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Do surgeons and patients discuss what they document on consent forms?

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Abstract

Background—Previous studies of surgeon behavior report that surgeons rarely meet basic standards of informed consent, raising concerns that current practice requires urgent remediation. We wondered if the Veterans Affairs Healthcare System's recent implementation of standardized, procedure-specific consent forms might produce a better practice of informed consent than has been reported previously. Our goal was to determine how the discussions shared between surgeons and patients correspond to the VA's standardized consent forms.

Methods—We enrolled a prospective cohort of patients presenting for possible cholecystectomy or inguinal herniorrhaphy and the surgical providers for those patients. Audio recordings captured the clinical encounter(s) culminating in a decision to have surgery. Each patient's informed consent was documented using a standardized, computer-generated form. We abstracted and compared the information documented with the information discussed.

Results—Of 75 consecutively enrolled patients, 37 eventually decided to have surgery and signed the standardized consent form. Patients and providers discussed 37% (95% confidence interval, 0.07–0.67) and 33% (95% confidence interval, 0.21–0.43) of the information found on the cholecystectomy and herniorrhaphy consent forms, respectively. However, the patient–provider discussions frequently included relevant details nowhere documented on the standardized forms, culminating in discussions that included a median 27.5 information items for cholecystectomy and 20 items for herniorrhaphy. Fully, 80% of cholecystectomy discussions and

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Disclosure

The opinions expressed in this review are those of the authors and do not necessarily reflect the position of the Department of Veterans Affairs or the United States government.

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76% of herniorrhaphy discussions mentioned at least one risk, benefit or alternative, indication for, and description of the procedure.

Conclusions—The patients and providers observed here collaborated in a detailed process of informed consent that challenges the initial reports suggesting the need to remediate surgeon's practice of informed consent. However, because the discrepancy between the information documented and discussed exposes legal and ethical liability, there is an opportunity to improve the iMed system so that it better reflects what surgeons discuss and more frequently includes all the information patients need.

Keywords

Informed consent; Shared decision making; Ethics; Cholecystectomy; Herniorrhaphy

1. Introduction

Informed consent is a legal and ethical imperative for surgery. What began as a legal protection for a patient's right to make decisions has emerged as a general framework for medical decision making [1–4]. However, initial reports of surgeon behavior found that only 15.2% of discussions about proposed surgery described the nature of the procedure along with at least one risk and one alternative [5]. This report and others similar to it suggested that surgeons rarely meet even the most rudimentary standards of informed consent [4–7].

Failure to meet the standards of informed consent undermines the quality of care, violates ethical norms, and can result in legal liability. One way to support high-quality processes of informed consent is to develop procedure-specific consent forms that detail particular risks, benefits, and alternatives [8–10]. For example, in 2004, the Veterans Health Administration implemented a computer-based tool (iMed-Consent; Dialog Medical, Atlanta, GA) that provides over 1000 procedure-specific forms, vetted by national experts and written in nontechnical language. VA Central Office considers these forms a minimum standard for informed consent, instructing surgeons to "go through the entire form with the patient and ensure that all information is accurate and edit as needed." With their signature, the surgeons attest that "*all* relevant aspects of the treatment and its alternatives have been discussed (emphasis added)." As implemented, the iMed system is intended to support the legal and ethical imperative for surgeons and patients to discuss material risks, benefits, and alternatives [11].

Although 99% of the procedures performed in the VA are now documented with iMed [12], it is not known how the documents correspond to the discussions actually shared by providers and patients. We also wondered if the implementation of standardized consent forms would produce more detailed discussions than described by previous studies. Therefore, we designed this study to compare the information discussed in the clinical encounter with the information documented on the iMed forms.

2. Methods

We recruited patients and surgical providers from the general surgery clinic at a large VA Medical Center. We included all patients presenting for inguinal hernia or benign biliary

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disease. We excluded patients who had previous inguinal herniorrhaphy, required surrogate consent, could not communicate in English, or had visual impediments limiting their reading ability. For surgical providers, we included all attending surgeons, physician assistants, and surgical residents who interacted with enrolled patients. All procedures were approved by the institutional review board.

We used portable audio recorders to capture the patient– provider discussions during the clinic visit. For each patient agreeing to recommended surgery, we printed a copy of the corresponding iMed consent document. Most decisions were reached in a single clinic visit, but in cases where further diagnostic workup was required, we continued to follow and record patients over subsequent clinic visits until a decision for (or against) surgery was made. These methods culminated in a copy of each participant's iMed document and a recording of all patient–provider discussions leading up to and including the completion of the iMed document.

A trained analyst then conducted a chart review to abstract each discrete piece of information from each iMed document. The abstracted information included descriptions of the procedure along with relevant risks, benefits, indications, and alternatives. Each item of information was clearly defined, categorized according to content, and added to a database. The database remained open throughout the chart review to accommodate new information items as they appeared. After abstracting information from all the iMed documents, the same analyst abstracted each discrete piece of information uttered during the recorded patient–provider discussions. The analyst also noted if the providers (a) gave patients an opportunity to ask questions and (b) checked their comprehension by asking them to "repeat back" their understanding of the discussion. The final database included a complete enumeration of each discrete piece of information written on the iMed documents or uttered in the patient–provider recordings.

At the level of the individual patient–provider dyad, we used Stata statistical software (StataCorp, LP, College Station, TX) to compare the information on the iMed documents to the information actually discussed during the clinic visit, summarizing the results with descriptive statistics and calculating the 95% confidence interval around the proportion of information documented that was actually discussed. Based on the coding framework developed by Braddock [4,5], we then calculated the proportion of patient–provider discussions in which patients and providers discussed at least one risk, benefit, alternative, indication for, and description of the procedure. Comparisons between provider types (e.g., resident, physician assistant, staff surgeon) were not possible because the analyst could not reliably identify the providers on each recording.

3. Results

From October 2009–August 2010, we enrolled 75 of 165 patients presenting consecutively for possible inguinal herniorrhaphy or cholecystectomy (Figure). Two patients withdrew from the study, 23 patients never signed an iMed document because surgery was not indicated or desired, 1 recording was discarded for poor quality, and 12 recordings were incomplete due to operator error or because the decision to have surgery transpired outside

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the clinic (e.g., emergency surgery or telephone consultations). The final sample included 37 recorded patient–provider discussions matched with corresponding iMed documents. Patients were 95% male, 79% Caucasian, and the mean age was 56 y. Marital status, education, income, and literacy were typical for VA populations and published elsewhere with the results of a related survey [13].

The surgery clinic was run by a team of resident physicians and physician assistants led by a chief resident and supervised by one or two staff surgeons. Staff surgeons took an active role during the clinic, evaluating patients independently while supervising the coordination of the team. Patients typically encountered more than one of these provider types during their visit in a team effort that distributed responsibility according to experience. We enrolled 5 chief residents, 15 junior residents, 3 physician assistants, and 2 staff surgeons (not including Daniel E. Hall), totaling 25 surgical providers who interacted with the enrolled patients. Clinic visits lasted 88 ± 38 min, of which patients interacted with surgical providers for 42 ± 19 min (the remaining time was spent waiting to meet the next clinician in their workup).

3.1. Information items either documented or discussed

Because iMed includes documents specific to particular procedures (e.g., cholecystectomy) and to particular operative techniques (e.g., laparoscopy), our sample included seven different cholecystectomy documents and four different herniorrhaphy documents. Across these documents, we identified 52 information items particular to cholecystectomy and 36 information items particular to herniorrhaphy, categorized into risks, benefits, alternatives, indications for, and descriptions of the procedure (Tables 1 and 2).

Because the audio recordings frequently included information nowhere documented on the iMed forms, we defined 92 additional information items found “only” in the patient–provider discussions (45 cholecystectomy and 47 herniorrhaphy), requiring two additional categories of information as follows: (1) descriptions of the patient’s experience and (2) surgical anatomy (Table 2 contains the full coding framework).

3.2. Comparing the information discussed to the information documented

For each patient–provider dyad, we compared the information in the patient–provider discussion to the information found in the corresponding iMed document. We found that across all patient–provider dyads, the cholecystectomy discussions included 37% (95% confidence interval, 7%–67%) of the information found in the corresponding iMed documents. The proportion for herniorrhaphy discussions was 33% (95% confidence interval, 21%–43%). For example, of the median 44 information items on each cholecystectomy document, only 15 were discussed by the surgeon and patient (Table 3). However, the discussions included additional information not documented on the iMed forms (median = 10.5 for cholecystectomy and 13 for herniorrhaphy), yielding discussions that included a total of 27.5 information items for cholecystectomy and 20 items for herniorrhaphy.

At the level of the individual information item, some items were widely prevalent across both the iMed documents and the patient–provider discussions, whereas other items were relatively rare (Table 2). For example, all the cholecystectomy documents and 80% of the

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discussions mention wound infection as a risk of surgery. By contrast, the risk of pulmonary embolus is discussed in only 15% of the encounters despite appearing on all the cholecystectomy documents. It is also important to note the critical importance of some of the information added during the discussions. For example, none of the iMed documents list gallstone pancreatitis as an indication for cholecystectomy, but 30% of discussions specified this common indication. Other important information added during the discussion include the advantages of laparoscopic surgery, the anatomic placement of hernia mesh, medical treatment of gallstones (e.g., cholestyramine), and alternative indications for surgery (e.g., hernia pain, increasing hernia size, biliary dyskinesia, or gallstone pancreatitis).

3.3. Basic informed consent

To compare our findings to previous studies of informed consent discussions [4,5,14], we calculated the proportion of patient–provider discussions that mentioned at least one risk, benefit, alternative, indication for, and description of the procedure. Although the prevalence of each of these information categories was high (Table 4), only 50% of cholecystectomy discussions and 29% of the herniorrhaphy discussions included one item from each category. However, after combining alternatives and risks, 80% of cholecystectomy discussions and 76% of herniorrhaphy discussions mention at least one risk, benefit or alternative, indication for, and description of the procedure. Finally for both cholecystectomy and herniorrhaphy, the providers regularly asked patients if they had any questions (80% cholecystectomy; 94% herniorrhaphy) but less frequently checked patients' comprehension by asking them to "repeat back" what they heard the surgeon say (20% cholecystectomy; 53% herniorrhaphy).

4. Discussion

4.1. The correspondence between discussions and documents

This study demonstrates that providers did not discuss every item on the iMed documents, typically discussing only one-third of the information on the consent forms. Conversely, the iMed documents did not provide all the information clinicians discussed (e.g., providers typically discuss details that are not documented on the standardized forms). These findings present an opportunity to improve the iMed system so that it better reflects what surgeons and patients discuss.

High-quality documentation of the consent process should reflect the actual discussions shared between patients and providers [11], and the VA clearly expects its surgeons to discuss all the information on the iMed forms, instructing surgeons to "go through the entire form and attest that all relevant aspects. have been discussed." Our data demonstrate that this is not happening.

If the VA-approved consent documents are taken as a "gold standard," these surgeons may need remediation. However, the fact that these surgeons are supplementing their discussions with relevant information nowhere found on the VA-approved forms suggests that the forms themselves may need remediation. Accurately identifying which of these options is indicated requires a more complete understanding of the underlying process of informed consent the forms are intended to support.

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4.2. The process of informed consent

We found that patients and providers typically discussed 20–27 pieces of information relevant to each proposed surgery, including 7 risks, 1 benefit, 1–2 alternatives, 3 indications, and 5–6 descriptions of the procedure. Although these discussions left out much of the detail found on the VA-approved forms, they are substantially more detailed than Braddock's [5] initial work, reporting that only 15.2% of discussions culminating in a "complex decision" met the "minimal definition consistent with an ethical framework." Using Braddock's criteria, we found that 85% of cholecystectomy discussions and 41% of herniorrhaphy discussions described the nature of the procedure along with at least one risk and one alternative. Braddock's [4] later study of 133 discussions between orthopedic surgeons used a more lenient standard, finding that 57% of the discussions described the proposed procedure along with either the patient's "preference" regarding surgery (e.g., their intent to have it or not) or the patient's role in the decision-making process. By contrast, because every patient in our sample stated their intent to have surgery, we found that 100% of herniorrhaphy discussions and 90% of cholecystectomy discussions met this more lenient standard. Indeed, using our own, more stringent standard, we found that 76%–80% of encounters discussed at least one risk, benefit or alternative, indication for, and description of the procedure.

One possible reason for the difference between our findings and Braddock's is methodological. Braddock analyzed multiple visits by the same patient for the same condition as independent events. Our method addressed this limitation by following patients over multiple visits when further workup was required, analyzing these multiple visits as a single, cumulative event. However, in our sample, all the decisions regarding herniorrhaphy were reached in a single visit, and only 2 of the 20 cholecystectomy decisions required more than one clinic visit, leading us to conclude our results are not due to differences in methodology.

A second possible reason for the difference between our findings and Braddock's concerns differences between the surgeons. Braddock recruited orthopedic surgeons during the 1990s, whereas our sample included general surgeons from the 2000s. The culture and training of these two samples may be different. Etchells *et al*. [14] recently published findings from a cohort of vascular surgeons, finding that 58% of the discussions in which surgery was recommended demonstrated "complex" informed decision making, discussing risks, benefits, and alternatives to the proposed surgery as well as the uncertainty of the decision. These data suggest that the informed consent practices of Etchells' vascular surgeons and our general surgeons are more detailed than Braddock's orthopedic surgeons. The reasons for these differences are not clear, although it is possible that the infiltration of medical ethics in medical school and residency has changed surgeons' attitudes toward informed consent.

Finally, it is possible that iMed has influenced the practice of informed consent among our cohort by providing a detailed set of documents that guide the clinical discussions. This influence might explain the comparatively detailed discussions observed in our sample.

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Previous research makes the assumption that detailed discussions between surgeons and patients are at least a necessary, if not sufficient, condition for informed consent [1,4–6,9,14,15]. By this standard, the surgeons and patients studied here are doing quite well. They may not discuss all the information contained on the VA-approved forms, but their discussions clearly satisfy accepted legal and ethical standards most of the time. This represents a significant improvement in surgeon behavior. However, the ultimate quality of informed consent depends not only on what is discussed but on what patients take away from the consent process and the way it influences patient-centered outcomes.

Four findings from previously published analyses of this cohort support the conclusion that the consent process observed here meets the ethical standards of informed consent. First, after the informed consent discussions, these patients' comprehension of procedure-specific risks, benefits, and alternatives improved significantly [13]. Second, their desire to actively participate in the decision-making process (rather than defer to the surgeon) increased, suggesting that the consent process activated patient participation as intended [13]. Third, their preference to know as many details as possible about the procedure decreased, suggesting that their information preferences had been satisfied [13]. Finally, they reported high levels of trust in the surgeon and low levels of anxiety and ambivalence about their decisions to have surgery [13].

Given the strength of the consent process observed here, we suggest that rather than remediating the surgeons, quality improvement initiatives should focus on revising the iMed forms (and the assumptions on which they are based) to better reflect the process that actually transpires between surgeons and patients. One small example would be to modify the iMed tool to list individual information items as toggle boxes from which surgeons could quickly select the items they actually discussed. Such a flexible approach acknowledges that patients' informational needs differ and reminds surgeons of information they might have neglected. This approach might also improve the correspondence between the discussions and documents, thus eliminating the threat of fraud.

4.3. Limitations

Our findings are limited in several ways. First, our small sample recruited from a single site limits generalizability. However, we note that previously published studies on this topic report similarly limited samples. Second, like all previously published analyses of patient–provider discussions, our results may be biased by the participants' awareness that we were recording and analyzing their discussions (e.g., Hawthorne effect). However, research shows that unobtrusive recording techniques such as those used here produce only a minimal Hawthorne effect [16–22] that fades rapidly [23], and several authorities conclude that there are insufficient data to support significant Hawthorne effects in studies such as this [24–26]. In any case, the Hawthorne effect in this study was not strong enough to induce providers to discuss the "entire form" as their attestation claimed. Third, we are unable to assess the important, reciprocal process of "informed refusal" because our methods excluded patients who did not agree to have surgery. Fourth, the sampled physicians were mostly residents, further limiting generalizability to fully trained physicians in private practice, and our methods did not permit comparison between physician types. This may be a fruitful

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direction for future research. Fifth, limited sample size precluded statistical modeling of the relationship between the information discussed and outcomes such as comprehension, trust, anxiety, and information preference. Finally, our findings may be biased by our choice of surgical procedures, which, though common, do not present complex choices between multiple treatment methods as might be found in the treatment of prostate cancer.

5. Conclusions

We observed a process of informed consent during which patients and providers discussed a substantial proportion of the information included in standardized iMed consent documents. The discussions also included details about patient experience, logistics of care, and indications for the procedure that are not found in the iMed documents. These findings challenge earlier reports suggesting that surgeons' practices of informed consent require remediation. They also demonstrate room for improving the correspondence between the iMed documents and the discussions actually shared between patients and providers. Further research is needed to examine how the content of informed consent discussions influence important patient-centered outcomes such as decision quality, comprehension, trust, anxiety, and confidence in the decision to accept or refuse surgery.

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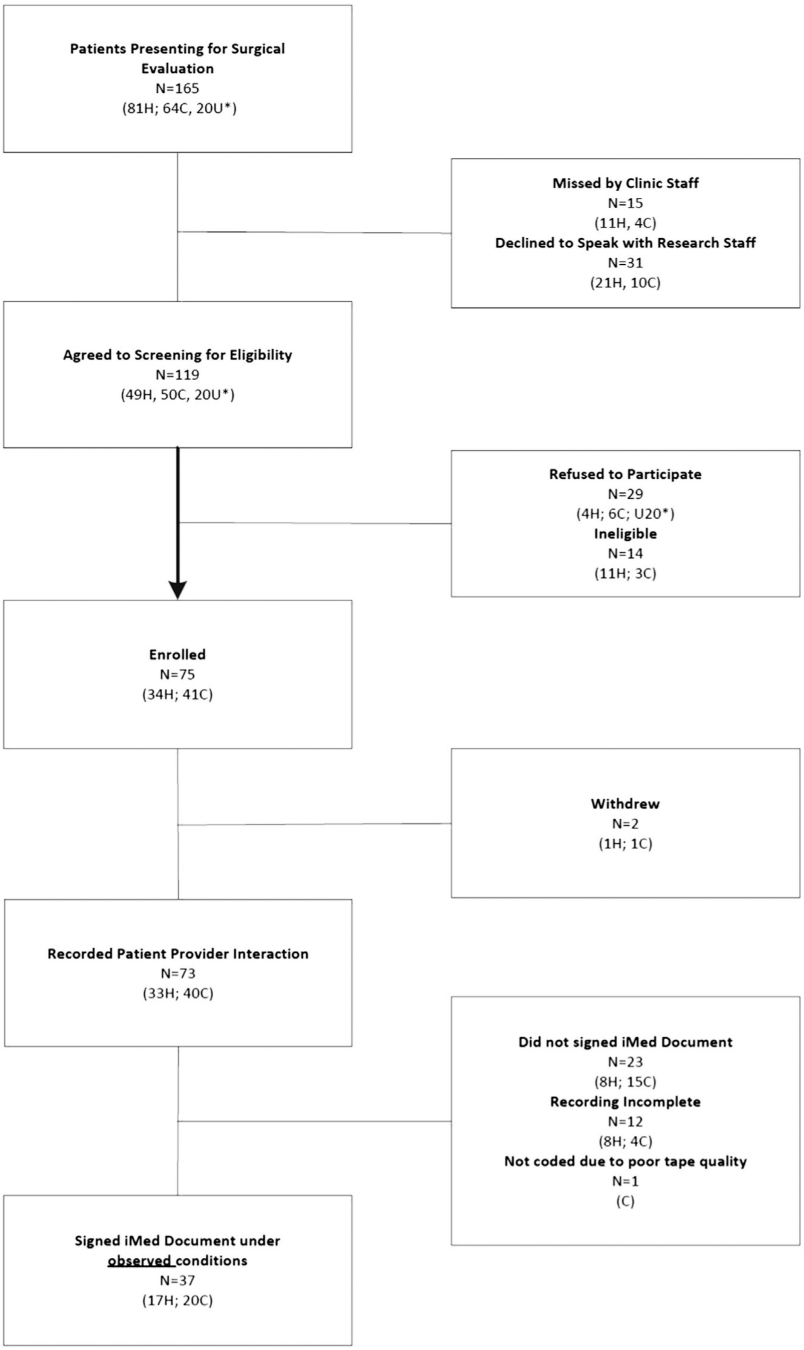

Figure.

Recruitment of Patient Sample. From October 2009–August 2010, 165 patients presented consecutively for possible inguinal herniorrhaphy (H) or cholecystectomy (C), although the reason is unknown (U) for a portion of the sample. Thirtyone patients declined to speak with research staff when asked if they were interested in participation, and 15 were never approached by the clinic staff. Of the 119 patients screened, 29 refused to participate and 14 were ineligible. Of the 75 patients enrolled, 2 withdrew, 23 did not sign an iMed document, 12 had incomplete recordings, and 1 was excluded from analysis because of poor tape

quality. This yielded a total sample of 37 patients who signed an iMed document under observed conditions (e.g., a complete audio recording).

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Table 1

Total number of information items found on either the iMed documents or in the patient-provider discussions.

Information type	iMed documents*	Discussions only items†
Cholecystectomy (*n* = 20)		
Procedural information		
Risks	22	6
Benefits	3	6
Alternatives	3	8
Indications for procedure	6	3
Description of procedure	18	2
Total procedural information	52	25
Additional information		
Patient experience	N/A	14
Anatomy	N/A	6
Total	52	45
Herniorrhaphy (*n* = 17)		
Procedural information		
Risks	16	7
Benefits	1	7
Alternatives	3	2
Indications for procedure	2	4
Description of procedure	14	9
Total procedural information	36	29
Additional information		
Patient experience	N/A	16
Anatomy	N/A	2
Total	36	47

N/A = not applicable.

Each column is mutually exclusive and lists the total number of distinct information items found across all the different iMed consent forms (documents) and patient–provider discussions. Any given iMed document or patient–provider discussion included only a subset of these information items.

*The information documented at least once on any of the seven different cholecystectomy documents and four different herniorrhaphy documents.

†The information discussed at least once in any of the 37 patient– provider discussions but not included on any of the iMed documents.

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Table 2

Prevalence of individual information items across all documents and all discussions.

Information type	Information item	Information discussed (%)	Information documented (%)
Cholecystectomy (n = 20)			
Risks	Wound infection	80	100
	Conversion to open surgery	80	100
	Injury to bile duct	75	100
	Unexpected change in procedure	70	100
	Injury to bowel	35	100
	Bile leakage	25	100
	Pulmonary emboli	15	100
	Death	15	100
	Hernia formation	10	100
	Allergic reactions to contrast dye	0	100
	Possible significant blood loss	65	95
	Less than complete recovery	40	95
	Cardiovascular problems	15	95
	Abdominal infection	10	95
	Injury to pancreas	5	90
	Retained stones	15	75
	Deep vein thrombosis	5	75
	Injury to other intra-abdominal organs	65	10
	Air embolism	0	10
	Bladder injury	15	5
	Pancreatitis	5	5
	Bleeding after surgery	10	0
	Aggravation of pulmonary blood clots	5	0
	Stroke	5	0
	Surgeries have risks (generic)	5	0
	Stress to kidney	5	0
Benefits	Pain relief	30	100
	Inflammation (reduction)	15	100
	Infection (treatment)	5	100
	Laparoscope produces quicker recovery	40	0
	Laparoscope produces less pain	30	0
	Treatment of gallbladder disease	20	0
	Laparoscope causes less bleeding	5	0
	Laparoscope requires smaller incision	5	0
	Removal of cholecystostomy tube	5	0
Alternatives	Observation	20	100
	Open surgery	65	95
	Laparoscopic approach	40	70

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Information type	Information item	Information discussed (%)	Information documented (%)
	Medical treatment (e.g., cholestyramine)	20	0
	Breaking up stones	15	0
	Surgery-not specified	10	0
	Additional workup	5	0
	Avoid fatty foods	5	0
Indications for procedure	Stones	75	100
	Gallbladder pain	70	95
	Gallbladder disease	25	95
	Gallbladder infection	30	90
	Gallbladder inflammation	15	90
	Upper intestinal symptoms	30	70
	Relief from gallbladder problems	50	0
	Gallstone pancreatitis	30	0
	Biliary dyskinesia	5	0
Description of procedure	Laparoscope definition	75	100
	Laparoscope into incision	75	100
	Gallbladder cut away from liver	45	100
	Gallbladder removed through incision	45	100
	Incisions sutured	20	100
	Cholangiogram	10	100
	Dye shows gallstones	5	100
	Removal of gallbladder	80	95
	Incisions allow laparoscopic instruments	75	95
	General anesthesia	45	95
	Carbon dioxide in abdomen	35	95
	Definition bile ducts	30	85
	Drain may be placed	10	75
	Definition of open surgery	10	75
	Surgical removal of gallstones	10	10
	ERCP for retained stones	20	5
	Explore bile ducts	0	5
	Stent for leak	10	0
	Antibiotics before surgery	10	0
	Robot may be used	5	0
Patient experience	Same day or overnight	90	0
	Pain/discomfort	40	0
	No driving	35	0
	No lifting for 3–6wk	35	0
	Open requires longer stay	25	0
	2-wk recovery period	25	0
	4–6-wk recovery period	15	0

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Information type	Information item	Information discussed (%)	Information documented (%)
	Resume normal diet	15	0
	Clear liquid diet	10	0
	Shower 24–48 h after surgery	10	0
	Avoid fatty foods while recovering	10	0
	Bloating	5	0
	Clinic visit 2 wk after surgery	5	0
	Diarrhea	5	0
	Normal movement resumed	5	0
Anatomy	Gallbladder definition	65	0
	Bile definition	60	0
	Stones block ducts	45	0
	Bile moves through ducts	35	0
	Gallstones definition	15	0
	If gallbladder is removed, liver compensates and makes sufficient bile for digestion	15	0
Herniorrhaphy *n* = 17			
Risks	Testicle/spermatic cord injury	70	85
	Recurrent hernia	55	85
	Wound infection	50	85
	Damage to nearby structures	35	85
	Hematoma	5	85
	Seroma	5	80
	Inguinodynia	80	55
	Injury to nerves	45	55
	Anesthetic problems	10	55
	Cardiovascular problems	10	55
	Femoral vein injury	5	55
	Pain/discomfort Reactions to meds	40	40
	Conversion to open surgery	5	10
	Air embolism	0	10
	Subcutaneous emphysema	0	10
	Mesh infection	70	0
	Minimal blood loss	65	0
	Recurrence more common in large hernias	25	0
	Stroke	10	0
	Bleeding post surgery	5	0
	Deep vein thrombosis	5	0
	Laparoscopic approach affects future prostate surgery	5	0
Benefits	Relief of bulge and/or symptoms	5	85
	Treats incarceration and reduces chance of future incarceration	10	35
	Laparoscopic allows bilateral repair	45	0
	Laparoscope produces quicker recovery	35	0

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Information type	Information item	Information discussed (%)	Information documented (%)
	Laparoscope produces less pain	10	0
	Minimal scarring with laparoscopic approach	5	0
	Fewer recurrences with lap	5	0
	Less risk of infection with lap	5	0
Alternatives	Observation	20	85
	Truss	10	85
	No treatment	20	35
	No medical treatment	5	0
	Reasons for open	5	0
Indications for procedure	Inguinal hernia	50	85
	Prevention of strangulated intestines	50	5
	Hernia pain	65	0
	Increasing size of hernia	25	0
	Work problems	20	0
	Other symptoms	5	0
Description of procedure	Mesh	80	85
	Surgical repair	40	85
	Bulge location	25	85
	Bulge is replaced	25	85
	Abdominal wall repaired	15	85
	Incisions sutured	5	80
	Bandage	0	80
	Fascia definition	0	55
	Laparoscope definition	10	40
	Surgeon will decide	0	35
	Scope (without definition)	15	30
	Laparoscope into incision	35	10
	Incisions allow instruments	35	10
	Instruments removed	0	10
	General anesthesia	45	0
	Posterior placement of mesh	20	0
	Anterior placement of mesh	20	0
	Dissecting balloon	10	0
	Bilateral open	10	0
	Mesh placement	5	0
	No risk of impotence	5	0
	Open for single hernia	5	0
	Lap for recurrent hernias	5	0
Patient experience	Same day surgery	60	0
	No lifting for 3–6wk	50	0
	No driving	45	0

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Information type	Information item	Information discussed (%)	Information documented (%)
	Same day or overnight	25	0
	Pain/discomfort	25	0
	2–8 wk recovery	25	0
	Walking/steps	25	0
	Exercise after healing	20	0
	Attendant for 24 h	10	0
	Overnight stay is possible	10	0
	Difficulty urinating	10	0
	1 wk recovery with lap	5	0
	3 wk recovery with lap	5	0
	Flying a plane	5	0
	Ice	5	0
	No sexual impairment	5	0
Anatomy	Weakness near testicles	40	0
	Direct *versus* indirect	5	0

This table demonstrates the full coding framework developed by the coding team. It details every information item either discussed or documented, categorized according to content. The prevalence of individual information items (shown as percent) was calculated by totaling the number of documents and the number of discussions in which the information item was present and dividing by the total number of patient–provider interactions for each surgery type (e.g., 20 cholecystectomy and 17 herniorrhaphy). Within each category of information, items are sorted first by the prevalence on the iMed documents and then by prevalence in the discussions.

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Table 3

Comparing the information discussed to the information documented.

Information type	iMed items documented*		iMed items discussed†		Additional items discussed‡		Total items discussed§	
	Median	Range	Median	Range	Median	Range	Median	Range
Cholecystectomy (n = 20)								
Procedural information								
Risks	18	16–20	6	0–11	1	0–3	7	1–14
Benefits	3	3	0	0–3	1	0–3	1	0–6
Alternatives	3	1–3	1	0–3	1.5	0–4	2	0–6
Indications for procedure	6	2–6	2	0–5	1	0–3	3	0–7
Description of procedure	14	11–15	5	0–9	0	0–3	6	0–12
Subtotal	44	36–44	15	1–25	5	0–12	22	2–37
Additional information								
Patient experience					3	0–9	3	0–9
Anatomy					2	0–6	2	0–6
Total	44	36–44	15	1–25	10.5	1–20	27.5	2–45
Herniorrhaphy (n = 17)								
Procedural information								
Risks	11	8–16	4	2–6	3	0–5	7	3–10
Benefits	1	1–2	0	0–1	1	0–4	1	0–4
Alternatives	2	2–3	0	0–2	0	0–2	0	0–3
Indications for procedure	1	1–2	1	0–2	2	0–4	3	0–4
Description of procedure	8	8–13	2	1–5	1	0–6	5	1–8
Subtotal	23	23–36	8	5–12	8	1–16	17	9–23
Additional information								
Patient experience					4	0–8	4	0–8
Anatomy					1	0–1	1	0–1
Total	23	23–36	8	5–12	13	2–24	20	10–30

The number of items in each information category was calculated at the level of the patient–provider dyad, reporting medians and ranges across all dyads.

*Items found on the iMed documents.

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[†]The subset of items from column[*] that were actually discussed.

[‡]Items added during the discussion but not found on the iMed document.

[§]The total number of items discussed (e.g., column[†] and column[‡]).

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Table 4

Proportion of discussions where at least one item of each kind was ever discussed.

Information category	Cholecystectomy (*n* = 20)	Herniorrhaphy (*n* = 17)
Procedural information, %		
Risks	100	100
Benefits	60	65
Alternatives	90	41
Indications for procedure	85	94
Description of procedure	90	100
Additional information, %		
Patient experience	95	94
Anatomy	70	53
Questions, %		
Do you have any questions?	80	94
Can you “repeat back” what you’ve heard us discuss?	20	53

Proportions were calculated for each information category by dividing the number of discussions with at least one information item in that category by the total number of discussions (20 or 17).