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Systematic Review of Typologies Used to Characterize Clinical Ethics Consultations

Jennifer E. deSante-Bertkau, Michelle L. McGowan, and Armand H. Matheny Antommaria

ABSTRACT

Introduction

Classifying the ethical issues in clinical ethics consultations is important to clinical practice and scholarship. We conducted a systematic review to characterize the typologies used to analyze clinical ethics consultations.

Methods

We identified empirical studies of clinical ethics consultation that reported types of ethical issues using PubMed. We screened these articles based on their titles and abstracts, and then by a review of their full text. We extracted study characteristics and typologies and coded the typologies.

Results

We reviewed 428 articles; 30 of the articles fulfilled our inclusion criteria. We identified 27 unique typologies. Each typology contained five to 47 categories (mean = 18). The most common categories were do-not-attempt-resuscitation orders (19 typologies, 70 percent), capacity (18 typologies, 67 percent), withholding (18 typologies, 67 percent), withdrawing (17 typologies, 63 percent), and surrogate or proxy (16 typologies, 59 percent). Only seven (26 percent) of the typologies contained all five of the most common categories.

The typologies we used to characterize clinical ethics consultations exhibit significant heterogeneity and several conceptual limitations. A common typology is needed whose development may require multi-institutional collaboration and could be facilitated by professional organizations.

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INTRODUCTION

Hospital ethics committees and clinical ethics consultation proliferated between 1983 and 2007. One survey published in 1983 found that approximately 1 percent of all hospitals in the United States had ethics committees that could become involved in decisions regarding individual patients.[1] By 2007, 81 percent of general hospitals and 100 percent of hospitals with more than 400 beds had established ethics consultation services.[2] During this time, there was substantial discussion of the goals of consultations, the competencies of consultants, and the evaluation of consultation processes.[3] Observational studies described the process of consultation including the frequency of consultation requests, the characteristics of requestors and patients, and the types of ethical issues encountered. Some studies examined potential associations between consultation and mortality and/or length of stay, and/or reported the satisfaction of requestors. Few intervention trials, however, have been conducted, and trials that have been conducted show variable results.[4]

Observational studies of consultations have a variety of potential benefits. Studies of individual institutions can be used to evaluate trends in consultation requests, plan educational programs, identify systems issues, and evaluate changes in response to interventions. They may provide data that can be used to justify institutional support for clinical ethics consultation services. Comparisons between institutions also may be beneficial. Such comparisons allow descriptions of variation between different types of institutions, including those associated with different clinical ethics consultation methods.

A typical example of an observational study is Johnson, Church, Metzger, and Baker's analysis of ethics consultations conducted at St. Jude Children's Research Hospital from 2000 to 2011.[5] St. Jude is a 78-bed pediatric hospital that specializes in the treatment of children with cancer, human immunodeficiency virus infection, blood disorders, and primary immunodeficiencies. The authors reported descriptive demographic data, the primary reason for consult requests, outcomes, and involvement with external services, for example, palliative care and child protective services. They compared their results with other recently published studies.

Several commentators have identified methodological issues regarding this type of study. Antommaria argued for the need for a common list of reasons to advance scholarship on clinical ethics consultation[6] and Henriksen Hellyer and colleagues argued that "one of the most challenging aspects of interpreting ethics consultation practices across settings . . . is a nonstandard classification of consult types or 'reason for consult.' "[7] Gilliam, McDougall, and Delany proposed their own alternative typology of categories.[8] Given the debate over the appropriate development and content of consultation typologies, we conducted a systematic review of the literature to describe the typologies used to characterize clinical ethics consultations.

METHODS

Systematic Review

Inclusion criteria for the systematic review were (1) empirical studies of clinical ethics consultation that (2) categorized the ethical issues that prompted or were identified in the consultation, and (3) provided data on the number of consultations performed. Studies of the ethical issues encountered by healthcare professionals, causes of moral distress, and ethical issues in research were excluded. Articles that described each individual consultation, but did not categorize them, and articles that described selected consultations were also excluded. A search strategy was developed with the assistance of two medical librarians (Alison Kissling and Martina Darragh). It included indexed terms and text words to capture concepts related to empirical studies, clinical ethics consultation, and categories or types. (The full search strategy is available from the corresponding author.) The search was limited to the U.S. National Library of Medicine's PubMed, as this database indexes the journals most likely to publish such studies. The search was limited to articles published in English since 1980. Our review was registered with the international prospective registry of systematic reviews, PROSPERO.[9]

Two of the authors (JdB and AHMA) independently screened the titles and abstracts of the articles, and then independently reviewed the full text of the articles. The authors identified additional articles from the references and independently reviewed the full text of those articles. Articles that either author believed might be relevant based on review of the title and abstract or the references advanced to re-

view of the full text and disagreements following review of the full text were resolved by consensus.

Data Extraction and Coding

Two of the authors (JdB and AHMA) extracted the name of the institution from the articles that were included in the study, as well as the type of institution, the study population, the data collection period, the number of consultations, the primary outcome measure used, and the method used to derive the typology. These two authors characterized the primary outcome measure used in each article as either the reason(s) for consultation or the ethical issue(s) identified during the process of the consultation.

These authors characterized the primary outcome measure in the selected articles by whether the measure was identified prospectively or retrospectively, and whether the measure was defined by the requestor of the consultation, the ethics consultant, or the author(s) of the article. For each article, the authors categorized the method used to derive the typology as deductive, inductive, or both. By *deductive,* the authors mean that the typology used in each article was based on *a priori* categories or a review of the literature, and by *inductive,* the authors mean that the typology used emerged from a review of the consultations. Typologies were extracted from the articles by one of the authors (JdB) and reviewed for accuracy by another individual (Jennifer Longbottom). Some articles presented multiple typologies, for example, typologies of "primary consult activity" and "organizational issues," but only one typology of ethical issues was extracted per article.[10] Disagreements regarding the assignment of typology were resolved by consensus between the authors.

Using inductive and deductive reasoning, the authors developed a coding scheme that would allow comparison across studies.[11] Some codes were narrowly defined based on their common use in the ethics literature, for example, "best interest." Other codes were created to combine categories from different studies that were felt to represent similar ethical issues. For example, "durable powers of attorney for healthcare" and "living wills" were included in the code "advanced care planning." Some codes were gathered into clusters based on their relation to each other. For instance, the distinct codes for the different types of interpersonal conflict were combined into a cluster, or grouping that we called "conflict." The typologies were not exhaustively coded to the level of codes that only appeared a small number of times. For example, "community considerations,"[12] "guns in the home of home care patients,"[13] and "initiation of an individual attempt to cure"[14] each appeared in only one typology and were not coded. The resulting code schema was then utilized for thematic analysis of the typologies.

After reviewing the initial subsets of the typologies to refine the codes and coding rules, the authors reviewed and discussed how to apply the codes to enhance intercoder reliability.[15] The typologies were independently coded by all three of the authors using ATLAS.ti 8.0 qualitative software. Any discrepancies were discussed and resolved by consensus.

Figure 1. Data extraction process

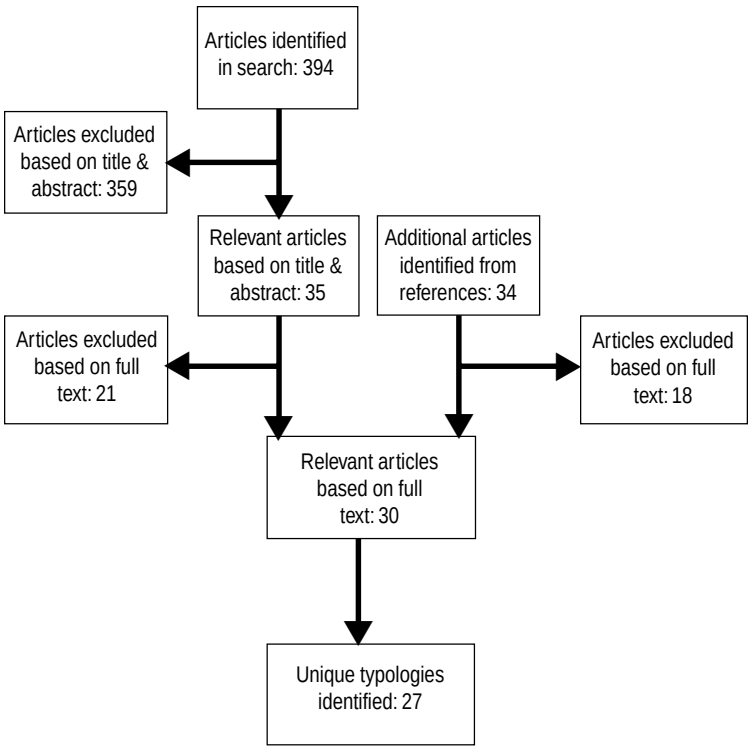

TABLE 1. Characteristics of studies

Article authors	Institution	Institution type	Study population	Data collection period	Duration of data collection (months)	Number of consultations	Total number of reasons or issues	Primary outcome measure	Derivation of typology	Number of categories
Boissy, Ford, Edgell, and Furlan	Cleveland Clinic, Cleveland, Ohio	Academic	Neurology inpatient, neurology step down, neuro-intensive care units. Nonneurological diagnoses excluded	1998-2004	72	49	49	Reasons for consultation identified by authors	Inductive	20
Bruce, Smith, Hizlan, and Sharp	Cleveland Clinic Cleveland, Ohio	Academic	--	Jan. 2007-Dec. 2008	24	478	NS	Ethical issues identified retrospectively by consultant	--	8
Forde and Vandvik	National Hospital Oslo, Norway	Academic	--	1996-2002	72	31	100	Reasons for consultation identified retrospectively by consultant	--	13
Fukuyama, Asai, Itai, and Bito	Clinical Ethics Support and Education Project, Japan[1]	--	--	Oct. 2006-Dec. 2007	15	25	25	"Consultation request classification" identified prospectively by consultant	--	13
Henriksen Hellyer et al.	Mayo Clinic, Rochester, Minn.	Academic	< 18 years old, or ≥ 18 years old, never competent, and treated in pediatrics	May 1995-June 2014	241	64	64	Reason for consultation identified retrospectively by consultant	Deductive	47
Johnson, Church, Metzger, and Baker	St. Jude's Children's Research Hospital, Memphis, Tenn.	Children's specialty	--	May 2000-Dec. 2011	140	53	79	Ethical issues identified retrospectively by authors	Both	27
Johnson, Lesandrini, and Rozycki	Grady Memorial Hospital, Atlanta, Ga.	Academic	Trauma patients	Jan. 2000-Dec. 2010	132	108	108	Ethical issues identified retrospectively by consultants	Deductive, based on Fox, Myers, and Pearlman[5]	28
La Puma (1987)	University of Chicago Hospitals	Academic	--	July 1985-June 1986	12	27	27	Ethical issues identified retrospectively by consultants	--	14
La Puma et al. (1988)	University of Chicago Hospitals and Clinics	Academic	--	July 1986-June 1987	12	51	138[6]	Reasons for consultation identified prospectively by requestor and consultant	Inductive	13
La Puma, Stocking, Darling, and Siegler	Lutheran General Hospital, Park Ridge, Ill.	Community	--	Jan. 1988-Dec. 1989	24	104	313[7]	Reason for consultation identified by requestor and consultant	--	18

McDougall and Notini	Royal Children's Hospital, Melbourne Vic., Australia	Children's	--	May 2005-Dec. 2014	116	184	184	Reason for consultation identified by requestor and consultant	Both	9
Moeller et al.	Akron City Hospital Akron, Ohio	Community	--	July 1997-March 2009	152	100	195	Reason for consultation identified retrospectively	--	9
Nilson, Acres, Tamerin, and Fins	New York-Presbyterian Healthcare System[2]	Healthcare system	--	2002 (30 days)	1	53	79	Reasons for consultation identified retrospectively by consultant	Both	9
Opel et al.	Seattle Children's Hospital, Seattle, Wash.	Children's	--	1996-2006	132	71	71	Reason for consultation identified retrospectively by authors	Deductive	12
Orr and Moon	Loma Linda University Medical Center, Loma Linda, Calif.	Academic	--	Aug. 1990-July 1991	12	46	144	Ethical issues identified retrospectively by requestor	Deductive, based on La Puma et al.[8]	19
Orr and Perkin	Loma Linda University Medical Center, Loma Linda, Calif.	Academic	≤ 18 years old	Aug. 1990-July 1992	24	64	179	Ethical issues identified retrospectively by consultant	--	21
Perkins and Saathoff	University of Texas Health Science Center, San Antonio, Tex.	Academic	--	Jan. 1984-June 1985	18	44	97	Ethical issues identified retrospectively by consultant	--	15
Ramsauer and Frewer	Erlangen University Hospital, Erlangen, Germany	Academic	Pediatric	2002-2008	84	16	NS	Reason for consultation and "Consultation Contents" identified retrospectively by authors	--	8
Romano et al.	Columbia University Medical Center, New York, N.Y.	Academic	Intensive care unit	Aug. 2006-July 2007	12	168	198	Ethical issue identified retrospectively by authors	Deductive, used Swetz, Crowley, Hook, and Mueller[9]	
Schenkenberg	Salt Lake VA Medical Center, Salt Lake City, Utah	Veterans Admini-stration	--	Jan. 1987-April 1996	124	160	249	Ethical issues	--	29
Shuman et al. (Sept. 2013)	National Cancer Institute designated comprehen-sive cancer centers[3]	Specialty	Adult oncology	2007-2011	48	208	NS	Reason for consultation identified prospectively	Deductive, based on Nilson, Tamer-in, and Fins[10]	8

Table 1. Continued next page.

TABLE 1. Characteristics of studies, *continued*

Article authors	Institution	Institution type	Study population	Data collection period	Duration of data collection (months)	Number of consultations	Total number of reasons or issues	Primary outcome measure	Derivation of typology	Number of categories
Shuman et al. (Nov. 2013)	Memorial Sloan-Kettering Cancer Center, New York, N.Y.	Specialty	Head and neck cancer	2007-2011	60	14	14	Reason for consultation identified prospectively	Deductive, based on Nilson, Tamerin, and Fins[11]	13
Streuli et al.	Zurich University Children's Hospital, Zurich, Switzerland	Children's	--	Jan. 2006-Dec. 2010	60	95	95	Ethical issues	--	11
Swetz, Crowley, Hook, and Mueller (June 2007)	Mayo Clinic, Rochester, Minn.	Academic	--	April 1995-Dec. 2005	129	255	1,181	Reason for consultation identified prospectively	Deductive	19
Swetz, Crowley, Hook, and Mueller (Dec. 2007)	Mayo Clinic, Rochester, Minn.	Academic	Neurological diagnosis	April 1995-Dec. 2005	120	47	129	Reason for consultation identified prospectively	Deductive, used Swetz, Crowly, Hook, and Mueller[12]	11
Tapper, Vercler, Cruze, and Sexson	Atlanta, Ga.[4]	Academic	--	2004-2006	36	285	7,598	Ethical issues identified retrospectively by consultant	--	32
Thomas et al.	Cleveland Clinic, Cleveland, Ohio	Academic	< 18 years of age. Presurgical neurologic consultations excluded	Jan. 2005-July 2013	106	102	261	Ethical issues identified by consultant	Inductive	29
Voigt et al.	Memorial Sloan-Kettering Cancer Center, New York, N.Y.	Specialty	Medical-surgical intensive care unit	Sept. 2007-Dec. 2011	52	53	53	Reasons for consultation identified retrospectively by authors	Deductive, used Nilson, Acres, Tamerin and Fins[13]	8
Wasson et al.	Loyola University Medical Center, Chicago, Ill.	Academic	--	2008-2013	60	156	53	Ethical issues identified retrospectively by authors	Both	40
Yen and Schneiderman	San Diego Children's Hospital and Health Center, San Diego, Calif.	Children's	--	Sept. 1990-April 1995	68	23	34	Ethical issues identified by consultant	--	5

NOTES

See the appendix for an alphabetical list of these articles. The column "Number of consultations" is the number of consultations analyzed, but may not be the total number of consultations during this time period. Some studies excluded some consultations based on type and/or completeness of records. The column "Primary outcome measure" is reported in the following format: reason for consultation or ethical issue identified prospectively or retrospectively by the requestor,

RESULTS

Study Characteristics

The literature search, performed on 30 December 2016, identified 394 articles. Of these, 359 were excluded based on a review of the titles and abstracts, and 21 were excluded based on a review of the full text. An additional 34 articles were identified from references, and 18 of these were excluded based on a review of their full text. For example, articles that reported on clinician focus groups,[16] a survey of ethics committee chairs,[17] and published professional codes[18] were excluded. Of the 394 articles, 30 met our inclusion criteria and are included in this review. (See the appendix for a bibliography of the 30 articles.) Figure 1 depicts the data-extraction process.

Studies were conducted in the U.S. and a number of other countries including Australia,[19] Germany,[20] Japan,[21] Norway,[22] and Switzerland.[23] (See table 1.) The majority of studies were conducted at academic medical centers (n = 17). Cleveland Clinic,[24] Loma Linda University Medical Center,[25] Mayo Clinic,[26] and University of Chicago Hospitals[27] were the subject of multiple reports. A number of studies were conducted at children's hospitals or focused on pediatric patients (n = 9). Other sites included community hospitals,[28] health systems,[29] specialty hospitals,[30] and Veterans Affairs hospitals.[31] Several studies focused on specific patient populations including neurology patients,[32] trauma patients,[33] and patients with cancer.[34]

The earliest study was published in 1987.[35] The duration of data collection ranged from one month[36] to 241 months.[37] Some of the studies excluded consultations for a variety of reasons, and the resulting number of consultations ranged from 14[38] to 478.[39]

The studies described their primary outcomes in a variety of ways; 14 typologies described the reasons that triggered the consultation; 13 described the issues identified during the consultation. Of the 30 articles, 11 studies reported one ethical issue per consultation, 16 reported one or more issues, and three did not specify the number of issues. The articles differed regarding whether the issues were identified prospectively or retrospectively, or by the requestor, the consultant, or the investigator.

Content of the Typologies

The 30 articles that met our inclusion criteria included 27 unique typologies (a table of all of the typologies is available from the corresponding author). Three articles utilized previously published typologies: Swetz, Crowley, Hook, and colleagues[40] utilized their previously developed typology;[41] Romano, Wahlander, Lang, and colleagues[42] utilized a typology developed by Swetz, Crowley, Hook, and colleagues;[43] and Voigt, Rajendram, Shuman, and colleagues[44] utilized a typology developed by Nilson, Acres, Tamerin, and Fins.[45] While four articles reported that they utilized existing typologies, the categories included were not identical to the previously published typology, and they were included as distinct typologies.[46]

consultant, or authors; missing components were not specified in the article. NS = not specified.
1. Japanese medical institutions.
2. Two large medical centers in Manhattan, three community teaching hospitals in Brooklyn and Queens, and two community teaching hospitals in northern New Jersey.
3. One freestanding urban cancer center in a Northeastern metropolis, and one cancer center integrated within a large academic health system in a small Midwestern city.
4. A large urban public teaching hospital.
5. E. Fox, S. Myers, and R.A. Pearlman, "Ethics Consultation in United States Hospitals: A National Survey," *American Journal of Bioethics* 7, no. 2 (February 2007): 13-25.
6. This is the total number of reasons identified by the consulting physician.
7. Ibid.
8. J. La Puma et al., "An Ethics Consultation Service in a Teaching Hospital. Utilization and Evaluation," *Journal of the American Medical Association* 260, no. 6 (12 August 1988): 808-11.
9. K.M. Swetz, M.E. Crowley, C. Hook, and P.S. Mueller, "Report of 255 Clinical Ethics Consultations and Review of the Literature," *Mayo Clinic Proceedings* 82, no. 6 (June 2007): 686-91.
10. E.G. Nilson, C.A. Acres, N.G. Tamerin, and J.J. Fins, "Clinical Ethics and the Quality Initiative: A Pilot Study for the Empirical Evaluation of Ethics Case Consultation," *American Journal of Medical Quality* 23, no. 5 (September-October 2008): 356-64.
11. Ibid.
12. Swetz, Crowley, Hook, and Mueller, "Report of 255 Clinical Ethics Consultations," see note 9 above.
13. Nilson, Acres, Tamerin, and Fins, "Clinical Ethics and the Quality Initiative," see note 10 above.

TABLE 2. Contents of typologies

Code	Numer of typologies that include code	% of typologies that include code	Henriksen Hellyer et al.	Moeller et al.	Nilson, Acres, Tamerin, and Fins	Orr and Moon	Shuman et al. (Nov. 2013)	Swetz, Crowley, Hook, and Mueller	Wasson et al.	Boissy, Ford, Edgell, and Furlan	Johnson, Church, Meltzer, and Baker
Number of the 5 most common codes	--	--	5	5	5	5	5	5	5	4	4
DNAR orders	19	70	X	X	X	X	X	X	X	X	X
Capacity	18	67	X	X	X	X	X	X	X	X	X
Withholding	18	67	X	X	X	X	X	X	X		X
Withdrawing	17	63	X	X	X	X	X	X	X	X	X
Surrogate or proxy	16	59	X	X	X	X	X	X	X	X	
Futility	15	56	X	X	X		X	X	X	X	X
Conflict cluster	15	56	X	X		X		X		X	X
Not otherwise specified	8	30				X				X	
Between patient/family and team	9	33	X	X						X	X
Family conflict	3	11						X			X
Within family	5	19								X	X
Within team	8	30						X		X	X
Life-sustaining treatment	14	52		X	X		X		X	X	X
Professionalism cluster	14	52	X			X	X	X	X		X
Not otherwise specified	8	30	X					X	X		X
Truth-telling	10	37	X			X	X				X
Boundaries	4	15	X								
Conflict of interest	2	7									X
Refusing treatment	14	52			X	X	X		X	X	X
Legal	13	48	X			X		X	X	X	
Resources	13	48	X			X	X	X			X
Advanced care planning	12	44	X		X		X	X	X	X	X
Autonomy	12	44	X			X		X	X	X	X
Medical subspecialty cluster	11	41						X	X	X	
Reproductive health	6	22						X	X		
Psychiatry	5	19						X		X	
Other	5	19							X		
Culture	10	37	X					X	X		X
Discharge	10	37				X	X	X	X		
Informed consent	10	37	X		X		X		X		
Privacy and confidentiality	10	37	X				X	X			X
Specific interventions	10	37				X	X		X	X	
Goals of care	9	33	X	X				X	X		X
Research	9	33	X					X			X
Death	8	30	X						X	X	
Decision making	8	30	X						X	X	X
End-of-life care	8	30						X	X		X
Communication	7	26	X							X	
Palliative care	7	26					X		X		X
Permission and assent	7	26	X						X		X
Quality of life	7	26						X	X		
Difficult patients	5	19	X								
Nonadherence	5	19	X	X							X
"Other"	5	19		X				X		X	
Best interest	3	11							X		
Demanding	3	11				X					X
Hastening death	3	11	X								
Justice	3	11	X								X
TOTAL number of codes			27	11	10	14	16	23	26	20	28

NOTES: Clusters do not count towards the total. See the appendix for a bibliography of these articles.

La Puma, Stocking, Darling, and Siegler	La Puma et al.	La Puma	Orr and Perkin	Perkins and Saathoff	Shuman et al. (Sept. 2013)	Tapper, Vercler, Cruze, and Sexson	Johnson, Lesandrini, and Rozycki	Schenkenberg	Steuli et al.	Forde and Vandvik	Fukuyama, Asai, Itai, and Bito	Opel et al.	Thomas et al.	Yen and and Schneiderman	Bruce, Smith, Hizlan, and Sharp	McDougall and Notini	Ramsauer and Frewer
4	4	4	4	4	4	4	3	3	3	2	2	1	1	1	0	0	0
X	X	X	X	X	X	X	X	X	X								
X	X	X	X	X			X	X			X		X				
X	X	X	X	X	X	X			X	X				X			
X	X	X			X	X			X	X	X						
			X	X	X	X	X	X				X					
			X		X	X	X		X		X						
X	X		X			X		X	X				X	X		X	X
X	X		X											X			X
			X			X		X	X							X	
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			X			X										X	
			X			X		X	X				X				
X	X	X		X	X	X	X				X						
X						X	X	X									
X	X		X			X		X	X	X		X	X			X	
X										X	X		X			X	
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						X			X	X		X	X			X	
X			X			X	X	X			X						
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X					X	X	X	X			X	X	X				
X		X				X	X	X			X						
			X	X		X		X									X
						X		X									X
X		X	X					X				X	X		X		
X		X				X	X	X									
							X		X		X		X		X		
		X	X				X				X		X				
						X			X			X	X		X		
		X				X				X		X	X				
				X									X				
X			X			X						X	X			X	
							X		X		X		X		X		
						X						X	X				
X	X																
											X						X
				X													
	X						X										
											X						X
18	**14**	**13**	**16**	**10**	**9**	**26**	**18**	**17**	**12**	**5**	**14**	**9**	**20**	**4**	**6**	**6**	**6**

The studies developed their typologies using a variety of methods. They characterized the consultations deductively based on *a priori* categories or a review of the literature (n = 8), inductively based on categories developed from a qualitative analysis of the cases (n = 2), or based on a combination of both approaches (n = 3). Some studies categorized their consultations based on a published coding catalog or typology.[47] Almost half of the studies (14) did not state how they developed their categories. Only two studies included examples of their categories[48] and only one included a code book with definitions.[49]

All but one of the studies presented their typologies in a table, figure, or box.[50] Of these, 11 typologies were divided into major headings and subcategories. The number of categories in each typology ranged from five to 47 (mean = 18).

We created 45 codes based on the concepts that appeared in the published typologies (see table 2). The most commonly used codes were "DNAR orders" (19 typologies, 70 percent), "capacity" (18 typologies, 67 percent), "withholding" (18 typologies, 67 percent), "withdrawing" (17 typologies, 63 percent), and "surrogate or proxy" (16 typologies, 59 percent). Seven (26 percent) of the typologies contained all five of the most frequently appearing codes. None of the typologies contained all 10 of the most frequently used codes; two typologies contained nine of the 10 most frequently used codes.[51] One typology contained none of the 10 most frequently used codes.[52]

Some codes were related to ethical principles—for example, "autonomy" and "justice"—or ethical issues—for example, "DNAR [do-not-attempt-resuscitation] orders," "capacity," "surrogate or proxy," "advance care planning," "informed consent," and "privacy and confidentiality." Other codes referred to decision making in general, for example, "decision making" and "goals of care," decision making dynamics, for example, "withholding," "withdrawing," "refusing," and "demanding," or types of interventions, for example, "DNAR orders," "life-sustaining treatment," "end-of-life care," and "palliative care," without specifying specific ethical issues. Finally, some codes identified sources of ethical norms without specifying particular ethical issues, for example, "legal" and "culture," which included religion, specific religious groups, and spirituality.

DISCUSSION

Our systematic review identified 30 articles containing 27 unique typologies of the reasons for or ethical issues identified in clinical ethics consultations. The studies varied in type of institution, duration of data collection, number of consultations, primary outcome measure, and number of categories and typology. The number of categories in each typology ranged from five to 47 (mean = 18). The most commonly used codes were "DNAR orders," "capacity," "withholding," "withdrawing," and "surrogate or proxy." Only seven of the 27 (26 percent) contained all five of the most common codes.

While evaluation of the reasons for clinical ethics consultations has generated a substantial body of literature, this literature has a number of limitations. First, the studies utilized a variety of primary outcome measures. It may be beneficial to identify the benefits and detriments of focusing on the perspectives of the requestor, the consultant, or the investigator as well as the benefits and detriments of prospective and retrospective coding. Furthermore, some studies identified a single ethical issue per consultation, and others multiple ethical issues per consultation. It was not clear how the former studies identified the most important issue.

Second, 13 studies did not specify how they developed their typologies, and those that did specify used a variety of methods. Ideally, one might use both deductive and inductive approaches, draw on ethical theory and the published literature, as well as analyses of the consultations themselves. Some of the typologies did not include important ethical concepts, for example, Moeller and colleagues did not include "privacy and confidentiality."[53] Collaboration will be required to overcome the limitations of inductive analyses of consultations from one institution; for example, augmenting the experience of institutions that do not provide obstetric or pediatric care with those that do.

Third, there was no standard typology; the existing typologies were significantly heterogeneous. There was no consensus on even the most frequent codes. For example, "DNAR orders," the most frequent code, did not appear in almost one-third of the studies. This lack of uniformity made it difficult to compare institutional experiences; for example, how did the reasons for consultations differ between types of institutions, institutions in different geographic re-

gions, or methods of clinical ethics consultation.[54]

Fourth, with one exception, the studies did not provide a code book with clear definitions or examples of their categories.[55] This made coding and interpretation of some of the categories more subjective. For example, "family conflict," which appeared in three typologies, is ambiguous; it is unclear whether it referred to conflict between the family and the medical staff and/or conflict within the family. Additionally, typologies included categories that were difficult to distinguish from each other, for example, separate categories for "constrained decision making" and "threatened autonomy."[56] A lack of well-defined categories made it difficult for institutions that wished to utilize an existing typology to apply it consistently. Additional research is needed to establish the reliability of different raters applying a typology's categories.

Fifth, many of the typologies included multiple, conceptually distinct topics in a single typology.[57] For example, some typologies included categories for "conflict and/or types of conflict." Consultations may be the result of either dilemmas or conflicts. There may be uncertainty about the ethical issue, or interpersonal conflict regarding the ethical issue, but the dynamic is separate from the ethical issue itself. Other typologies included categories regarding particular types of treatment, for example, "DNAR orders," "end-of-life care," and "palliative care." It was unclear whether these categories identified specific ethical issues or clinical scenarios. Finally, some typologies included categories that were coded as "culture" or "legal." These categories generally identified a source of ethical norms rather than the ethical issue; they generally modified rather than characterized the ethical issue. It would have been clearer for typologies to treat these topics as separate issues rather than include them in a single typology. For example, Johnson, Church, Metzger, and Baker[58] distinguished the primary reason for a consult request and involvement of external services (chaplaincy, palliative care, legal, and child protective services); Henriksen Hellyer and colleagues[59] distinguished "evidence of interpersonal conflict," "interpersonal conflict type," "primary reason for consult," "legal involvement," and "consult and end of live [*sic*]".

These limitations suggest the need for a uniform typology. Such a typology would have a number of benefits: it could support clinical practice, scholarship, and professionalization. Data on the frequency of different ethical issues could, for example, inform the development of specified content for a certification examination for clinical ethics consultants. The development and adoption of a uniform typology would be facilitated by collaboration among a variety of institutions. This would provide a diversity of perspectives in developing a typology and promote investment in utilizing the resulting product. Professional organizations could play a crucial role in funding and coordinating the development process.

This systematic review has several limitations. It only retrieved published typologies and did not include typologies that were not published in the scholarly literature. Our utilization of a single database, PubMed, and language, English, may have inadvertently excluded some published clinical ethics typologies. Our review also only retrieved typologies that were published in particular types of articles. The review may, therefore, have omitted some typologies. It, nonetheless, resulted in relatively large listing of typologies. Our preconceptions or biases may have inadvertently influenced our coding of the data. The heterogeneity of the typologies prevents a meta-analysis of the results of the studies.

Our systematic literature review of typologies of clinical ethics consultation identified 30 articles and 27 unique typologies. The studies varied in terms of institution type, geographic location, time frame, and number of consultations. The studies used different primary outcome measures. The typologies differed from one another in number and types of categories, which made comparisons between the studies difficult. This suggests the need for a uniform typology with clear definitions to advance practice and scholarship within the field. We believe that such a typology will provide a common language and framework to categorize consultations and compare consultation patterns.

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APPENDIX

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