

History's Toolbox in Health Professions Education: One Skill-Based Session on Social Determinants of Health

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ABSTRACT

Aimed at clinical educators, this article reports on the use of a single skill-based session that introduces learners in Health Professions Education (HPE) to basic techniques from the discipline of history. The premise of the teaching method is a correspondence between medicine's social determinants of health (SDH) and categories of analysis commonly used by historians. At the center are eight categories, or "tools": *social, cultural, intellectual, technological, political, economic, racial/ethnic, and gendered*. Like the direct and specific implications of many diagnostic signs, each of these adjectives indicate to historians specific types of factors, or determinants. The intervention employs the demonstration-performance teaching method (explanation, demonstration, supervised practice, and evaluation). After the session, learners are able to: use "history's toolbox" as a systematic method for evaluating socio-cultural phenomena inherent in SDH; differentiate eight types of determinants in a historical case study that represents socio-cultural complexity; recognize how categorization simultaneously enhances some determinants while obscuring others, and how the use of constructed social categories in medicine can function to help and harm patients and populations. The intervention described is rooted in scholarship and theoretical questions belonging to the discipline of history, but these are not discussed. Neither the historical content nor the teaching method described here is appropriate for research or teaching in the discipline of history.

KEYWORDS: social determinants of health; clinical decision-making; history of medicine; medical education; competencies; medical humanities

Medical curriculum committees in North America are increasingly receptive to reincorporating the history of medicine into clinical education, especially as a means to increase competencies around sociopolitical and transcultural aspects of providing equitable healthcare. It is not always apparent, however, how to make history come alive as a critical and valuable component of medical training. This report describes how historical research methods can be used to increase learners' sensibilities around the socio-cultural complexities inherent in social determinants of

health (SDH). The World Health Organization (WHO) defines SDH as “conditions in which people are born, grow, live, work, and age.”¹ Experts in Health Professions Education (HPE) emphasize that it is vital that future physicians grasp that SDH shape health outcomes for individual patients and communities, and that SDH are within every clinician’s purview as a health-care provider.²

The term *social* and its close cousin, *cultural*, are inescapably relevant to learning how to deliver accessible, equitable healthcare in the twenty-first century. The Project to Rebalance and Integrate Medical Education (PRIME) convened recently to assess humanities teaching and ethics in medicine. Its multi-disciplinary panel of experts concluded that: 1) “medicine is a profoundly social enterprise requiring that the social dimensions of medicine be identified and critically appraised,” and 2) that humanities-based interventions have “an essential role to play in equipping medical students and residents with the tools to critically appraise ... how the medical profession should understand and manage its complex relationship with society.”³ The American Academy of Family Physicians (AAFP) maintains that “culturally proficient health care” makes use of a patient’s own language and culture “as tools to improve outcomes for that individual.”⁴ To meet accreditation standards, moreover, North American medical schools must now demonstrate social accountability to the communities they serve. Student advocacy groups emphasize that a “lack of socioeconomic diversity among medical students produces physicians who are not representative of their patients and serves to exacerbate inequities in access to care.” In response, medical faculties are responding with admission programs that consider socioeconomic criteria.⁵ Most urgently, medical education must reflect the reality that “race is not a biologic category based on innate differences that produce unequal health outcomes,” but is rather “a social category that reflects the impact of unequal social experiences on health.”⁶ Socio-cultural factors, therefore, also matter when crafting healthcare and public health policy.⁷ The medical literature, nevertheless, yields no clear consensus on what distinguishes “non-social” from “social” determinants.⁸ Borrowing from history’s longer critical engagement with this terminology offers clarification and opportunities to increase physician competency.

The aim of the learning intervention described below is to improve HPE learners’ ability to recognize the significance of context to socio-cultural complexity in SDH. History’s toolbox evolved from historians’ efforts to deal deftly with complexity and context. Societies and cultures, which are distinct concepts, are both constituted by innumerable interdependent and context-dependent phenomena. They are, in a word, complex. A recent attempt to arrive at a global definition of Family Medicine concluded that the specialty was, by its very nature, complex and context-specific: “This context specificity exists on a number of scales. It is grounded at the individual patient level where complex comorbidities make a non-family physician specialist

1 World Health Organization, Commission on the social determinants of health. Accessed July 2020. http://www.who.int/social_determinants/en/.

2 A. Doobay-Persaud, et al., “Teaching the Social Determinants of Health in Undergraduate Medical Education: a Scoping Review,” *Journal of General Internal Medicine* 34 (2019): 720-730.

3 David Doukas, Laurence McCullough, Stephen Wear, “Medical Education in Medical Ethics and Humanities as the Foundation for Developing Medical Professionalism,” *Academic Medicine* 87 (2012), 334-341.

4 American Academy of Family Physicians, “Cultural Sensitivity: The Importance of Cultural Sensitivity in Providing Effective Care for Diverse Populations (Position Paper),” published online 2008; updated 2019, <https://www.aafp.org/about/policies/all/cultural-diverse-populations.html>.

5 Rishad Khan, et al., “Socioeconomic Status as a Determinant for Medical School Admissions (Position Paper),” *Ontario Medical Students Association*, published online 2016, <https://omsa.ca/en/position-papers/socioeconomic-status-determinant-medical-school-admissions>.

6 Christina Amutah, Kaliya Greenidge, Adjoa Mante, Michelle Munyikwa, Sanjna L. Surya, Eve Higginbotham, David Jones, Risa Lavizzo-Mourey, Dorothy Roberts, Jennifer Tsai, Jaya Aysola, “Misrepresenting Race—the Role of Medical Schools in Propagating Physician Bias,” *New England Journal of Medicine* 384 (2021), 872-878.

7 Davis B. Bobrow, “Social and Cultural Factors: Constraining and Enabling,” in *The Oxford Handbook of Political Science*, ed. Robert E. Goodin (Oxford: Oxford University Press, 2011), 920-933.

8 Adina Preda and Kristin Voigt, “The Social Determinants of Health: Why Should We Care?” *American Journal of Bioethics* 15 (2015), 25-36 (see also the thirteen Article Commentaries in response to Preda’s and Voigt’s article in the same issue).

approach for a particular disease inappropriate. It extends to the broader societal level where the work of the generalist physician will vary depending on history, culture, resources, and system organization.⁹ Family physicians are expected to be stewards of these resources and systems as well as health advocates for individual patients and communities.¹⁰ Patient-centered and person-centered models of care require all healthcare providers to attend carefully to SDH.¹¹

Competence around context and complexity, moreover, is essential to correcting misuses of the concept of race in medicine that harm patients and populations. In their 2021 study, “Misrepresenting Race — The Role of Medical Schools in Propagating Physician Bias,” Amutah et al. scrutinized over 880 preclinical lectures and identified five harmful misrepresentations, including the tendency to link racial groups to particular diseases and to present racial/ethnic differences in disease burden acontextually. “Rather than presenting race as correlated with social factors that shape disease,” the authors underscore, “the educators we observed portrayed race itself as an essential — biologic — causal mechanism.”¹² To the contrary, the notion of biologically-distinct races has no scientific basis. As Dorothy Roberts demonstrates in her landmark book, *Fatal Invention: How Science, Politics, and Big Business Re-Create Race in the Twenty-First Century*, it was invented to render the idea of white supremacy “natural” from scientific and medical perspectives. Dorothy Roberts explains how the fallacy of biological racism continues to serve this function.¹³ “Race is not a meaningful scientific construct in the absence of context,” Amutah et al. conclude, and clinical educators must “always consider structural and social determinants” in discussions of what causes unequal distributions of disease, including “the context of historical insults such as slavery and residential segregation.”¹⁴ In their study of a single session based on Dorothy Roberts’ *Fatal Invention* aimed at equipping HPE learners with tools to detect and address the falsehood of biological racism, Degife, Ijeli, Muhammad, Nobles, and Reisman note that “interventions that teach against this myth are largely absent from required medical curricula.”¹⁵ The session described below increases literacy around the use of constructed social categories, especially race, as tools of exclusion, injustice, and harm — an essential part of clinical education today.¹⁶

The ability to identify and evaluate SDH is a valuable skill for future physicians. Clinical educators’ discussions about the importance of social and cultural variables to medical practice, however, often lack specifics on how to operationalize context-dependent factors in clinical scenarios. Consider the following prompt: *For over a century, mortality rates for many communicable diseases among Indigenous peoples in North America have remained significantly higher than rates recorded for the general population — explain why.*¹⁷ Even without doing any research, you could likely begin to list many of the issues involved. Pushed to explain causality, however, or to distinguish interrelationships among different types of causal factors, you might be tempted to despair of ever untangling these complex historical developments enough to detect specific determinants and their consequences. To fix any health problem, it must first be identified. If we

9 Christine Gibson, Neil Arya, David Ponka, Katherine Rouleau, Robert Woollard, “Approaching a Global Definition of Family Medicine,” *Canadian Family Physician* 62 (2016), 891-6.

10 Walter Rosser, “Sustaining the Four Principles of Family Medicine in Canada,” *Canadian Family Physician* 52 (2006), 1191-1192, 1196-1197.

11 J. Hakansson, et al. “‘Same Same or Different?’ A Review of Reviews of Person-centered and Patient-centered Care,” *Patient Education and Counselling* 102 (2019), 3-11.

12 Amutah, et al., 874.

13 Dorothy Roberts, *Fatal Invention: How Science, Politics, and Big Business Re-Create Race in the Twenty-First Century* (New York: The New Press, 2012).

14 Amutah, et al., 874.

15 Ellean Degife, Chinye Ijeli, Muzzammil Imran Muhammad, Autumn Nobles, Anna Reisman, “Educational Intervention Against Biological Racism,” *Clinical Teacher* 18 (2021), 542-546.

16 See, for example, Darshali A. Vyas, Leo G. Eisenstein, David S. Jones, “Hidden in Plain Sight—Reconsidering the Use of Race Correction in Clinical Algorithms,” *New England Journal of Medicine* 383/9 (2020), 874-882.

17 I invented this prompt to help make my point.

want clinicians tuned into the full range of SDH so that they can address specific determinants in the clinic or community, or as policy-makers and educators, they need techniques for identifying context and parsing socio-cultural complexity. Below I describe a teaching method for one such technique.

My own specialist training and areas of research are in the history of medicine. As a researcher, I employ medicine as a medium for my practice of history. I see my job as an educator in a medical school, by contrast, to mobilize history as a vehicle for learning to practice medicine (not to teach history to medical students). Since 2009, I have been refining the following approach to using the history of medicine with learners aiming at careers in medical fields — first with pre-medical and biomedical engineering undergraduates at Johns Hopkins University; subsequently with medical students at McGill University and Queen's University; and now in the Faculty of Medicine at University of Ottawa.

What follows is aimed at a general audience of clinical educators. While the educational intervention described below is rooted in scholarship and theoretical questions belonging to the discipline of history, these are not discussed. The intervention is designed to get medical students or other HPE learners to use some common tools of historical practice within a single session. To achieve this, they are provided with information about those practices, but not expected to leave with a critical understanding of them. Neither the historical content nor the teaching method described in this report is appropriate for research or teaching in the discipline of history.

The premise of the teaching method is a correspondence between the categories of analysis commonly used by historians — what I call history's toolbox — and medicine's determinants of health. It is delivered in a single 3-hour session that has proven effective according to formal and informal feedback from learners. To date, the session has been offered six times as a component in a fourth-year medicine elective offered by the Ottawa Humanities in Medicine (OHM) program in the Faculty of Medicine at the University of Ottawa.¹⁸ From this session, learners leave with a grasp of some fundamental techniques from the discipline of history and are able to apply them effectively to clinical situations and public health scenarios.

At the center of this session is a toolbox containing eight analytical categories, or "tools": *social, cultural, intellectual, technological, political, economic, racial/ethnic* and *gendered*.¹⁹ Just as diagnostic signs carry immediate and specific implications for clinicians, each of these descriptors indicate to historians specific types of factors and forces (that is, determinants). We employ these categories (and others) to identify the drivers and consequences of complex historical phenomena. We then evaluate the interrelationships among them, and based on our evidence and analyses, rank factors for causal significance. Historians' working definitions of these categories correlate in helpful ways to the full range of determinants of health and discriminatory health policies that affect patients and communities today.

The session's core skill is to dismantle complexity, momentarily, into its multiple and interconnected causal factors, which provides greater immediate insight into the whole. With recognition of the correlates between determinants of health and factors that shape socio-cultural complexity, learners quickly learn to utilize these time-tested tools from history. The analytical categories are compared to histological stains in order to hasten learners' comprehension of how and why historians employ the method, as explained below. The learning objectives of the session are: 1) to apply history's toolbox as a systematic method for evaluating socio-cultural phenomena inherent in SDH; 2) to differentiate eight types of factors (i.e., determinants) in

18 The Ottawa Humanities in Medicine (OHM) program (Faculty of Medicine, University of Ottawa, Ottawa, Canada) is currently under the direction of Dr. Michel Shamy (mshamy@toh.ca).

19 Throughout, I italicize these category names to distinguish them from ordinary adjectives.

a historical case study that represents socio-cultural complexity; 3) to recognize how categorization simultaneously enhances some determinants while obscuring others, and how the use of constructed social categories in medicine can function to help and harm patients and communities.

History of medicine was once a staple in medical curricula in North America, and there is a century of scholarship that examines the rationale for including it in clinical education.²⁰ To develop this teaching method, I built upon the insights of several historians and clinicians who have tackled and reported on the practical challenges of mobilizing history as a teaching tool in HPE.²¹ In particular, the session's objectives reflect many of the rationale in the new synthesis argued by Jones, Greene, Duffin, and Warner in this journal in 2015. The authors — all skilled historians of medicine who teach history in clinical settings — make a strong case for the intrinsic value of historical thinking to medical training. They set out more than a dozen “specific claims that have self-evident plausibility and relevance for medicine,” especially within the competency-based educational models that dominate today. They underscore, for example, that definitions, diagnostic practices, and social meanings of disease are all historically contingent, and that the burden of disease changes over time. “A thorough understanding of disease” (clearly something all physicians should possess, they insist) “includes knowledge of the non-reductionist mechanisms that can account for these changes over time (e.g., social determinants of disease).” With an aim to equip learners with the skill of ably using categories to tease out socio-cultural complexity, this session animates two further claims in the new synthesis: first, historical approaches reveal how specific social, economic, and political forces shape ethical judgments in medical practice and research; and, second, since medicine has always influenced how the concepts of race, ethnicity, gender, sexuality, and class are constructed and deployed within societies, history offers robust tools for discerning and examining these dynamics.²²

The humanities are increasingly recognized as integral, not extramural, to clinical education. In late 2020, the Association of American Medical Colleges (AAMC) issued a report called *The Fundamental Role of Arts and Humanities in Medical Education* that shows how arts-based and humanities-based pedagogical approaches are “intrinsically connected” to teaching and learning in medicine and “should be woven into the fabric of 21st-century medical students’ education,

20 See for example, E.F. Cordell, “The Importance of the Study of the History of Medicine,” *Medical Library History Journal* 2 (1906), 268-282; Henry Sigerist, “Medical History in the Medical Schools of the United States,” *Bulletin of the History of Medicine* 7 (1939), 627-662; Owsei Temkin, “An Essay on the Usefulness of Medical History for Medicine,” *Bulletin of the History of Medicine* 19 (1946), 9-47; George Rosen, “The Place of History in Medical Education,” *Bulletin of the History of Medicine* 22 (1948), 594-629; Iago Galdston, ed., *On the Utility of Medical History* (New York: The New York Academy of Medicine, 1957); Chester R. Burns, “History in Medical Education: the Development of Current Trends in the United States,” *Bulletin of the New York Academy of Medicine* 51 (1975), 851-869; S.E.D. Shortt, “History in the Medical Curriculum: A Clinical Perspective,” *JAMA* 248 (1982), 79-81; Parth M. Patel and Sukumar P. Desai, “A Clinician’s Rationale for the Study of History of Medicine,” *Journal of Education in Perioperative Medicine* 16 (2014), 1-12; Jeremy A. Greene and David S. Jones, “The Shared Goals and Distinct Strengths of the Medical Humanities: Can the Sum of the Parts Be Greater Than the Whole?” *Academic Medicine* 92 (2017), 1661-1664.

21 Joel D. Howell, “An Elective Course in Medical History,” *Academic Medicine* 11 (1991), 668-669; Susan E. Lederer, Ellen S. More, and Joel D. Howell, “Medical History in the Undergraduate Medical Curriculum,” *Academic Medicine* 70 (1995), 770-776; Barron H. Lerner, “From Laennec to Lobotomy: Teaching Medical History at Academic Medical Centers,” *American Journal of Medical Science* 319 (2000), 279-284; Jacalyn Duffin, “Infiltrating the Curriculum: Triumphs and Disasters in Bringing History to Future Doctors,” in *Students Matter: The Rewards of University Teaching*, ed. J. Kevin Dorsey and P. K. Rangachari (Springfield, IL: Southern Illinois University School of Medicine, 2012), 74-92; Howard Kushner and Leslie S. Leighton, “The Histories of Medicine: Toward an Applied History of Medicine,” in *Humanities in the Twenty-First Century*, ed. E. Belfiore and E. Upchurch (London: Palgrave Macmillan, 2013), 111-136.

22 David S. Jones, Jeremy A. Greene, Jacalyn Duffin, John Harley Warner, “Making the Case for History in Medical Education,” *Journal of the History of Medicine and Allied Sciences* 70 (2015), 623-652. See also Jon Arrizabalaga, “Does History Matter? Commentary on ‘Making the Case for History in Medical Education,’” *Journal of the History of Medicine and Allied Sciences* 70 (2015), 653-655; Kenneth M. Ludmerer, “The History of Medicine in Medical Education,” *Journal of the History of Medicine and Allied Sciences* 70 (2015), 656-660.

resident physicians' training, and physicians' ongoing development."²³ In 2018 the National Academies of Sciences, Engineering, and Medicine (NASEM) emphasized various competencies associated with medical humanities training: "close reading practices as an essential tool, an appreciation for context across time and space, qualitative analysis of social structures and relationships, the importance of perspective, analysis of the structure of an argument (or of the analysis itself), and study of phenomenology in the human world."²⁴ Medical humanities is optimized, according to Vinney, Callard and Woods, when viewed as a critical collaborator that is "productively entangled" with health and medical fields. This entanglement is characterized, in part, by "greater attention not simply to the context and experience of health and illness, but to their constitution at multiple levels."²⁵ Historians have already devised and refined effective tools for sorting out such multi-factorial and interconnected complexities — common categories of analysis. Learning how to use eight of these tools form the basis of the teaching method described below.

TEACHING METHOD

The intervention employs a demonstration-performance teaching method with familiar steps that I describe and rationalize in four sections below: Explanation, Demonstration, Supervised Practice, and Evaluation. This structure resonates strongly with a teaching method described for office-based preceptors in Family Medicine, itself based on the taxonomic model for acquisition of psychomotor skills developed by Elizabeth Simpson in 1966.²⁶ It is an ambitious agenda for a single 3-hour session that is achievable if the facilitator knows the historical case study intimately, and is a conscientious discussion leader and time keeper.

Step 1 Explanation (20 minutes).

This step begins with an explanation of why and how historians use common categories to parse and analyze complexity. Like all academic researchers, historians have a duty to explain (not simply describe) the phenomena they study. Historians study change over time. Unlike our counterparts in sciences and some social sciences, historians regularly perform analyses of complex, ephemeral, context-dependent phenomena that cannot be measured or quantified. One of the ways we meet our burden of methodological rigor is to compile (or at least consider) multi-factorial explanations. Imagine, for example, a historian tasked with explaining the events that transpired during the first year of the COVID-19 pandemic in 2020, and who analyzed only medical and epidemiological factors (e.g., coronaviruses, symptoms, transmission mechanisms, R-numbers, and mortality rates). Would a history of COVID-19 be adequate without discussions of toilet paper shortages, social distancing orders, hospital capacities, economic hardship, school closings, class inequities, "frontline heroes," social media, Zoom, essential workers, senior neglect, the politicization of masks, George Floyd, police brutality, civic unrest, or the challenges of mass vaccination? Certainly not. One of the strategies historians use to approach such complexity is to employ various categories of analysis to disentangle interdependent causes and their consequences.

23 Association of American Medical Colleges (AAMC), *The Fundamental Role of Arts and Humanities in Medical Education*, eds. Lisa Howley, Elizabeth Gaufer, and Brandy King (Washington, DC: Association of American Medical Colleges, 2020), 5.

24 National Academies of Sciences, Engineering, and Medicine (NASEM), *The Integration of the Humanities and Arts With Sciences, Engineering, and Medicine in Higher Education: Branches From the Same Tree* (Washington, DC: National Academies Press, 2018), 60.

25 W. Viney, F. Callard and A. Woods, "Critical Medical Humanities: Embracing Entanglement, Taking Risks," *Medical Humanities* 41 (2015), 2-7.

26 Elizabeth J. Simpson, *The Classification of Educational Objectives: Psychomotor Domain* (Urbana: University of Illinois, Office of Education, 1966). Project no. 5-85-104.

To motivate learners to adopt this new skill as part of their medical training, I point to its potential value for clinical decision-making. The ability to apply historians' categories of analysis, for example, helps to quickly identify social and cultural dimensions of clinical judgment. Especially when dealing with SDH, history's toolbox represents a systematic approach to three key aspects of social and cultural complexity: development (change over time); contingency (particulars, rather than universals); and context (why this happened at this time). In interactions with patients, substitute decision makers, and other health professionals, moreover, the ability to identify and understand the implications of cultural factors — tacit and powerful signifiers that function to regulate behavior, patrol boundaries, and create feelings of “us” and “them” — is invaluable. It is equally important for cultivating critical appraisal of educational settings, within which trainees often internalize values and related behaviors via a latent “hidden curriculum” outside of formal curricular hours.²⁷

In order to enhance learners' ability to visualize the effect(s) of each tool, I employ the metaphor of histological stains. Histologists add stains to tissues before microscopic inspection to enhance or expose particular attributes of a specimen. Applying this or that analytical category, I explain, similarly clarifies or reveals causal factors that might otherwise escape observation. The metaphor resonates with learners who are already familiar with creating and reading histological specimens. It also emphasizes that they are learning a technical skill that they will be able to apply to clinical scenarios as required.

I distribute paper copies of a table (Table 1) that lists the categories and includes for each a working definition and selected examples or key words. With the table as their visual guide, learners listen to an explanation of the eight categories of analysis, or tools, that they will learn to employ in this session: *social, cultural, intellectual, technological, political, economic, racial/ethnic, gendered*. Learners readily appreciate that SDH could be further sub-typed beyond merely the *social* and the time allotted suffices. Rarely does anything presented appear to be novel to learners, except perhaps the suggestion that the terms *social* and *cultural* have distinct technical definitions. After this brief review of the contents of our toolbox, I begin the demonstration (Step 2).

During the session, we do *not* concern ourselves with the historical developments, theoretical implications, or scholarly debates around these categories (all of which merit serious consideration by historians, but are unrelated to the teaching goals or learning objectives). The following insights and cited scholarship, however, are included here for the benefit of non-historical clinical facilitators.

In the mid-twentieth century, a groundswell of new social histories decentered history's longstanding focus on elite individuals (typically male), political ideas (typically European), and inevitable progress (so-called Whig history). Using novel research methods and theoretical frameworks, often adapted from the social sciences, social historians amplified voices of marginalized groups in the past and recovered the lived experiences of everyday people.²⁸ When historians use the term *social*, it immediately signals that we are talking about mechanisms that structure a society (*social* being the adjective for society). These include systems of laws, institutions, and hierarchies. Hierarchical structures can be legalized and/or tacit; for example, class, caste, patriarchy, slavery, and white supremacy (racism). Social historians scrutinize the groups and identities formed in relation to these hierarchical structures, often using two of the

27 F. Hafferty and R. Franks, “The Hidden Curriculum, Ethics Teaching, and the Structure of Medical Education,” *Academic Medicine* 69 (1994), 861-71.

28 Patrick Joyce, “What is the Social in Social History?” *Past and Present* 206 (2010), 213-248.

Table 1. The “tools” in history’s toolbox.

Category	Working Definition	Selective Key Words/ Examples
social	how societies are organized and structured by systems of laws, institutions, and hierarchies (e.g., class, caste)	laws; legal rights and status; licences; marriage; courts; voter registration; taxation; colleges; prisons; police; class; caste; slavery; apprenticeship
cultural	how humans interpret and make meaning from individual and collective experiences; representations of that meaning	language; gestures; values; norms; symbols; attitudes; bias; identities; stereotypes; manners; music; art; design; jokes
intellectual	related to ideas	idea; theory; model; concept; ideology; explanation; principles; paradigm; associations
technological	related to tools and techniques devised by humans to operationalize their ideas, and the consequences of their use	tool (pencil, chop sticks, scalpel); technique (writing, sewing, math, palpation); machine (pulley, printing press, iron lung, cell phone)
political	related to policies and actions within and between nation-states, and the power relations amongst those who govern	government; citizens; elections; voters; politicians; parties; platforms; ideologies; policies; voting laws; international relations
economic	related to the production, exchange, distribution, consumption, and control of valued goods and resources	labor; commodity; supply; demand; resources; currency; commerce; money; inflation; wages; interest; advertising; productivity; markets
racial/ethnic	related to membership in groups (voluntary or imposed) based on shared language, region, ancestry, skin color, religion, or social status	identity; othering; racism; genocide; assimilation; religious persecution; discrimination; decolonization; white supremacy; redlining; intersectional
gendered	how societies conceptualize <i>female</i> and <i>male</i> , including behaviors appropriate to each and challenges to these concepts and distinctions	female; male; men; women; feminine; masculine; transgender; reproductive rights; feminism; patriarchy; non-binary; paternalism; pronouns; cis; latinx; intersectional; identity

categories in our toolbox, *racial/ethnic* and *gendered*.²⁹ They also study power differentials and constraints structured by *economic* and *political* forces in regional, national, and international contexts, especially through theoretical lenses such as capitalism, communism, colonialism, or imperialism.³⁰

29 See, for example, Emily K. Abel, “From Exclusion to Expulsion: Mexicans and Tuberculosis in Los Angeles, 1914-1940,” *Bulletin of the History of Medicine* 77 (2003), 823-849; Cara Kiernan Fallon, “Husbands’ Hearts and Women’s Health: Gender, Age, and Heart Disease in Twentieth-Century America,” *Bulletin of the History of Medicine* 93 (2019), 577-609; Karen Flynn, “I’m Glad That Someone Is Telling the Nursing Story’: Writing Black Canadian Women’s History,” *Journal of Black Studies* 38 (2008), 443-460; Rana Hogarth, “The Strange Case of Hannah West: Skin Colour and the Search for Racial Difference,” *Social History of Medicine* 29 (2016), 557-572; Jonathan Okamura, “Race and/or Ethnicity in Hawai’i: What’s the Difference and What Difference Does It Make?” in *Beyond Ethnicity: New Politics of Race in Hawai’i*, ed. Camilla Fojas, Rudy P. Guevarra Jr., and Nitasha Tamar Sharma (Honolulu: University of Hawai’i Press, 2018), 94-113; Susan Reverby, “Inclusion and Exclusion: The Politics of History, Difference, and Medical Research,” *Journal of the History of Medicine and Allied Sciences* 63 (2008), 103-113; Joan W. Scott, “Gender: A Useful Category of Historical Analysis,” *American Historical Review* 91 (1986), 1053-1075.

30 See for example, Christy Ford Chapin, “What Historians of Medicine Can Learn from Historians of Capitalism,” *Bulletin of the History of Medicine* 94 (2020), 319-367; James Schafer, “Fighting for Business: The Limits of Professional Cooperation among American Doctors during the First World War,” *Journal of the History of Medicine and Allied Sciences* 70 (2015), 165-194.

Cultural historians are concerned with the symbolic and its interpretation, and insist that meaning is always situated, by which they mean context-dependent.³¹ When historians employ the term *cultural* it is a shorthand for the endlessly complicated ways in which humans make meaning from their experiences of the world, and how those experiences are represented (literally *re-presented*) beyond the self. Examples of this meaning-making are gestures, symbols, language, music, magic, religion, metaphors, jokes, values, stereotypes, and normative behaviors. Culture coheres around shared understandings of meaning, which leads to the formation of collective identities. Cultural identity is a source of pride and delight for humans, but it also engenders “othering” and xenophobia which manifest, for example, as religious intolerance, casteism, racism, calls for assimilation, and genocide. Historians regularly use the *technological* category to explain the origins and impact of the tools and machines humans produce, from chop sticks to typewriters, and ballet shoes to smart phones, and their attendant techniques such as cooking, writing, dancing, and programing. Technology results from human efforts to make an idea, concept or theory operational, and *intellectual* analyses target the trajectory and significance of those ideas.³² Cultural products and attitudes are built into social structures; a single society can support multiple cultures; and, individuals identify with multiple cultures simultaneously.

While we do not concern ourselves with theoretical or historiographical matters, I do explain to learners that not all historians agree on the function or validity of these categories of analysis. One historian points to their arbitrary nature: “political history, social history, economic history, ecclesiastical history, history of ideas and the rest represent no more than a choice of angle from which to view a common body of evidence.”³³ Another observes that categorization flattens and simplifies the very complexity we seek to understand.³⁴ Both are right: the technique involves an artificial sectioning of socio-cultural complexity and focused study of isolated components. In this way, the procedure is strikingly familiar to medical students who learn anatomy and physiology through close examination of isolated tissues and systems without losing sight of the complexity of the human body.

Step 2 Demonstration (40 minutes).

In step two I demonstrate how categories of analysis are used to untangle complexity using the format of a lecture that is structured to show the use of all eight tools. In the time allotted, it can be nothing more than a simplified telling of a complex episode from history. Its function is to isolate the eight types of factors our tools help illuminate (not to teach history or historiography). I use Power Point and include many images to aid learner understanding and recall. During the demonstration, I display all associated tools on the corresponding slides. Some facilitators may prefer a “flipped classroom” in which learners watch a pre-recorded lecture in advance of the session. Questions and requests for clarification are welcome, but inquiries that deserve in-depth discussion are tabled until the supervised practice (Step 3).

Below I outline a sample lecture using the case of plague in medieval Europe, the so-called Black Death, and I note each associated tool in parenthesis. Other historical case studies could also serve well, as long as they require all eight tools to parse the socio-cultural complexity in play; for example, smallpox at Tenochtitlan (1520), yellow fever at Saint-Domingue (1802),

31 See, for example, Mary Fissell, “Making Meaning from the Margins: The New Cultural History of Medicine,” in *Medical History: The Stories and their Meanings*, eds. John Harley Warner and Frank Huisman (Baltimore: Johns Hopkins University Press, 2004); Peter Burke, *What is Cultural History?* Third Edition (Cambridge: Polity Press, 2019).

32 Chiara Beccalossi and Peter Cryle, “Recent Developments in the Intellectual History of Medicine,” *Journal of the History of Medicine and Allied Sciences* 67 (2012), 1-6.

33 T.P. Wiseman, et al., “What Is Political History? Eight Historians Answer,” *History Today* 35 (1985), 12.

34 Jeanne Boydston, “Gender as a Question of Historical Analysis,” *Gender & History* 20 (2008), 559. See also Barbara Jeanne Fields, “Categories of Analysis? Not in My Book,” in *Viewpoints: Excerpts from the ACLS Conference on the Humanities in the 1990s, American Council of Learned Societies Occasional Papers Series 10* (New York: ACLS, 1989), 29-34.

and influenza, polio, or HIV-AIDS in the twentieth century. Episodes rooted in ethical problems and brutalities also tend to require all eight tools in the toolbox to dismantle and thus serve well, for instance, Ignaz Semmelweis and the maternity wards or the Tuskegee syphilis study. The facilitator must conduct sufficient historical research in advance to prepare a case study rooted in evidence-based scholarship. That said, the underlying scholarship is not made explicit during the demonstration, as per the following example on medieval plague.

Before turning to Europe in the fourteenth century, I begin with images that depict human hunting and farming much earlier. I ask learners why the transition about 10,000 years ago from small groups of nomadic hunter-foragers to larger settlements dependent on agriculture might have been disastrous for humans in terms of disease. It does not take learners long to brainstorm reasons: increased exposure and lack of immunity to novel micro-organisms along several lines (e.g., turning up soil, intimately co-existing with domesticated animals and their waste, and contaminating local water supplies); population increases, since permanent settlements both enable and require more offspring, which leads to more human waste and a need to store food; and, less variety in diet. I point to the slide and a hieroglyph of a person operating a plow pulled by oxen and ask: Would that farmer give these reasons to explain the cause of disease? No, they agree. Asked why not, they quickly discern: undetectable without a microscope, the idea of disease-causing microorganisms is likely not a compelling explanation, if it has occurred to the ancient farmer at all. I emphasize that our own conceptualization of contagious diseases as microbiological in origin is, ultimately, a theory — an idea supported by laboratory evidence, which we value highly, but an idea nonetheless. I draw their attention to the *intellectual* category of analysis in Table 1. I add that our preoccupation with microbiological and epidemiological explanations may obscure our ability to recognize the logic of alternative theories of disease causation. Our hieroglyphic farmer, for example, might attribute his own symptoms to a malevolent spirit who has commandeered his body; the priestess to whom he appeals for a cure, moreover, would likely scoff at the notion that invisible “bacteria” are the cause of her patient’s illness. In the ancient Mediterranean world, for example, explanations for disease could be supernatural (e.g. inflicted by a god or spirit) and/or natural (attributed to an imbalance of the body’s four essential humors). Healers’ therapeutic interventions and patients’ health-seeking behaviors, I emphasize, are always (and still) determined by how they conceptualize disease and its causes. Several tools are demonstrated in this initial discussion: ideas (*intellectual*) are shown to act as determinants that shape decisions about health and illness, as are religious beliefs (*cultural*) and our own dependence on microscopes (*technological*) to support theories such as bacteriology and epidemiology.

The lecture jumps ahead to the epidemic that devastated medieval Europe with its estimated mortality rates of 30 to 50 percent. HPE learners typically want to know the epidemiology, etiology, and presentation. Microbiologists have confirmed what was long suspected: the bacterium that caused medieval plague is *Yersinia pestis*. Recent genetic studies suggest its emergence long before the fourteenth century in Mediterranean and Asian populations.³⁵ The bacterium infects its mammalian host through the bite of a blood-sucking insect, entering the lymph system and causing characteristic buboes at the groin, armpits, or neck. Researchers also suspect a pneumonic form was present. Modern case fatality rates for untreated bubonic plague are 30-60% in which the infection produces septic shock, organ failure, hemorrhaging, and death. Medieval accounts describe a rapid, painful, and horrific death. Some physicians fled infected cities to save their own families, others stayed to try traditional humoral and medicinal therapies with little success and great risk.

35 Monica H. Green, “Taking ‘Pandemic’ Seriously: Making the Black Death Global,” *The Medieval Globe* 1 (2014), 27-91. See also Monica H. Green, “On Learning How to Teach the Black Death,” *HPS&ST Note* (March 2018), 7-33, <https://www.hpsst.com/uploads/6/2/9/3/62931075/2018march.pdf>.

The medieval Chinese, Islamicate, and Christian worlds, I explain to learners, were interconnected by commerce (*economic*) as well as religious (*cultural*) and imperial wars (*political*). Maritime technology was integral to both trade and conquest, and the microbe travelled aboard ships as well as land caravans that traversed these worlds (*technological*). The high number of deaths caused fear and panic, and significant conventions such as burial rites and gift-giving (*cultural*) were abandoned. Some cities imposed a quarantine of forty days anchored at sea before foreign ships were authorized to unload in their ports (*social*). In some cases, officials banned trade with infected towns (*economic, political*). High mortality caused shortages of labor, food, and goods (*economic*). There were not enough priests to perform rites that legalized births and marriages (*social*) or that saved believers from eternal damnation (*cultural*). Criminal, civil, and probate court proceedings slowed or ceased (*social*). Social structures and cultural signifiers became unstable and changed rapidly during the epidemic.

Next, I highlight the connection between how humans explain disease to themselves and how they make decisions about what to do about it. An emerging theory of etiology and transmission gained credibility in medieval Europe. It was based on the idea that disease-causing “miasmas” emanated from decaying organic matter such as a rotting animal carcass, an abscessed tooth, or village cesspool (*intellectual*). Nasty smells signalled this disease-causing air. Miasmatic explanations led to new municipal regulations (*social*) restricting waste disposal on city streets and mandating that plague victims’ belongings be burned. The idea of miasmas inspired the famous costume of the plague doctor who appeared in later centuries in a long gown, gloves, goggles, and bird-beak mask (*technological*) that was filled with sweet-smelling herbs to counteract the disease-causing effects of miasmas (*intellectual*). Based on the same rationale, people burned incense and maintained smoking fires in closed spaces, especially where the sick were tended. Well-intentioned surgeons lanced the painful buboes to release puss and pressure (*technological*) despite the associated risks of miasmas. Physicians continued to treat the sick with therapies such as bloodletting or purging (*intellectual, technological*) that were based on humoral explanations. European laws in this period regulated which procedures surgeons (considered manual laborers) and physicians (considered scholars) were allowed to perform (*social*). Patients had to use their best judgment about which ideas and remedies made most sense to them.

Cultural norms meant that it often fell to female family members to nurse the sick and dying (*gendered*). Even if unattached women had wanted to flee to save their lives, many did not possess the same liberties under deeply patriarchal societies to travel alone (*social, gendered*). Hospitals, not common in Europe before the plague, have important origins in this epidemic. Religious orders operated plague hospitals funded by wealthy patrons (*social*), and both nurses and benefactors hoped that helping to care for the sick would ensure their own salvation (*cultural*). Some Christians seized upon the crisis to justify pre-existing bigotry, accusing Jewish communities of causing the plague (*racial/ethnic*). Similarly, some women were accused of using witchcraft to spread the disease (*gendered*).

To ensure learners’ success in the next step, it is important to highlight how historians tend to differentiate social (or structural) factors from cultural (or meaning-making) factors. In the wake of Europe’s decimation, for example, many social structures collapsed or were circumvented. Traditionally, peasants were legally bound to live and farm on an estate, and to sell their crops to an aristocratic landlord. Due to widespread labor shortages, many demanded higher prices and their landlords had little choice but to acquiesce (*social, economic*). Some peasants left the estate without legal permission, but they were never pursued because mechanisms of law and authority ceased to function (*social*). Others became independent artisans, landowners, or merchants. The societal chaos created by the epidemic, in other words, facilitated upward mobility within class divisions (*social*).

Most European states (*political*) affected by this initial wave of plague were governed interdependently with the Catholic church (*social*). Its system of beliefs and iconography (*cultural*) infused every aspect of medieval life with significance. Many Europeans believed that the plague was divine punishment (*intellectual*, an etiological theory) for lack of piety, sinfulness, or tolerance towards other religions. A radical Christian movement emerged to offer penance: the flagellants processed through towns, shirts around their wastes and whipping themselves, bleeding and howling, to atone for the collective sins that brought the pestilence (*cultural*). Their processions so enthralled and upset onlookers that municipal and religious authorities outlawed the displays (*social*). Finally, survivors of the plague developed new emotional and aesthetic sensibilities towards mortality (*cultural*). Artistic representations of death and dying, for example, became newly intimate and informal, even absurd and playful. Death became a dominant theme in philosophy, visual art, music, theater, and literature (*cultural*) as European communities recovered from the epidemic.

I conclude the lecture by emphasizing that, while useful, categorization is always an exercise in reduction to simpler or more general terms. As such, it can be a slippery slope to overgeneralizations and stereotypes. Like histological stains, these tools improve discrimination quality. And, like histological stains, highlighting one aspect can cause others to be obscured or distorted. A focus on gendered factors, for example, does not deny the involvement or importance of economic or technological forces. The goal is to learn how to momentarily differentiate types of factors that contribute to complexity in order to better appreciate their interdependence and intersectionality. At this point, we break for ten minutes.

Step 3 Supervised Practice (70 minutes).

The third step is supervised practice of the skill. An initial group discussion, led by the facilitator, creates the first opportunity for learners to handle a few of the tools. There are always questions about the content presented in the demonstration, and the facilitator provides answers and clarification. Most importantly, the facilitator poses leading questions that help connect the historical content to the skill of differentiating factors according to the eight possible types.

The main practice exercise is a group research activity. This can proceed in a number of ways. Here I describe a procedure that functions well to meet the learning objectives. It can be adapted to suit enrollment numbers. Learners are divided into two groups of 3 to 6 members. Each group is assigned 4 of the eight categories, divided as follows to ensure equitable distribution. Group A receives *social*; *intellectual*; *political*; *gendered*. Group B receives *cultural*; *economic*; *technological*; *racial/ethnic*. My rationale for the equity of this division is as follows: *social* and *cultural* are the two most expansive categories; they are often misguidedly treated as synonyms; and, their respective criteria can be difficult to disentangle. Each group, therefore, is assigned one of these, not only to practice distinguishing social from cultural factors, but also to increase the effect of the group discussion in the second half of this step. As explained, there is a direct relationship between ideas and technology, so *intellectual* and *technological* are divided between the two groups, as are *gendered* and *racial/ethnic*, which both depend simultaneously on constructed meanings and hierarchies of power.

Both groups conduct research on the same epidemic using the internet and/or materials supplied by me, the facilitator. Thus far, the majority of learners have used their phones and computers to do this research using the internet, but there is always one student from each group who turns to the pile of books and articles that I provide. This is not exhaustive historical research; in fact, it is more akin to a scavenger hunt. There are plenty of suitable sources of information online for epidemics. The goal is to identify examples that meet the criteria for the category (not to conduct serious historical research). A dedicated website or sourcebook could be created by a facilitator to focus these efforts.

First, each group is responsible for identifying a set of factors or circumstances that meet the criteria for each of its assigned tools (for a total of 4). With [Table 1](#) close at hand, they begin to conduct research, sharing promising sources of information and scouring what they find to identify applicable factors. Soon they are swimming in information that describes complex, interconnected phenomena. That is good — those are the desired conditions of the practice exercise with these tools. In my role as facilitator, I remain engaged and available for consultation. By means of eavesdropping or direct questioning, I help each group pinpoint and address obstacles. Once both groups have researched and identified an exemplary factor for each of the 4 assigned categories (20 minutes), I explain the second part of the supervised practice.

From there each group presents its 4 categories and examples to the other group, with the instruction that they must present them in order of most to least consequential. In addition, they are required to justify this ranking. Groups are given five minutes to make their preparations and each group has five minutes to present (I allow for 20 minutes total). This part of the practice introduces the notion that, once categorized, factors can be evaluated and ranked for causal significance. Learners also discover that not all the categories of analysis are equally productive for all scenarios (this is why some historians choose to specialize in the use of one or two categories). Applied systematically, however, some factors emerge as especially significant.

After these presentations, I facilitate a second group discussion on the collective results (30 minutes). Often, both groups have presented the same factor even though they were assigned different categories. For the medieval plague, for instance, the fact that authorities passed laws banning the movement of goods and people from nearby infected towns meets criteria for the *social*, *economic*, and *political* categories. As facilitator, therefore, I might ask: Do legal institutions, economic forces, and political decisions ever operate independently from each other? What do we gain by independent focus on each? There is often similar overlap among factors associated with the *cultural* and *racial/ethnic* categories. Other potential discussion questions include: If we combine the findings of both groups, does it represent a full and adequate explanation of the consequences of this epidemic? What is missing? Which category was difficult to research? Eventually I reorient the discussion towards the present by asking: Do any of these factors represent a determinant of health? What does the term “social” in SDH mean to you now? Can anyone give an example of a cultural or technological or gendered determinant of health?

A final note on choosing an epidemic for this practice exercise. In 2021, I used COVID-19 as our research case. Not surprisingly for historians of medicine, factors associated with all eight categories were consequential. Using our own epidemic had the advantage of letting learners test out these new tools for dismantling complexity on a broad spectrum of phenomena that they have observed and experienced firsthand.

Step 4 Evaluation (30 minutes).

Over the years, I have experimented with three means of evaluation, depending on enrollment and expectations of course directors. 1) A pre-test and a post-test with a twist: each test includes the same set of multiple choice questions, one for each of the eight categories; in the post-test twist, I rearrange the order of the identical questions, as well as the answers and distractors, to increase the degree of the critical reasoning required to complete it. This provides a snapshot for both facilitator and learner of learning progress during the session. 2) A match game test: learners are tasked with matching eight different determinants, each associated to a different category of analysis, with a simple clinical or public health scenario. The test consists of two mismatched lists; learners must draw a line connecting one item from each list that correspond. For example, a match for the *technological* determinant might be: “The patient was told that it was important to go online and check their test results in a few days, but they do not own

a computer or smart phone.” A match for the *racial/ethnic* determinant might be: “The resident thought the diagnosis might be Kawasaki Disease, but it was difficult to verify because she could not find any images of the rash in the medical literature on skin color similar to her patient’s complexion.” The match test evaluates the learner’s ability to differentiate the eight types of factors; to imagine using the skill in clinical scenarios; and, to correlate historians’ categories of analysis with determinants of health. 3) Written essay: in one iteration of the session, a written essay was assigned at the request of the course director. The structure of the essay resembled the group presentations described in Step 3. Learners selected an historical epidemic from a list of suggestions. They were required to discuss a minimum of five categories, provide evidence from historical sources for each, and justify their selection, omission, and ranking of those categories. This evaluation showed the degree to which learners could differentiate categories of analysis and mobilize them in the service of historical research. It did not evaluate their understanding of the categories as correlates of determinants of health or their applicability to clinical decision-making. I have found the match game test to be the most effective and engaging.

CONCLUSIONS

In this single skill-based session, HPE learners are introduced to history’s toolbox: eight analytic categories that historians use to examine complex socio-cultural phenomena. After the session, they are able to use history’s toolbox to assess socio-cultural complexity inherent in SDH and to distinguish eight distinct types of determinants that constitute that complexity. They are also able to recognize how categorization simultaneously enhances some determinants while obscuring others, and how constructed social categories in medicine can operate to help and harm patients and communities. The approach can be incorporated into lectures, problem-based learning, flipped classrooms, and as part of residency education on academic half-days. Learners have responded positively to this intervention. One fourth-year medical student, for example, evaluated the session as follows: “Not your traditional history of medicine course. Applicable perspective from a clinical point of view.” Another learner appreciated “the use of epidemics as a concrete example of how to apply the numerous ‘stains’ that the presenter described.”³⁶ Overall, most learners successfully acquire the demonstrated skill to distinguish and evaluate various interdependent factors within complex social and cultural phenomena.

The delivery of quality healthcare to both individual patients and communities is complex, not only from the clinical and scientific perspectives, but also due to SDH. Learners in HPE understand this intuitively. The aim of this history of medicine session, therefore, is not to teach socio-cultural complexity, in history or in the present. It is to equip clinicians with skills to efficiently dissect that complexity, to correlate eight subtypes of historical causation to specific determinants of health today, and to apply this skill to decision-making in clinical and public health scenarios. Once clinical learners can themselves wield social categories as tools of analysis, moreover, they are better equipped to recognize when they produce, uphold, or obscure harmful health disparities.

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