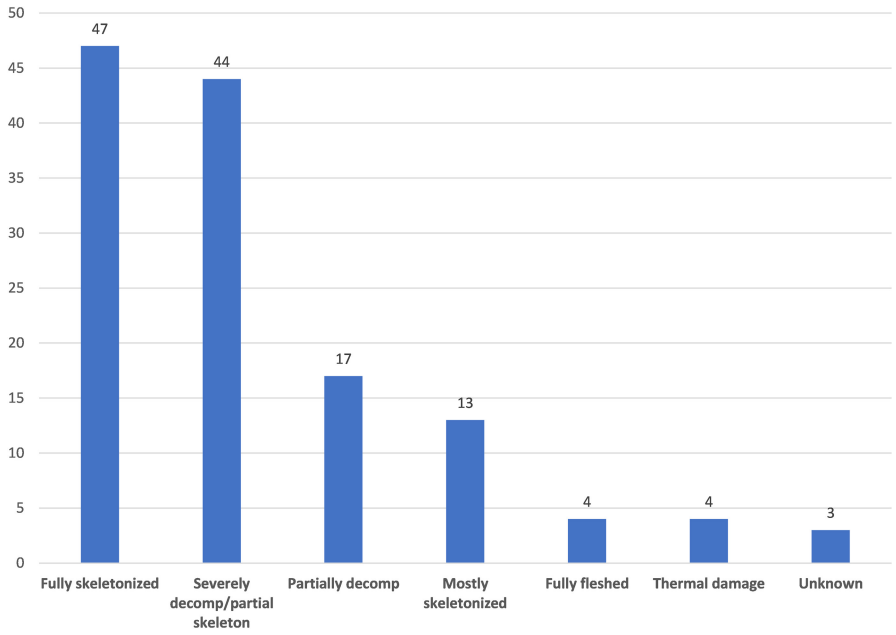

FIGURE 3 State of remains for anthropology casework (total casework $N = 132$)

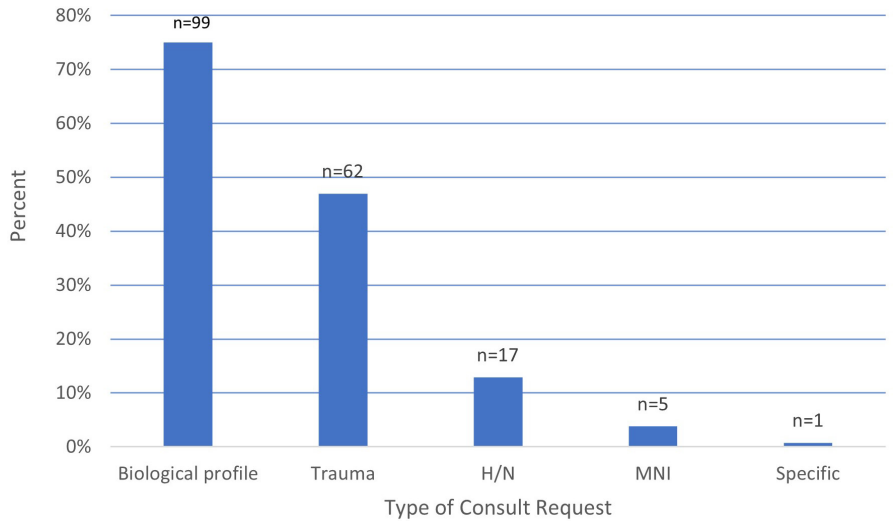

FIGURE 4 Types of forensic anthropology consult requests (single requests can include multiple types of analysis; H/N: Human/nonhuman, MNI: Minimum number of individuals; total casework $N = 132$)

TABLE 2 Elapsed days from discovery of decedent to anthropological consultation notification (TTN), from consultation request to anthropological analysis (TTA), and from anthropological analysis to final report submission (TTR) per year ($N = 132$ cases)

Variable	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
TTN	1.0	82.1	499.0	72.5	30.8	13.0	7.4	38.0	25.4	29.1	34.0
TTA	1.0	24.8	104.0	36.3	32.1	27.8	19.4	64.3	156.0	105.0	104.0
TTR	22.3	30.8	21.8	5.31	7.9	11.4	9.6	12.6	10.6	11.8	9.0

cases were discovered in November and May, and that the fewest cases were in February. Bass and Driscoll's [22] analysis of a decade of forensic anthropological casework in Tennessee notes that remains were most frequently discovered in January and discovered less often in April, July, and October.

The environmental contexts of remains brought to the CCMEO for anthropological analysis can also be compared to those reported in other laboratories and offices. Most of the CCMEO anthropology cases were discovered outdoors on the ground surface ($n = 55$, 41.6%), which is comparable to Pokines' [12] report, which notes that 25.8% of the cases were discovered outdoors on the ground surface. Similarly, Grisbaum and Ubelaker [10, p. 10] report that 23.9% of their cases were "exposed or buried outdoors." CCMEO cases associated with aqueous environments comprise 11.3% of all cases, while Pokines [12, p. 296] reports that 16.7% were "marine or river remains" and Grisbaum and Ubelaker [10, p. 10] notes that "remains retrieved from water or associated with water" constituted 15.8% of their sample. Pokines [12] attributes his findings to the

large coastline of Massachusetts. Similarly, Cook County borders Lake Michigan with inland areas frequently proximate to rivers and smaller channels.

Few assessments of forensic anthropology casework mention the type of consult or type of analysis requested by ME/Cs. While most consults in our analysis included biological profile (75.0%), trauma analysis (46.9%) was the second largest category, with many consult requests including multiple analyses. Requests for human versus nonhuman assessment were relatively uncommon (12.8%); however, among other cited data in the literature, values vary significantly. Pokines [12, 26, p. 235], for instance, reports in an analysis of casework between 2012 and a portion of 2014, that 90% of the caseload consisted of nonhuman remains. Falsetti [6] indicates that Maples' caseload included 11% nonhuman assessments, while Marks [5] reports that 21.7% of Bass' casework involved nonhuman versus human assessment. Bass and Driscoll [22, p. 161] report 20% of their caseload as "animal" (presumed to be nonhuman animal). Variation in the frequency or need of human versus nonhuman assessment may rest, as mentioned previously for the CCMEO, on ME/C protocols, as the law enforcement officers may contact the forensic anthropologists directly for a preliminary evaluation prior to formally entering the case into the ME/C system.

Evaluation of the intervals between discovery and anthropological consultation notification (TTN), consultation request to anthropological analysis (TTA) and analysis to report submission (TTR) provides interesting and varying results. The interval between time of discovery to time of consult notification (TTN) request varied considerably. This is due, in part, to the "consultant" role of the forensic anthropologists at the CCMEO, rather than being full-time employees embedded in the system and readily available for daily consultation. Other factors play a role, including pathologist's workload, prioritization of cases by pathologists, and their familiarity with the scope and benefits of forensic anthropology analyses. Many pathologists rotate through the CCMEO as Fellows with varying familiarity with forensic anthropology. Both authors invite Fellows to view forensic anthropology analyses and the first author (EBW) provides a formal lecture on forensic anthropology to Fellows annually. Additionally, it is common that anthropological consultations are not immediately requested upon initial analysis by forensic pathologists but may later be requested if other means of identification or trauma evaluation are unsuccessful. The delayed interval is most notable in 2014, when the average time to consult was 499 days due to two consult requests made that year for cases originally brought to the CCMEO in 2010, one case in 2011, and two cases in 2012. While these delays were uncharacteristically long, they suggest that the forensic pathologists had a growing familiarity with forensic anthropology and that presentations by both authors at the facility appeared to have successfully provided background and elaboration on anthropological techniques that inform forensic casework.

It is evident from the data that time from consultation request to anthropological analysis (TTA) also varied considerably over the decade under evaluation (Table 2). The fluctuation can be attributed to a number of factors. First, many cases require maceration, which is completed by CCMEO staff and affected by staff availability. The forensic anthropologists do not perform maceration due to contractual and time limitations. Another factor is case backlog. The Cook County Medical Examiner's Office suffered a backlog of cases in the early 2010s [27], but the appointment of a new Chief Medical Examiner during this period, as well as more consistent forensic anthropology consultation (by both coauthors) reduced this backlog. However, this contributed to the large and inconsistent numbers of consultations during this period. Lastly, the unexpected increase in deaths related to the COVID-19 pandemic in early 2020 [28] also contributed to a delay in anthropology consults for unidentified deaths, particularly those requiring maceration conducted by CCMEO staff.

Evaluation of data regarding time from anthropological analysis to report submission (TTR) was undertaken to investigate whether the authors were in compliance with their contractual obligation to submit reports within 30 days of in-person analysis. This statistic demonstrated the least variation over the 10-year duration. However, variation in case report submission is noteworthy, as it coincided with case complexity.

It is important to note the biases within our sample and methods. For instance, remains identified as historically Native American were not appreciated within our sample, although both authors have been asked to consult on such cases in neighboring jurisdictions during this time period. The categorization of "consultation type" also introduces bias. For instance, two cases brought to the CCMEO, which may be academically described as "trophy skulls" based on recovery context, were included in this study as the pathologists' requested consult was for "biological profile" and/or "MNI." These categorizations may not be consistent across jurisdictions. Lastly, forensic anthropologists at the CCMEO are rarely asked to assist with the in situ recovery of remains, although their contract stipulates that they must be available upon request in cases of "emergency consultation." In situ recovery without anthropological consultation or participation may result in the incomplete recovery of remains and reduced contextual information (anatomical placement of body and/or environmental variables) that can contribute to anthropological assessments. It is equally important to note that all anthropological consults at the CCMEO come at the request of the medical examiner/forensic pathologists who determine whether further assessment is warranted. Hence, it is imperative that medical examiners/forensic pathologists are aware of the scope of work conducted by forensic anthropologists and ways in which anthropological analysis can contribute to the assessment of human remains.

5 | CONCLUSIONS

Analyses of key aspects of forensic anthropology casework within jurisdictions provides practitioners and ME/C offices insights into both successful and vulnerable components of their casework. Delays in TTN might be mitigated, for instance, by

increasing forensic pathologists' understanding of the role and benefits of forensic anthropological consultation. Annual or semi-annual presentations by forensic anthropologists to pathologists and staff at ME/C facilities can help elucidate the utility of forensic anthropology in forensic casework. In some jurisdictions, delays in TTA appear sensitive to ME/C staffing, as maceration and preparation of cases rely upon sufficient numbers and adequate training of staff to complete the task. Lastly, variation in TTR rests in the hands of the forensic anthropologists, with particularly complex cases requiring adequate time for evaluation and outside consultation.

Comparative analyses between ME/C offices are uncommon but offer great promise in demonstrating the origins and implications of variation across locales. As noted by Pilloud et al. [21], the lack of baseline data concerning the composition of forensic anthropology casework affects the ability to appreciate a "normal" caseload or to be able to demonstrate need within ME/C offices. Comparative analyses also provide means to recognize ways to improve or streamline forensic anthropology consultations.

The field of forensic anthropology is becoming increasingly appreciated within the forensic community, with practitioners regularly serving as consultants or full-time staff of ME/Cs throughout the United States [29]. The NAME accreditation process for ME/C offices lists "access to forensic anthropology" [30, p. 9], "availability of expert consultants in…forensic anthropology" [30, p. 31], and the potential to be "affiliated with a forensic anthropologist certified by the American Board of Forensic Anthropology" [30, p. 32] as key aspects of the inspection process. With increasing recognition and focus on professionalization, standardization, and certification in the field [4, 31, 32], it is hoped that consistency among forensic anthropologists and ME/C offices, as well as clear communication within and beyond the field, will foster a growing appreciation for "specialist tacit knowledge" [3, p. 5] that is essential to the field of forensics as a whole.

Discussion of the range of services, support, and expertise forensic anthropologists provide ME/C offices broadens the understanding of the field, allows for the formulation of best practices, and serves as data upon which decisions regarding protocol, funding, resources, and need can be based. With additional practitioners collecting and sharing data, a clearer window into the scope and utility of the field will be appreciated by both our colleagues and the greater forensic scientific community.

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REFERENCES

1. Crowder CM, Wiersema JM, Adams BJ, Austin DE, Love JC. The utility of forensic anthropology in the Medical Examiner's Office. Acad Forensic Pathol. 2016;6(3):349–60. https://doi.org/10.23907/2016.037
2. Bartelink EJ, Boyd DC, France DL, Pokines J, Prince-Zinni D. The American Board of Forensic Anthropology turns 40: historical perspectives and current trends in certification for forensic anthropology. Forensic Anthropol. 2020;3(2):103–11. https://doi.org/10.5744/fa.2020.1017
3. Passalacqua NV, Pilloud MA, Congram D. Forensic anthropology as a discipline. Biology. 2021;10(8):691–708. https://doi.org/10.3390/biology10080691
4. Passalacqua NV, Mulholland S, Pilloud MA, Klales AR. The value of forensic anthropology in undergraduate anthropology programs. Am Anthropol. 2021;123(3):603–16. https://doi.org/10.1111/aman.13638
5. Marks MK, William M. Bass and the development of forensic anthropology in Tennessee. J Forensic Sci. 1995;40(5):741–50.
6. Falsetti AB. A thousand tales of dead men: the forensic anthropology cases of William R. maples, Ph.D. J Forensic Sci. 1999;44(4):682–6.
7. Ubelaker DH. Ales Hrdlicka's role in the history of forensic anthropology. J Forensic Sci. 1999;44(4):724–30. https://doi.org/10.1520/JFS14544J
8. Ubelaker DH. The forensic anthropology legacy of T. Dale Stewart (1901-1997). J Forensic Sci. 2000;45(2):245–52. https://doi.org/10.1520/JFS14675J
9. Komar DA. Twenty-seven years of forensic anthropology casework in New Mexico. J Forensic Sci. 2003;48(3):521–4. https://doi.org/10.1520/JFS2002078
10. Grisbaum GA, Ubelaker DH. Analysis of forensic anthropology cases submitted to the Smithsonian Institution by the Federal Bureau of Investigation from 1962 to 1994. Washington, DC: Smithsonian Institution Press; 2001. https://doi.org/10.5479/si.00810223.45.1
11. Christensen AM, Passalacqua NV, Schmunk GA, Fudenberg J, Hartnett K, Mitchell RA, et al. The value and availability of forensic anthropological consultation in medicolegal death investigations. Forensic Sci Med Pathol. 2015;11:438–41. https://doi.org/10.1007/s12024-015-9687-3
12. Pokines JT. The case of the… cases: the flow of the ordinary into a medical Examiner's office. In: Garvin HM, Langley NR, editors. Case studies in forensic anthropology: bonified skeletons. Boca Raton, FL: CRC Press; 2020. p. 291–302. https://doi.org/10.4324/9780429436987-27
13. Ost A, Messer D, Dirkmaat D. The role of forensic anthropologists at the fatal fire recovery: A retrospective study of cases from 1983-2020. Forensic Anthropol. 2022;5(1):46–52. https://doi.org/10.5744/fa.2021.0015
14. Fulginiti LC. Fatal footsteps: murder of undocumented border crossers in Maricopa County. Arizona J Forensic Sci. 2008;53(1):41–5. https://doi.org/10.1111/j.1556-4029.2007.00613.x
15. Hinkes MJ. Migrant deaths along the California-Mexico border: an anthropological perspective. J Forensic Sci. 2008;53(1):16–20. https://doi.org/10.1111/j.1556-4029.2007.00625.x
16. Spradley MK. Toward estimating geographic origin of migrant remains along the United States-Mexico border. Ann Anthropol Pract. 2014;38(1):101–10. https://doi.org/10.1111/napa.12045
17. Fleischman JM, Kendell AE, Eggers CC, Fulginiti LC. Undocumented border crosser deaths in Arizona: expanding intrastate collaborative efforts in identification. J Forensic Sci. 2017;62:840–9. https://doi.org/10.1111/1556-4029.13368
18. Spradley K, Gocha TP. Migrant deaths along the Texas/Mexico border: a collaborative approach to forensic identification of human remains. In: Parra RC, Zapico SC, Ubelaker DH, editors. Forensic

science and humanitarian action: interacting with the dead and the living. Hoboken, NJ: John Wiley & Sons; 2020. p. 535–48. https://doi.org/10.1002/9781119482062.ch34
19. Forest Preserves of Illinois. https://fpdcc.com/. Accessed 12 July 2022.
20. Medical Examiner's Office. https://www.cookcountyil.gov/agency/medical-examiners-office. Accessed 1 Feb 2022.
21. Pilloud MA, Passalacqua NV, Philbin CS. Caseloads in forensic anthropology. Am J Biol Anthropol. 2022;177:556–65. https://doi.org/10.1002/ajpa.24471
22. Bass WM, Driscoll PA. Summary of skeletal identification in Tennessee: 1971-1981. J Forensic Sci. 1983;28(1):159–68.
23. National Oceanic and Atmospheric Administration. National Centers for Environmental Information. https://www.ncei.noaa.gov/. Accessed 14 July 2022.
24. Kottek M, Grieser J, Beck C, Rudolf B, Rubel F. World map of the Köppen-Geiger climate classification updated. Meteorol Z. 2006;15:259–63. https://doi.org/10.1127/0941-2948/2006/0130
25. Pokines JT, Eck CJ, Sharpe ME. Sources of skeletal remains at a chief medical Examiner's office: who finds the bones? J Forensic Identif. 2017;67(2):278–99.
26. Pokines JT. Identification of nonhuman remains received in a medical examiner setting. J Forensic Identif. 2015;65(3):223–46.
27. Schaper D.. Families suffer through Chicago morgue backlog. National Public Radio 2012 Feb 2. https://www.npr.org/2012/02/02/146197363/families-suffer-through-chicago-morgue-backlog. Accessed 24 Aug 2022.
28. Tarm M. Chicago morgue coping despite historic surge in deaths due to the coronavirus pandemic. The Chicago Tribune. 2020 May 13. https://www.chicagotribune.com/coronavirus/ct-nw-chicago-morgue-coronavirus-deaths-20200512-dwp74hh4xfbgdfc2sgcvimj5bq-story.html. Accessed 24 Aug 2022.
29. Christensen AM, Pokines JT. Discovery context of skeletal remains received at the Federal Bureau of Investigation Laboratory. Forensic Anthropol. 2020;3(1):59–63. https://doi.org/10.5744/fa.2020.1007
30. National Association of Medical Examiners. NAME inspection and accreditation Checklist 2019. https://www.thename.org/assets/docs/NAME%20Accreditation%20Checklist%202019%20-%202024.pdf. Accessed 5 Jan 2022.
31. Passalacqua NV, Pilloud MA. Education and training in forensic anthropology. Forensic Anthropol. 2020;3(3):65–74. https://doi.org/10.5744/fa.2020.1013
32. Passalacqua NV, Pilloud MA. The need to professionalize forensic anthropology. Eur J Anat. 2021;25(S2):35–47. https://doi.org/10.3390/biology10080691

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