Title

Terminology for melanocytic skin lesions and the MPATH-Dx classification schema: A survey of dermatopathologists

Journal

Journal of Cutaneous Pathology, 48(6)

ISSN

0303-6987

Authors

Radick, Andrea C
Reisch, Lisa M
Shucard, Hannah L
et al.

Publication Date

2021-06-01

DOI

10.1111/cup.13873

Peer reviewed

HHS Public Access

Author manuscript

J Cutan Pathol. Author manuscript; available in PMC 2022 June 01.

Published in final edited form as:

J Cutan Pathol. 2021 June ; 48(6): 733–738. doi:10.1111/cup.13873.

Terminology for Melanocytic Skin Lesions and the MPATH-Dx Classification Schema: A Survey of Dermatopathologists

Andrea C. Radick[1], **Lisa M. Reisch**[1], **Hannah L. Shucard**[1], **Michael W. Piepkorn**[2,3], **Kathleen F. Kerr**[1], **David E. Elder**[4], **Raymond L. Barnhill**[5], **Stevan R. Knezevich**[6], **Natalia Oster**[1], **Joann G. Elmore**[7]

[1]Department of Biostatistics, University of Washington, Seattle, WA, USA

[2]Division of Dermatology, Department of Medicine, University of Washington School of Medicine, Seattle, WA, USA

[3]Dermatopathology Northwest, Bellevue, WA, USA

[4]Department of Pathology and Laboratory Medicine, Division of Anatomic Pathology, Hospital of the University of Pennsylvania, Philadelphia, PA, USA

[5]Departments of Pathology and Translational Research, Institut Curie, Paris Sciences and Lettres Research University, and Faculty of Medicine University of Paris Descartes, Paris, France

[6]Pathology Associates, Clovis, CA, USA

[7]Department of Medicine, University of California, Los Angeles, David Geffen School of Medicine, Los Angeles, CA, USA

Abstract

Background: Diagnostic terms used in histopathology reports of cutaneous melanocytic lesions are not standardized. We describe dermatopathologists' views regarding diverse diagnostic terminology and the utility of the Melanocytic Pathology Assessment Tool and Hierarchy for Diagnosis (MPATH-Dx) for categorizing melanocytic lesions.

Methods: July 2018–2019 survey of board-certified and/or fellowship-trained dermatopathologists with experience interpreting melanocytic lesions.

Results: Among 160 participants, 99% reported witnessing different terminology being used for the same melanocytic lesion. Most viewed diverse terminology as confusing to primary care physicians (98%), frustrating to pathologists (83%), requiring more of their time as a consultant (64%), and providing necessary clinical information (52%). Most perceived that adoption of the MPATH-Dx would: improve communication with other pathologists and treating physicians (87%), generally be a change for the better (80%), improve patient care (79%), be acceptable to clinical colleagues (68%), save time in pathology report documentation (53%), and protect from malpractice (51%).

Correspondence to: Andrea Radick, MS, University of Washington, Department of Biostatistics, 4333 Brooklyn Ave NE| Seattle, WA 98195, Mailbox 359461, Phone: 206-221-5516, radica@uw.edu.

Conflict of Interest Disclosures: The authors do not have any relevant financial conflicts of interest.

Conclusions: Most dermatopathologists view diverse terminology as contributing to miscommunication with clinicians and patients, adversely impacting patient care. They view the MPATH-Dx as a promising tool to standardize terminology and improve communication. The MPATH-Dx may be a useful supplement to conventional pathology reports. Further revision and refinement are necessary for widespread clinical use.

Keywords

dermatopathology; melanocytic lesions; terminology; diagnosis; standardization

INTRODUCTION

The use of non-standardized terminology in medicine can lead to inconsistent diagnoses[1–3] and suboptimal management of patients.[4]. In the field of melanocytic lesion pathology, language is not standardized and a diverse range of diagnostic terms exists.[5,6] A standardized schema that provides guidelines for clinical management could improve the quality of melanocytic lesion diagnosis reporting and communication, similar to that observed with the Breast Imaging Reporting and Data System (BI-RADS) in breast radiology.[7,8] Since its establishment in the late 1980s, the BI-RADS system with its lexicon of standardized terms and categories with management interventions has improved the quality assurance for mammography interpretation, reporting, communication, education and research.[9–11] A 2002 study of 82,620 mammograms found that overall concordance between the diagnostic assessments of radiologists and BI-RADS recommendations was high (97.1%) and that concordance increased over the 4-year study period.[10]

Although standardized reporting of melanoma histopathology has been proposed and implemented [12–16], a standardized taxonomy for the classification of the entire spectrum of melanocytic skin lesions, i.e., from benign to malignant, has been lacking. Accordingly, the Melanocytic Pathology Assessment Tool and Hierarchy for Diagnosis (MPATH-Dx) schema has been developed for this express purpose.[17] The MPATH-Dx tool has the potential to reduce confusion among pathologists and other clinicians by categorizing diverse nomenclature based on perceived risk of lesions for adverse outcome and corresponding suggested management interventions. A study evaluating the application of the MPATH-Dx schema to the independent diagnostic evaluation of 48 melanocytic lesions by participants from the International Melanoma Pathology Study Group. found that the wide range of diverse nomenclature can be categorized into a clear hierarchy. [18]

Widespread adoption of a standardized taxonomy depends on pathologists perceiving the value of such a tool. This paper describes the experiences and opinions among a national sample of U.S. dermatopathologists on the current situation of diverse terminology for classifying melanocytic skin lesions, as well as their perspectives regarding the usefulness of the MPATH-Dx schema as a standardized reporting tool.

MATERIALS AND METHODS

We conducted a nation-wide study funded by the National Cancer Institute (NCI) called “Reducing Errors in Melanocytic Interpretations (REMI)”. The goal of the study was to

examine the variation in, and influences on, dermatopathologists' diagnoses of melanocytic lesions.

A list of potential participants from across the U.S. was generated using databases from Direct Medical Data, LLC; invitations to enroll in the study were sent to 702 randomly identified dermatopathologists between July 2018 and July 2019. Potential participants were contacted by email (maximum of three attempts), followed by telephone (maximum of two attempts) and postal mail (one attempt) to verify eligibility and recruit into the study. Eligible participants met the following criteria: board-certified and/or fellowship-trained in dermatopathology, interpreted melanocytic skin biopsies within the previous year, and expected to continue interpreting melanocytic skin lesions for the next two years. Residents and fellows in training were not eligible.

As a part of the study, participants completed an online survey as described previously.[19,20] The survey queried dermatopathologists about their demographics, training, experience, clinical practice, opinions on diverse terminology and adoption of the MPATH-Dx schema for reporting interpretations of melanocytic skin lesion cases. The survey questions pertaining to diverse terminology and adoption of the MPATH-Dx for classifying melanocytic skin lesions are available in the electronic appendix. We describe the survey results using frequency of responses.

RESULTS

Of the 702 potential participants invited, 226 (32%) were verified as eligible and of those, 160 (71%) enrolled in the study. Demographic and clinical characteristics of the participants are shown in Table 1. The majority were male (67%), 40 years old or older (83%), had an academic medical center affiliation (54%), and completed residency training in anatomic/clinical pathology (55%). A majority (61%) reported 10 or more years of experience interpreting melanocytic skin lesions, and most (96%) reported that at least 10% of their usual caseload consisted of melanocytic skin lesion cases.

Nearly all participants (99%) had witnessed different terminology used to describe the same melanocytic skin lesion. Opinions on the diverse terminology being used for melanocytic skin lesion diagnosis and adoption of the MPATH-Dx schema are shown in Figure 1. Most participants viewed diverse terminology as confusing to primary care physicians (98%), frustrating to pathologists (83%), and requiring more of their time as a consultant on a case (64%). About half (52%) viewed diverse terminology as providing necessary clinical information about the lesion.

Only 33% of participants were familiar with the MPATH-Dx at the time of the survey (Table 1). After reviewing a summary table of the MPATH-Dx schema, participants were asked to rate their confidence in using the MPATH-Dx in clinical practice on a 6-point Likert scale from 1 being not at all confident to 6 being very confident and as shown in Table 1, 45% reported either a 5 or 6, with 69% of respondents giving a 4,5 or 6. Most participants perceived that uniform adoption of the MPATH-Dx would improve communication with other pathologists and treating physicians (87%), generally be a change for the better (80%),

improve patient care (79%), and be acceptable to their clinical colleagues (68%) (Figure 1). About half considered that the standardized reporting schema would save them time in pathology report documentation (53%) and would protect them from malpractice (51%).

DISCUSSION

Nearly all dermatopathologists reported witnessing different terminology usage for the same melanocytic skin lesion, and view the current use of diverse terminology as contributing to miscommunication with clinicians and increased time spent on cases. However, slightly over half also considered that the diverse terminology provides necessary clinical information about the lesion. Only a third of our participants were previously familiar with the MPATH-Dx standardized schema, and, after brief education as a part of the study, 69% expressed confidence in their ability to use the MPATH-Dx in practice. The great majority agree that adoption of the MPATH-Dx would improve communication and patient care, be acceptable to colleagues, and generally be a change for the better.

Communication regarding a diagnosis is an important part of clinical medicine and the practice of pathology.[21–23] Pathology reports must be clear and comprehensible to guide clinical care and avoid medical errors[24]. As pathology reports are disseminated in new ways (e.g., via patient portals directly to patients), the audience for reports broadens to include individuals who are much less adept at deciphering medical jargon and diverse terminology compared with clinicians.[25] Adoption of a standardized taxonomy is, therefore, more critical now than ever. Due to patient access to online pathology reports, the dermatopathologists participating in this study reported increases in their perception of patient concern and worry.[19] Additionally, in response to patients having access to online pathology reports, these dermatopathologists express a desire to decrease use of abbreviations and/or specialized terminology in pathology reports and to change the way they describe lesions suspicious for cancer.[19] A standardized reporting schema can help accomplish these goals. The standardized language in MPATH-Dx may benefit patients with access to medical records by virtue of simplifying language that will render pathologists' interpretations more interpretable to the public.

The MPATH-Dx is also useful for stratifying the diversity of terms for melanocytic lesions into five ordinal categories. Prior research using natural language processing to analyze reports on over 80,000 skin biopsies concluded that the categorization of melanocytic proliferations using the MPATH-Dx schema may be helpful for future research on the epidemiology and biology of melanocytic lesions.[26]

Limitations and strengths

Recruitment was limited to dermatopathologists, and the findings may therefore not be generalizable to other pathologists. Participants may have been more interested in improving the diagnostic process for melanocytic skin lesions than nonparticipants, which may have led to more favorable responses for uniform adoption of the MPATH-Dx. Additionally, there is always the possibility for study participants to provide socially desirable responses, and the survey questions themselves may have biased participants toward the potential positives of MPATH-Dx adoption. Also, survey questions cannot capture a complete picture of the

complexities present in dermatopathology practice. For instance, our survey asked participants if they had witnessed different terminology being used to describe the same melanocytic skin lesion, but did not ask whether or how these differences may have influenced the final diagnosis of a case or the clinical management of the patient. Finally, participants' perceptions of the MPATH-Dx were provided prior to utilizing it with actual cases. However, in other studies we have found that a similar cohort of participants used the schema with good reproducibility.[6] Strengths of this study include a 71% response rate, which surpasses standards for physician surveys[27–29], and recruitment of a national sample of dermatopathologists from both academic and private practices.

It has been noted that it takes an average of 17 years to incorporate new evidence into clinical practice.[30] Future research could assess the barriers to clinicians adopting the MPATH-Dx, both to facilitate its adoption and to continue to refine and improve the tool. While this paper reports survey results, we acknowledge that the utility of MPATH-Dx must ultimately be evaluated through its implementation in clinical practice. We also acknowledge that the diagnostic process involves evaluating variables that are on a continuous scale and judging them against thresholds.[31] Morphological diagnosis is inherently challenging, and any diagnostic schema, whether morphological or ancillary, should avoid imparting a misleading sense of precision. Finally, while the goal of the MPATH-Dx schema is to simplify the diagnostic process, it should not be used to mask the complexity and diversity of melanocytic neoplasia.

Conclusion

Results suggest that the MPATH-Dx, a schema based on standardized terminology with ordinal risk assessment and suggested treatment interventions, is viewed by most dermatopathologists as a promising tool to standardize terminology and thereby reduce miscommunication with clinicians and patients. Of note, a majority of respondents in this study considered that the current terminology, despite its limitations, provides necessary clinical information about the lesion. This suggests that the MPATH-Dx, or another standardized taxonomy, could supplement rather than replace traditional pathology reports. Indeed, any changes to lesion reporting must ensure that the necessary clinical information remains intact, as this is critical to patient care.

Further input from leaders in the field, ideally in the form of a multidisciplinary consensus conference, will be necessary to revise and refine the MPATH-Dx categories before it becomes adopted in routine practice. In the interim, a simplified schema such as the MPATH-Dx for reporting on melanocytic lesions can be used in practice settings where there is good communication and agreement among pathologists and their client-clinicians. A simplified schema such as MPATH-Dx could additionally be useful to both researchers and educators to organize and clarify the confusing range of subjective nomenclatures, which would otherwise be difficult to analyze and learn without a structure for their characterization.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgements

Funding/Support: This study was supported by National Cancer Institute (NCI) grant R01 CA201376, with additional support from the National Institutes of Health (NIH)/National Center For Advancing Translational Sciences UL1 TR002319 and the NIH/NCI Cancer Center Support Grant P30 CA015704.The content is solely the responsibility of the authors. The NCI had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

All procedures were HIPAA compliant, and approval was obtained from the Institutional Review Boards of the Fred Hutchinson Cancer Research Center (9551) and the David Geffen School of Medicine at UCLA (17–001881).

Additional Contributions: We thank the study participants for their commitment to improving clinical care in dermatopathology.

REFERENCES

1. Bravenboer N, Bredella MA, Chauveau C, et al. Standardised Nomenclature, Abbreviations, and Units for the Study of Bone Marrow Adiposity: Report of the Nomenclature Working Group of the International Bone Marrow Adiposity Society. Front Endocrinol (Lausanne). 2019;10:923. [PubMed: 32038486]
2. Grant MJ, Booth A. A typology of reviews: an analysis of 14 review types and associated methodologies. Health Info Libr J. 2009;26(2):91–108. [PubMed: 19490148]
3. Johal J, Fisahn C, Burgess B, et al. The Dens: A Review of its Diverse Nomenclature and a Recommended Simplified Terminology. Cureus. 2017;9(1):e981. [PubMed: 28229029]
4. Upadhyaya JD, Fitzpatrick SG, Cohen DM, et al. Inter-observer Variability in the Diagnosis of Proliferative Verrucous Leukoplakia: Clinical Implications for Oral and Maxillofacial Surgeon Understanding: A Collaborative Pilot Study. Head Neck Pathol. 2020;14(1):156–165. [PubMed: 30972634]
5. Elmore JG, Barnhill RL, Elder DE, et al. Pathologists' diagnosis of invasive melanoma and melanocytic proliferations: observer accuracy and reproducibility study. BMJ. 2017;357:j2813. [PubMed: 28659278]
6. Lott JP, Elmore J, Zhao GA, et al. Evaluation of the MPATH-Dx Classification Scheme for Diagnosis of Cutaneous Melanocytic Neoplasms: Results from the International Melanoma Pathology Study Group. J Am Acad Dermatol. 2016;75(2):356. [PubMed: 27189823]
7. Strigel RM, Burnside ES, Elezaby M, et al. Utility of BI-RADS Assessment Category 4 Subdivisions for Screening Breast MRI. AJR Am J Roentgenol. 2017;208(6):1392–1399. [PubMed: 28792802]
8. Eberl MM, Fox CH, Edge SB, Carter CA, Mahoney MC. BI-RADS classification for management of abnormal mammograms. J Am Board Fam Med. 2006;19(2):161–164. [PubMed: 16513904]
9. Burnside ES, Sickles EA, Bassett LW, et al. The ACR BI-RADS Experience: Learning From History. Journal of the American College of Radiology. 2009;6(12):851–860. [PubMed: 19945040]
10. Lehman C, Holt S, Peacock S, White E, Urban N. Use of the American College of Radiology BI-RADS guidelines by community radiologists: concordance of assessments and recommendations assigned to screening mammograms. AJR Am J Roentgenol. 2002;179(1):15–20. [PubMed: 12076896]
11. Kirshenbaum K, Harris K, Harmon J, Monge J, Dabbous F, Liu Y. BI-RADS 3 (short-interval follow-up) assessment rate at diagnostic mammography: Correlation with recall rates and utilization as a performance benchmark. Breast J. 2020;26(7):1284–1288. [PubMed: 32291841]
12. Batistatou A GO, Cook MG, Massi D. Dermatopathology Working Group of the European Society of Pathology. Virchows Arch. 2011;458(3):359–361. [PubMed: 21193926]
13. Cook MG, Massi D, Szumera-Cieckiewicz A, et al. An updated European Organisation for Research and Treatment of Cancer (EORTC) protocol for pathological evaluation of sentinel lymph nodes for melanoma. Eur J Cancer. 2019;114:1–7. [PubMed: 31005015]

14. Batistatou A, Gokoz O, Cook MG, Massi D, Dermatopathology Working Group of the European Society of P. Melanoma histopathology report: proposal for a standardized terminology. Virchows Arch. 2011;458(3):359–361. [PubMed: 21193926]
15. Scolyer RA, Rawson RV, Gershenwald JE, Ferguson PM, Prieto VG. Melanoma pathology reporting and staging. Mod Pathol. 2020;33(Suppl 1):15–24. [PubMed: 31758078]
16. Cancer IAfRo. WHO Classification of Skin Tumours. Vol 11. 4th ed2018.
17. Piepkorn MW, Barnhill RL, Elder DE, et al. The MPATH-Dx reporting schema for melanocytic proliferations and melanoma. J Am Acad Dermatol. 2014;70(1):131–141. [PubMed: 24176521]
18. Lott JP, Elmore JG, Zhao GA, et al. Evaluation of the Melanocytic Pathology Assessment Tool and Hierarchy for Diagnosis (MPATH-Dx) classification scheme for diagnosis of cutaneous melanocytic neoplasms: Results from the International Melanoma Pathology Study Group. J Am Acad Dermatol. 2016;75(2):356–363. [PubMed: 27189823]
19. Shucard H, Piepkorn MW, Reisch LM, et al. Dermatopathologists' Experience With and Perceptions of Patient Online Access to Pathologic Test Result Reports. JAMA Dermatol. 2020;156(3):320. [PubMed: 31995131]
20. Reisch LM, Flores MJ, Radick AC, et al. Malpractice and Patient Safety Concerns. Am J Clin Pathol. 2020.
21. Dintzis S. Improving Pathologists' Communication Skills. AMA J Ethics. 2016;18(8):802–808. [PubMed: 27550564]
22. Dintzis SM, Stetsenko GY, Sitlani CM, Gronowski AM, Astion ML, Gallagher TH. Communicating pathology and laboratory errors: anatomic pathologists' and laboratory medical directors' attitudes and experiences. Am J Clin Pathol. 2011;135(5):760–765. [PubMed: 21502431]
23. Lehr HA, Bosman FT. Communication skills in diagnostic pathology. Virchows Arch. 2016;468(1):61–67. [PubMed: 26481246]
24. Powsner SM, Costa J, Homer RJ. Clinicians are from Mars and pathologists are from Venus. Arch Pathol Lab Med. 2000;124(7):1040–1046. [PubMed: 10888781]
25. Lott JP, Piepkorn MW, Elmore JG. Dermatology in an age of fully transparent electronic medical records. JAMA Dermatol. 2015;151(5):477–478. [PubMed: 25607470]
26. Lott JP, Boudreau DM, Barnhill RL, et al. Population-Based Analysis of Histologically Confirmed Melanocytic Proliferations Using Natural Language Processing. JAMA Dermatol. 2018;154(1):24–29. [PubMed: 29094145]
27. Brtnikova M, Crane LA, Allison MA, Hurley LP, Beaty BL, Kempe A. A method for achieving high response rates in national surveys of U.S. primary care physicians. PLoS One. 2018;13(8):e0202755.
28. Asch DA, Jedrziewski MK, Christakis NA. Response rates to mail surveys published in medical journals. J Clin Epidemiol. 1997;50(10):1129–1136. [PubMed: 9368521]
29. Cummings SM, Savitz LA, Konrad TR. Reported response rates to mailed physician questionnaires. Health Serv Res. 2001;35(6):1347–1355. [PubMed: 11221823]
30. Morris ZS, Wooding S, Grant J. The answer is 17 years, what is the question: understanding time lags in translational research. J R Soc Med. 2011;104(12):510–520. [PubMed: 22179294]
31. Piepkorn MW, Longton GM, Reisch LM, et al. Assessment of Second-Opinion Strategies for Diagnoses of Cutaneous Melanocytic Lesions. JAMA Netw Open. 2019;2(10):e1912597.

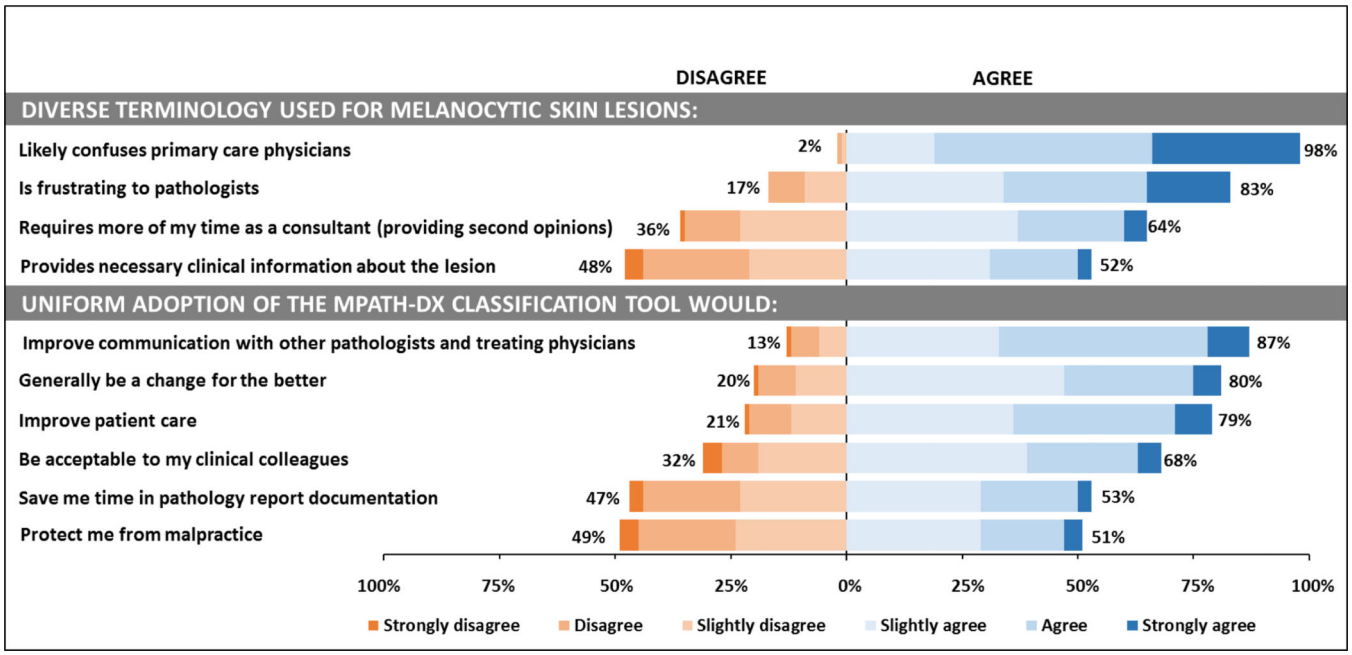

Figure 1.

Opinions on diverse terminology used for melanocytic skin lesion diagnosis and uniform adoption of the MPATH-Dx classification tool (N=160).

Table 1:

Self-reported characteristics of study pathologists (N=160)

Physician Characteristics	N (%)
Demographics	
Age (yrs.)	
<40	29 (18)
40 – 49	65 (41)
50 – 59	43 (27)
≥60	23 (15)
Gender	
Female	51 (32)
Male	107 (67)
Prefer not to answer	2 (1)
Geographical region[a]	
Northeast	31 (19%)
Midwest	49 (31%)
Southern	64 (40%)
Western	16 (10%)
Training and Experience	
Affiliation with academic medical center	
No	75 (47)
Yes, adjunct/affiliated	49 (31)
Yes, primary appointment	36 (23)
Residency	
Anatomic Pathology	28 (18)
Anatomic/Clinical Pathology	88 (55)
Dermatology	52 (33)
Other[b]	3 (2)
Fellowship	
No fellowship	2 (1)
Surgical pathology	30 (19)
Dermatopathology[c]	158 (99)
Other[d]	11 (7)
Board certification	
Not board certified	0 (0)
Dermatology	51 (32)
Anatomic pathology	116 (73)
Clinical pathology	84 (53)

Physician Characteristics	N (%)
Dermatopathology[e]	159 (99)
Other[f]	10 (6)
Years interpreting melanocytic skin lesions	
<5	18 (11)
5 – 9	44 (28)
10 – 19	66 (41)
≥20	32 (20)
Percent of caseload interpreting melanocytic skin lesions	
<10%	7 (4)
10 – 24%	74 (46)
25 – 49%	57 (36)
≥50%	22 (14)
Diverse terminology for melanocytic skin lesions and the MPATH-Dx classification tool	
Have you witnessed different terminology being used to describe the same melanocytic skin lesion?	
No	1 (1)
Yes	158 (99)
Unsure	1 (1)
Are you already familiar with the MPATH-Dx classification tool?	
No	87 (54)
Yes	52 (33)
Unsure	21 (13)
How confident would you be in using the MPATH-Dx classification tool in clinical practice?	
1-Not at all confident	7 (4)
2	10 (6)
3	32 (20)
4	39 (24)
5	46 (29)
6-Very confident	26 (16)

[a] U.S. Census Bureau Regions: https://www.census.gov/prod/1/gen/95statab/preface.pdf

[b] 'Other' includes residencies in internal medicine and general surgery

[c] Two participants reported board certification in dermatopathology, but are not fellowship-trained in dermatopathology

[d] 'Other' includes the following responses for fellowship training: cytopathology, GI and Hepatic pathology, hematology, hematopathology, molecular pathology, soft tissue pathology, and transfusion medicine

[e] One participant reported fellowship training in dermatopathology, but are not board-certified in dermatopathology

[f] 'Other' includes the following responses for board certification: cytopathology, DI/DLI, forensic pathology, hematology, hematopathology, internal medicine, and transfusion medicine