Lessons Learned from Dutch Medical Disciplinary Law Regarding Aortic Aneurysm and Dissection Care

Britt W.C.M. Warmerdam, Joost R. van der Vorst, Jan van Schaik, and Jaap F. Hamming,, Leiden, The Netherlands

Background: The current study is an explanatory analysis of Dutch disciplinary law regarding aortic aneurysm and aortic dissection care. We aim to give insight in the way disciplinary judges rule on quality of care and to extract the lessons to be learned.
Methods: The online open-access governmental database, which includes all disciplinary rulings since 2010, was searched using search terms related to aortic aneurysm and dissection care. First, abstracts were screened for relevance. Thereafter, the full text of all remaining cases was read. Cases related to the diagnosis, treatment, or the postoperative phase of an aortic aneurysm or aortic dissection were included. Characteristics were registered and analyzed for quantitative assessment. Each case was summarized and coded for qualitative analysis.
Results: Forty-eight first-instance cases were included, of which 19 (40%) were founded. Reprimands ($n = 9$) and warnings ($n = 7$) were the prevailing measures. Seven out of 8 appeal cases filed by plaintiffs were unfounded. Six out of 9 appeals filed by defendants were adjudged and led to a less severe measure. Most cases concerned the subject of 'wrong treatment/wrong diagnosis' (75%). Whether not recognizing an aneurysm or dissection led to disciplinary culpability depended on case-specific circumstances, and much importance was attached to adequate documentation. In many complaints, an element of inadequate communication was recognized.
Conclusions: Patient-involvement, clear communication, and implementing changes after a mistake could increase patient satisfaction, avert complaints, and prevent time-consuming trials. Maintaining adequate documentation and having knowledge on the analytical framework of the court is beneficial when confronted with a complaint.

INTRODUCTION

In general, health-care workers aim to provide the best care for their patients. Unfortunately, medical errors and patient-dissatisfaction do occur, which can be very much unsettling for all parties involved. In the Netherlands, the medical-legal system provides multiple pathways for patients to raise their concerns (Fig. 1). A somewhat unique form of legislation is medical disciplinary law. Patients and other 'parties with a direct interest' can file a complaint against health-care professionals with one of 3 regional disciplinary courts, consisting of medical professionals and legal members.[1] The goal is to guard and improve the quality of individual health-care and to protect patients against incompetence or carelessness.[2] Although this is an admirable objective, research has shown that procedures are

Author JFH, in his capacity as a vascular surgeon, is a professional member of the Regional Medical Disciplinary Court of Amsterdam.

Department of Vascular Surgery, Leiden University Medical Centre, Leiden, The Netherlands.

Correspondence to: Britt W.C.M. Warmerdam, Department of Vascular Surgery, Leiden University Medical Centre, Albinusdreef 2, 2300 Leiden, The Netherlands

Correspondence to: after publication: Prof. dr. Jaap F. Hamming, Department of Vascular Surgery, Leiden University Medical Centre, Albinusdreef 2, 2300 Leiden, The Netherlands; E-mails: W.C.M.Warmerdam@lumc.nl or J.F.Hamming@lumc.nl

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often experienced by health-care workers as to incriminate and can lead to stress, insecurity, and elements of defensive medicine.[3–6] Although disciplinary law defers among countries, international research has shown comparable results. For example, malpractice lawsuits have been associated with burn-out among vascular surgeons.[7–14]

These negative consequences might partially be due to little knowledge of disciplinary rulings among medical professionals, prior to receiving a complaint.[5,11] Understandably, most doctors prefer to stay far away from disciplinary law. However, disciplinary cases provide valuable information, as they give insight in the patients' experience and the analytical framework of the courts regarding quality of care. In this review, disciplinary law on aortic aneurysm and dissection care will be discussed, aligning with the increasing thematic approach of subspecialties within vascular surgery. Previous research has focused on malpractice claims and litigation regarding vascular surgery in the United Stated and United Kingdom. The available evidence in these studies did not provide the opportunity to perform a qualitative in-depth analysis of the incidents leading to these claims.[12–14] The Dutch registry does provide this information. We aim to extract the lessons to be learned, in order to contribute to the ongoing search for optimal patient care in this part of vascular surgery. However, we believe that the principles underlying these cases can be of value when caring for patients in other fields of medicine as well.

METHODS

Set-Up

The current study is an explanatory analysis of Dutch disciplinary law regarding aortic aneurysm and aortic dissection care. Since 2010, all disciplinary rulings are published in an online open-access governmental database.[15] This database was used for data collection. Since cases are anonymized and available to all, we did not seek approval from the Medical Ethics Committee of our institution, nor of parties involved in the disciplinary cases.

Context of Dutch Disciplinary Law

As mentioned in the introduction, 'parties with a direct interest' can file a complaint with one of the regional courts.[16] Apart from patients themselves, these can be patients' family members, friends, or partners. In addition, complaints can be filed by employers, colleagues, and the Dutch Health and Youth Care Inspectorate (IGJ). Complaints can only be filed against health-care workers of professions registered under the Healthcare Professionals Act (BIG Act), including but not limited to all doctors (including residents), dentists, pharmacists, and nurses. Registration is mandatory for these professions. Complaints can be filed up to 10 years after the accused act.

First, the accused is notified and asked to reply. If a complaint is manifestly unfounded or clearly carries insufficient weight, the case can be ruled unfounded within council chambers. Otherwise, a public hearing will be held with the full disciplinary committee, consisting of 3 medical professionals (preferably of the same profession as the defendant) and 2 legal specialists. Both parties are invited to appear. Assistance by a lawyer or legal expert is possible, but not mandatory. The regional court rules within 2 months. Disciplinary assessment does not aim to investigate whether the accused could have done better, but to determine whether the defendant stayed within the boundaries of reasonable competence.

Nonoccupation-restrictive measures are a warning, reprimand, and fine (maximum of 4,500 euros). The more severe occupation-restrictive measures consist of a (provisory) suspension during a maximum of 1 year, withdrawal of the right to provide certain treatment or imposing special conditions to continue one's profession, and permanent revocation of a professional's medical license. All occupation-restrictive measures are published in the public register for health-care professions. In the case of a reprimand or fine, publication is a discretionary power of the court. Warnings are never published. Within 6 weeks after the ruling, both parties can appeal to the Central Medical Disciplinary Court. Its decision is final.

Search

Our search was performed in August 2023, and therefore included cases published since the founding of the database in 2010, until August 2023. The online database can only be searched using individual search terms. We consecutively entered terms related to aneurysm care, including the Dutch translations of 'aneurysm', 'vascular surgeon', 'vascular surgery', 'endovascular aortic repair', and 'aorta'. An additional search using the Dutch translation of 'dissection' was added. Cases regarding veterinarians or lawyers, which are published in the same database, were excluded, and duplicates were removed. First, abstracts were screened for

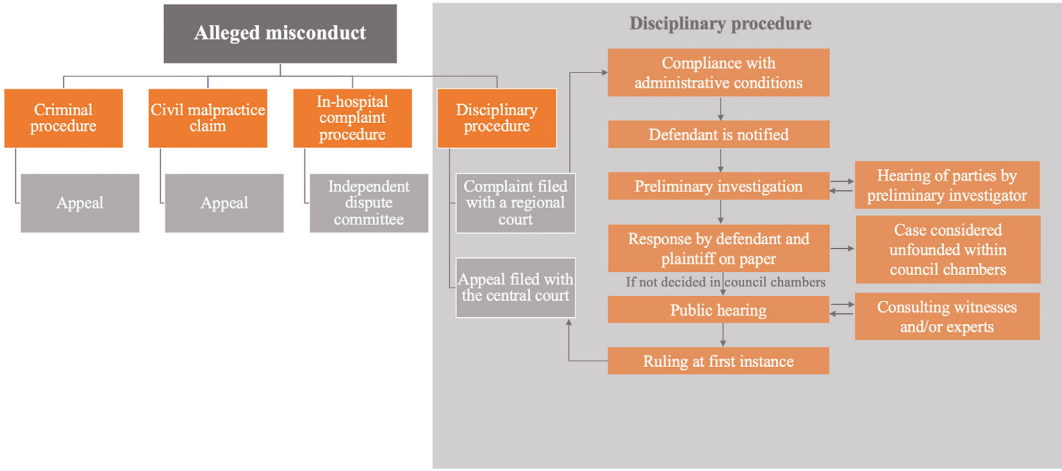

Fig. 1. An overview of possibilities to file a complaint following alleged misconduct by health-care workers in the Netherlands.

relevance regarding aortic aneurysm and dissection care. If no abstract was available, the full text was screened. After this initial assessment, the full text of all remaining cases was read. Cases sufficiently related to the diagnosis, treatment, or the postoperative phase of an aortic aneurysm or aortic dissection was included. If, for example, an aortic aneurysm was merely mentioned in the patient's medical history, without the case being related to this pathology, the verdict was not included. The same applied to cases regarding intracranial aneurysms or carotid dissections.

Statistics and Data Assessment

For each included verdict, the following characteristics were registered: profession of the defendant, position of the plaintiff, whether a lawyer/legal expert was consulted, time between the accused act and the filing and ruling of the case, the decision, and whether appeal was filed. In addition, the topic was registered. Cases are classified by the courts in fixed topics, for example: 'providing no or insufficient care', 'unacceptable behavior', 'wrong treatment/wrong diagnosis', 'insufficient documentation', and 'violating professional secrecy'. For cases classified as 'wrong treatment/wrong diagnosis', the authors additionally examined whether it was mainly a complaint of wrong treatment or of a wrong/missed diagnosis. This data was analyzed for the quantitative results, using 'Descriptives', 'Frequencies', and 'Explore' in SPSS Statistics version 27. Normally distributed data was expressed as mean with the standard deviation. Median with the interquartile range (Q1-Q3) was used in case of skewed distribution. In addition, each case was read in-depth for qualitative analysis, in order to extract learning points. A summary of each case was made, including the filed complaints and the essence of the ruling (Supplementary Table S1). These summaries were coded for relevant considerations leading to the court's decision. Similar codes were bundled into themes, and themes were divided into categories.[17,18]

RESULTS

Quantitative Results

General numbers. Each year, the disciplinary courts publish their figures. Between 2013 and 2022, 14.657 cases were handled by the regional disciplinary courts. In addition, 4472 decisions in appeal were made. In the last few years, the number of cases per year has shown a decreasing trend with currently, on average, a thousand complaints per year being filed at first instance. In about 65%, the defendant is a doctor.[19] Surgeons, psychiatrists, and urologists top the list of most often accused specialties.[11] In 16% of first-instance complaints, the case is considered founded. If a measure is imposed, it is most often a warning (50%), followed by a reprimand (25%), (provisional) suspension (10%), and revocation of a medical license (1.5%). In

some cases (13%), the complaint is considered founded, but no measure is imposed. In the past few years, no fines were issued.[19,20]

Search and inclusion. Figure 2 depicts an inclusion flow-chart. Our search regarding aortic aneurysm care yielded 542 cases in total. After removing duplicates, 339 cases remained for abstract screening, which resulted in 105 cases seemingly related to aneurysm or dissection care and eligible for full-text screening. A search using the Dutch term for 'dissection' yielded 77 results. After removing duplicates and abstract screening, 2 cases remained. In total, 107 full-text verdicts were examined in the second stage of inclusion by full-text evaluation. This resulted in 48 first-instance cases and 17 related appeal cases being included, which regarded the diagnosis, treatment, and/or the postoperative phase of an aortic aneurysm or aortic dissection. Figure 3 shows the distribution of verdicts per year from 2010-August 2023.

First instance ruling. Table I shows the descriptives of the 48 cases at first instance. These cases were filed by 30 separate plaintiffs. Eleven plaintiffs filed complaints against multiple health-care workers (ranging from 2 to 4) regarding the same or related events. Most cases concerned the subject of 'wrong treatment/wrong diagnosis' (75%), of which 67% were accusations of a wrong (or missed) diagnosis. In 19%, the complaint concerned 'providing no or insufficient care'. Defendants were most often surgeons (25%), family doctors (23%), internal medicine doctors (13%), or residents (15%). Plaintiffs were most often the child (ren) or partner of a patient that was treated by the defendant (33%). In 17%, the case was filed by the patient themselves. Almost all defendants were assisted by a lawyer (92%), compared to 23% of plaintiffs.

The median time between the accused act and filing of the complaint was just over a year; 387 days (IQR: 161−948). Median time between filing of the case and ruling by de court was 312 days (IQR: 234−363). In the majority of cases (60%), the complaint was ruled unfounded. In 9 instances (19%), the defendant received a reprimand, and in 7 cases (15%) a warning was issued. In one instance, defendant was denied the authority to ever perform surgery again.

Appeal. Appeal was filed in 17 out of 48 cases (35%).[21] Descriptives can be found in Table II. In 7 out of 8 cases filed by plaintiffs, the appeal was unfounded. In one case, a warning was issued, whereas the case was considered unfounded at first instance. In 6 out of 9 cases filed by defendants, appeal was adjudged. These decisions led to revocation of a reprimand ($n = 3$), conversion of a reprimand into a warning ($n = 2$), and changing a nonprovisional suspension into a provisional suspension ($n = 1$).

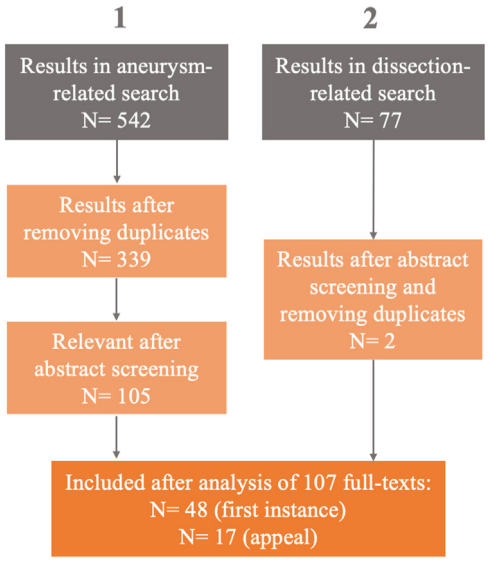

Fig. 2. Inclusion flow-chart.

Qualitative Results

All cases were examined for potential considerations leading to the court's decision. Given the fact that each case can serve as jurisprudence in following verdicts, the decision in a single case can be of value. Codes ($n = 72$) were bundled into 17 themes, which were divided into 3 categories. This qualitative analysis is displayed in Table III. Summaries of all cases, which were used for coding, are included in the Supplementary Table S1.

Considerations regarding diagnosis, treatment, and patient care. The courts were unanimous in their consideration that missing a diagnosis in itself does not necessarily lead to disciplinary culpability. In each case, the court examined whether presented symptoms should have raised the suspicion of a (symptomatic) aortic aneurysm or dissection, which only appeared to be required if symptoms were characteristic (Case 2018/504, 138/2016), or if other possible diagnoses were ruled out and symptoms were not yet explained (Case 021/2015, 119/2009, G2013/05). According to the courts, characteristic symptoms of aortic dissection were a nonexcitable 'tearing' pain high in the chest, extending to the back, sometimes accompanied by sweating, nausea and/or vomiting, and disparity between interarm blood pressure (Case 021/2015, 118/2009, 2015-324a, 09,168). The rareness of the diagnosis was taken into account (Case 2016-214a, G2013/05). The courts emphasized that once an aneurysm or

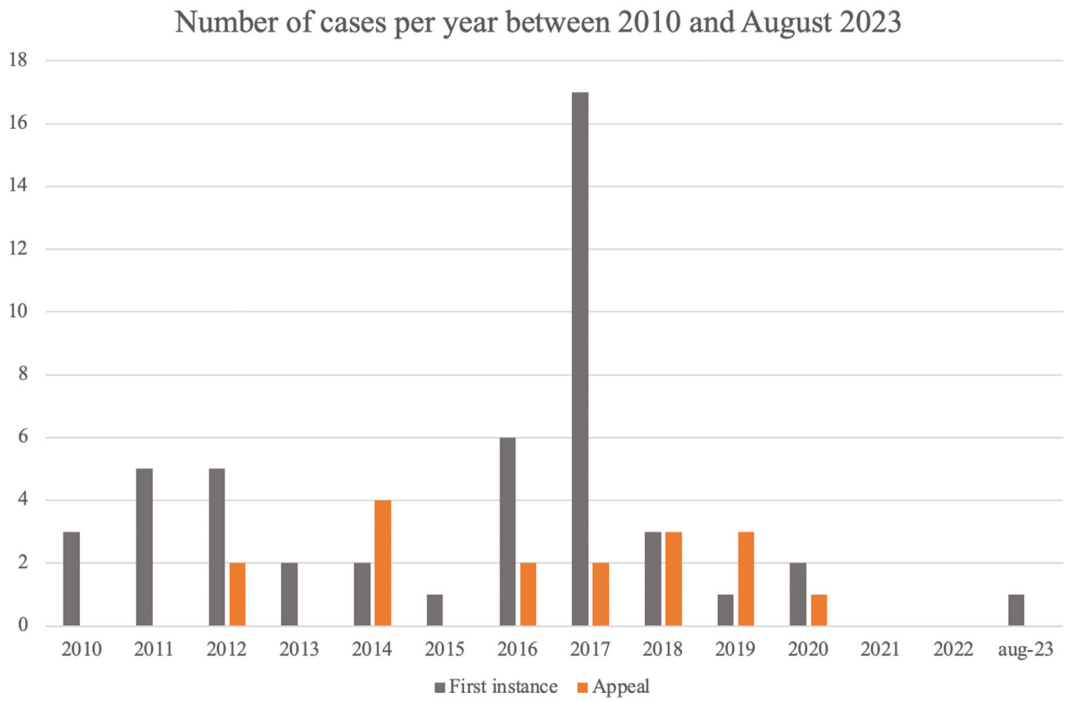

Fig. 3. The number of cases per year between 2010 and August 2023.

dissection is considered likely, immediate radiologic imaging should be performed (Case 2016/034, 2013−104: '*(…) the doctor (…) should have ordered an ultrasound that same evening/night to exclude an aneurysm.*').

If something was not written down in the patient's file, the courts assumed that it did not take place. This led the court in 2 possible directions. In some cases, missing information transferred the burden of proof to the defendant, who, according to the court, insufficiently documented the case. This was the court's reasoning if something that should have been performed (e.g., physical examination or reaching informed consent) was not documented (Case 11112a, 09,168: '*Given the obligation to document the results of [an interarm blood pressure test] (…) and the fact that [documentation] did not take place (…), the court has to assume that this exam was not performed.*'). In other cases of missing information, the court decided that it could therefore not be established whether defendant acted unjust. This was the court's reasoning if something that should not have happened (e.g., improper behavior, acting unpleasant) did not become apparent from the available documentation (Case 056/2011, 057/2011: '*Neither from the documentation, nor from what was discussed during trial, did it become apparent that defendant made improper comments against the patient or his family.*').

In many cases, an accusation of inadequate communication played a part in the complaint (Case 307/2020, 2018/504, 181/2017, 263/2016, 16,164, all other complaints depicted in bold in the Supplementary Table S1), although these complaints did not directly lead to the measures being imposed (Case 118/2009: '*The court identifies the remark [that the patient must be an important man] as a bit unlucky (…), but it does not justify any disciplinary action.*').

Considerations regarding collegiate responsibility. When working with inexperienced residents, main culpability was assigned to the supervising physician (Case 057/2011, 056/2011, 180/2017). Doubting the decision of a supervisor could only be expected from experienced residents (Case 2016/307: '*Defendant, as a resident, was not very experienced and did not have to doubt her supervisor's decision.*'). However, this did not exclude a resident from culpability when acting independently (Case 2017/030).

Another element of collegiate involvement that the courts regarded as important, was that concerns of a referring doctor had to be taken seriously (Case 2016/018, 2017/030: '*(…) defendant should have understood that the [referring] general practitioner was worried. There was a feeling that something was off, which defendant should have investigated further.*'). In addition, close contact between involved colleagues was necessary, especially in acute situations (Case

Table I. Descriptives of cases at first instance

Variable	Cases at first instance
Number of cases	48
Time between accused act and ruling (days)	
Median	703
IQR (Q1-Q3)	469−1289
Minimum, maximum	244, 2879
Time between accused act and filing (days)	
Median	387
IQR (Q1-Q3)	161−948
Minimum, maximum	45−2608
Time between filing and ruling (days)	
Median	312
IQR (Q1-Q3)	234−362
Minimum, maximum	85, 700
Plaintiff ($n = 30$)	
Child (ren) of patient	10
Partner of patient	10
Patient	5
Inspection	2
Patient and partner	1
Partner and child	1
Parents and sibling	1
Defendant	
Surgeon	12
Family doctor	11
Resident (in training and not in training)	7
Internal medicine doctor	6
Cardiologist	5
Radiologist	3
Emergency doctor	2
Anesthesiologist	1
Nurse	1
Subject	
Wrong treatment/wrong diagnosis	36
Of which wrong diagnosis	*24*
Providing no or insufficient care	9
Providing insufficient information	1
Not showing up or being too late	1
Not referring a patient or referring too late	1
Decision	
Complaint unfounded	29
Of which manifestly unfounded	*2*
Reprimand	9
Warning	7
Complaint founded, no measure	1
(Nonprovisional) suspension	1
Partial revocation/special conditions to continue profession	1

IQR, interquartile range; Q, quartile.

10192b, 2016/306). Being the primary care taker did not come with sole responsibility for the patient's care, nor did it lead to disciplinary responsibility regarding actions that were taken by other consulted health-care professionals (Case 2016-214c, 2016/033, 10,115, G2013/06, 2011-069a: '*The responsibility of the primary care taker is limited in the fact that he does not carry responsibility for actions taken by other specialists (…) outside the area of expertise of the primary care taker.*').

Circumstances taken into account. In deciding whether a complaint was founded and, if so, which measure should be imposed, several circumstances were taken into account by the courts. Along with being a first-time offender (Case 2016/018, 263/2016, 2016/034, 012/2015, G2011/22), the way defendants acted after receiving a complaint and during trial was important. Being open to feedback, acknowledging mistakes, showing empathy, and implementing changes were appreciated (Case 139/2016, 2016/306, 10192a, 2016/018: '*In deciding which measure should be imposed, it should (…) be taken into account that (…) defendant offered his regrets and apologized multiple times (…). Defendant clearly took lessons from this tragic event.*'). Although in the case of serious misconduct, such a demeanor could no longer lead to a less severe measure (Case 2013/227). In addition, a high workload did not excuse defendants of providing optimal care (Case 10192a, 10192b: '*Defendant cannot invoke the fact that he was busy caring for other patients with a life-threatening condition (…)*').

DISCUSSION

Quantitative Analysis

Sixty-five disciplinary cases regarding the diagnosis, treatment, and care of aortic aneurysms and dissections were initiated by 30 separate plaintiffs. The majority of cases involved a complaint of not recognizing an aortic aneurysm or aortic dissection, which led to complications or death. Misdiagnosis or treatment delay has previously been proven to be one of the most common reasons for litigation claims regarding vascular surgery in the United Kingdom and the United States.[12−14] In the Netherlands, there is no national screening program for aortic aneurysms, like there exists in Sweden[22] and the United Kingdom,[23] and is recommended in the United States.[24] An aneurysm is therefore usually diagnosed as an incidental finding when

Table II. IDescriptives of appeal case

Variable	Appeal cases
Number of cases	17
Filed by defendant	*9*
Filed by plaintiff	*8*
Time between accused act and ruling (days)	
Median	1409
IQR (Q1-Q3)	947−1750
Minimum, maximum	708, 3548
Time between first instance ruling and ruling in appeal (days)	
Median	384
IQR (Q1-Q3)	284−476
Minimum, maximum	130, 786
Plaintiff ($n = 16$)	
Partner of patient	7
Child (ren) of patient	3
Patient	3
Inspection	2
Partner and child	1
Defendant	
Surgeon	6
Internal medicine doctor	3
Emergency doctor	2
Family doctor	2
Resident (in training and not in training)	2
Cardiologist	1
Radiologist	1
Subject	
Wrong treatment/wrong diagnosis	15
Of which wrong diagnosis	*5*
Providing no or insufficient care	2
Decision	
Appeal of plaintiff rejected; decision remains	7
Appeal plaintiff founded; decision changed	1
(Unfounded changed to founded with warning)	
Appeal defendant founded; decision changed	6
Unfounded, reprimand revoked	*3*
Reprimand changed to warning	*2*
Nonprovisional suspension changed to provisional	*1*
Appeal defendant rejected, decision remains	2
Appeal revoked by defendant	1

IQR, interquartile range; Q, quartile.

performing imaging for other purposes, or once symptoms occur due to (imminent) rupture. In our country, a general practitioner is usually the first point of contact for patients. This clarifies the number of family doctors among defendants.

Our findings are in accordance with the decreasing number of complaints that are being filed each year. However, a substantially higher percentage of complaints was founded (40%), compared to the general data (16%). It is difficult to compare our results with other health-care topics, in order to differentiate the extent of aortic aneurysm and dissection care among disciplinary cases. Previous research has mainly focused on the number of verdicts per profession, instead of per subject of care.[25−28] When looking at the total number of complaints that were handled between 2013 and 2022 ($n = 14.657$), cases regarding aneurysm and dissection care seem to be a modest contributor. Research into vascular surgery liability claims in Spain draws the same conclusion, although a shift toward an increase in legal cases regarding endovascular care has been seen in the Unites States.[13,29] However, whether we characterize the number of complaints as small or large, they are best avoided given the negative effects on plaintiffs as well as defendants. It is therefore important to recognize the possible pitfalls leading to complaints and measures, which are presented by our qualitative analysis below.

Qualitative Analysis

Considerations regarding diagnosis, treatment, and patient care. The courts attached great importance to the obligation of adequate documentation.[30] Overall, information noted in the patient's file is considered true, unless it is plausible that it contains an incorrect delineation of the truth. It can therefore be difficult for patients to detest something that is noted in their file or to prove something which is not described in the doctor's documentation. This is not because the courts attach less credibility to plaintiffs compared to defendants, but is understandable given the fact that patient files are often the only source of information available to the courts. This explains why the courts strongly condemn inadequate documentation by health-care professionals.

In many cases, an accusation of inadequate patient communication played a part in the complaint. While in our results these complaints did not directly lead to the measures being imposed, seemingly due to evidential difficulties, it does indicate that patients often experience a lack of effort on this front.[5] Although this might not always lead to disciplinary culpability, it is very much undesirable. Clear communication, patient-involvement in (the reasoning behind) decision-making, and providing sufficient information could increase patient

Table III. IIAn overview of considerations of the courts, in order of the number of relevant cases per consideration

Lessons learned	Relevant cases
Considerations regarding diagnosis, treatment, and patient care	
In many cases, an accusation of inadequate communication played a part in the plaintiff's complaint, but miscommunication does not always lead to culpability.	Case 317/2017: Plaintiff requested a second opinion. She was invited to discuss her wishes and was told to arrange a second opinion herself. Although this approach did not lead to disciplinary culpability, more attention could have been paid to communication. Case 118/2009: A remark made by defendant was described by the court as 'unlucky', but did not lead to disciplinary culpability. Case 16,164: Although it would have been decent if defendant contacted patient after hospital admission, not doing so does not lead to disciplinary culpability. Cases: 307/2020, 2018/504, 181/2017, 263/2016, 2016/018, 2016/034, 2016-214c, 012/2015, 11112a, 11112b, Z2022/4413, 057/2011, 056/2011, 165/2015, 2013−104
Missing the diagnosis of an aortic aneurysm or dissection does not necessarily lead to disciplinary culpability.	Case 138/2016 and Case 2016/139: Defendants did not recognize that patient suffered from an abdominal aneurysm. Patient died due to aneurysm rupture. Given the unconventional symptoms (hematuria, fever, stomach pain, diarrhea, involuntary leg movements), it is not culpable that this diagnosis was missed. Cases: 2016/034, 021/2015, 10,115, 118/2009, 119/2009, 2015-324a, 2015-324b, 2015-324c, 2015-324d, G2013/05, 057/2011, 2018/504
Maintaining adequate administration and documentation is important and facilitates truth-finding by the courts.	Case 012/2015: The mere mentioning of an aneurysm in a discharge letter does not contain a clear assignment to a general practitioner to arrange necessary follow-up. Case 11112a: Defendant did not note whether preoperative consultation took place. The burden of proof therefore lied with defendant to show that this conversation took place, which he was not able to. Case 09,168: In the absence of adequate notations in the patient's file, it is plausible that defendant did not perform a complete physical examination. Cases: 263/2016, 2018/504, 2011-069a, 307/2020
When a (symptomatic) aortic aneurysm or aortic dissection is considered likely, imaging should be performed immediately.	Case 2013−104: Patient was admitted to the emergency department with stomach pain. Defendant decided that the patient should be admitted, with a differential diagnosis of an aneurysm or obstipation. The next day, an ultrasound was performed, which showed an AAA of 8 cm, which was confirmed by a CT-scan a day later. Patient (successfully) underwent emergency surgery. A warning was issued; imaging should have been performed immediately, given the fact that an aneurysm was suspected. Case 119/2009: Given the presented symptoms, it was understandable that acute coronary syndrome (ACS) was considered more likely than the eventual diagnosis of aortic dissection. It was therefore understandable that a CT-scan was not performed immediately, but 19 hours after admission when ACS was ruled out. Case: 2016/036, 2016/034

(*Continued*)

Table III. Continued

Lessons learned	Relevant cases
The rareness of a disease makes it less culpable to not recognize it as a diagnosis.	Case 2016-214a: An internal medicine doctor was accused of missing the diagnosis of compression of the left main bronchus due to soft tissue swelling after TEVAR, causing dyspnea. On an initial CT-scan, this was not recognized. Especially given the rareness of this pathology, defendant could trust the radiologist in his/her initial diagnosis regarding the first CT-scan. Case G2013/05: A GP initially missed the diagnosis of an aortic dissection, by being too focused on possible symptoms of stress, and by not examining the patient after she calmed down. However, due to the rarity of the pathology and the nonspecific symptoms of the patient, the court did not impose a measure.
Guidelines and instructions for use need to be followed if applicable.	Case 17,258: Patient was treated for an aneurysm before the guideline's treatment threshold was reached. In addition, instructions for use regarding the stent were not followed. A reprimand was imposed. Case 181/2017
When confronted with a frail patient, questioning and physical examination should be even more thorough.	Case 16,164: A frail patient presented with hematuria. Defendant diagnosed a urinary tract infection. Later, an aortic aneurysm was diagnosed and surgery was performed. In appeal, a warning was issued; given the frailness of the patient, even more cautious care should have been provided, in order to come to the correct diagnosis.
Considerations regarding collegiate responsibility	
When working with inexperienced residents, disciplinary culpability mainly lies with the supervisor. While gaining experience, disciplinary culpability of a resident increases.	Case 180/2017: Given the experience of the resident (year 2 out of 6 years of training), according to accepted jurisprudence, main disciplinary culpability in such a complicated vascular surgery case lies with the supervising surgeon. Case 2016/307: A resident in training performed an ultrasound together with a supervising radiologist. An aortic dilation and iliac artery aneurysm were diagnosed. As agreed with her supervisor, the resident advised the GP to make an appointment with a vascular surgeon, instead of directly calling a vascular surgeon herself. That night, aneurysm rupture occurred and emergency surgery was necessary. Given the experience of the resident (first year), culpability mainly lies with the supervising radiologist, and it cannot be expected that defendant doubted the supervisor's decision to call the GP instead of a vascular surgeon. Case 056/2011: Given the inexperience of the resident (3 months), defendant should have examined the patient, presenting with acute symptoms, himself. Case 057/2011
The primary care taker is not necessarily responsible for the actions of other (consulted) practitioners involved.	Case 2011-069a: Patient developed back pain after a Crawford procedure. This was caused by spinal deterioration and a chronically infected aortic prothesis, for which patient was treated with medication by defendant. Defendant consulted a rehabilitation specialist, who prescribed a Hewitt brace, which patient wore for about 3 years, instead of the necessary 3 months. The court decided that defendant was not responsible regarding the actions of the rehabilitation specialist, although consulted by defendant. Cases: 2016/033, 10,115, G2013/06

Concerns of a referring doctor need to be taken seriously.	Case 2016/018: A patient was referred to the hospital by a GP because of heavy backpain. The GP suspected an aortic aneurysm. Defendant (emergency care specialist) diagnosed the pain as myalgia. Patient died a few days later. Aneurysm rupture was suspected to be the cause of death. At first instance, a reprimand was issued; defendant should have been more thorough in his examination, especially given the concern of the referring GP. In appeal, the measure was changed to a warning. Case 2017/030
Close contact between health-care workers involved is necessary, especially in acute situation with imminent danger for the patient.	Case 10192b: A radiologist diagnosed a type A dissection of the ascending aorta. At first instance, a reprimand was issued because the radiologist should have contacted the treating doctor directly, either in person or by phone, given the imminent danger for the patient. In appeal, the reprimand was revoked, because the radiologist was able to prove that direct contact indeed took place. Case 2016/306
Providing information within your own area of expertise is sufficient.	Case 2016-214c: It suited his role as an ICU-specialist to limit information provision to the reason for ICU-admission (dyspnea), and to not go outside his area of expertise by commenting on areas that should be covered by his colleagues (TEVAR complications).
Circumstances taken into account	
Presenting yourself open to feedback is appreciated by the courts and plays a role in deciding on the appropriate measure.	Case 2017/030: A resident decided, without contacting a supervisor, that a patient with a dilated aortic bifurcation and a large iliac aneurysm did not have to be seen the same day. Rupture occurred the next day, necessitating emergency surgery. A warning was issued. However, the court appreciated the fact that defendant presented himself open to feedback. Case 149/2014: Defendant showed serious malpractice when performing surgery on patients with a ruptured aortic aneurysm. The court prohibited defendant to perform any form of surgery again. The fact that defendant showed little understanding of his wrongdoing was frowned upon by the court. Case G2011/22: It was noted that defendant showed insufficient self-reflection and little sense of responsibility. Cases: 10192b, 10192a, 2016/306, 2016/018, 2016/034, 012/2015, 181/2017
Implemented improvements by defendants after receiving a complaint are taken into account when judging a case.	Case 139/2016: The court appreciated that the emergency GP-post altered their reporting system to improve adequate documentation. Case 2016/306: A radiologist diagnosed an aortic and iliac dilation. Given the size of the iliac aneurysm (51 mm), defendant should have directly contacted a vascular surgeon, instead of referring patient back to her GP. A warning was issued. However, the court took into account that defendant had altered the in-hospital guidelines following this case and was open to feedback. Case 2013/227: Defendant implemented improvements into his way of work. However, the misconduct was of such gravity that a less severe measure did not suffice. A reprimand was imposed. Cases: 2017/030, 2016/018, 2016/034, 181/2017
Being a 'first time offender' is of relevance and can lead to a less severe measure.	Cases: 263/2016, 2016/018, 2016/034, 012/2015, G2011/22

(*Continued*)

Table III. Continued

Lessons learned	Relevant cases
Expressing regret and offering an apology after a culpable act is appreciated.	Cases: 2016/018, 10192a
A high workload does not excuse defendants of providing optimal care.	Case 10192a: Defendant failed to read a CT-scan report the same day the scan was made, and once he read the report, he overlooked the notation of an aortic dissection twice. Patient was sent home and died. As defendant recognizes himself, a heavy workload does not justify this error. Case 10192b

AAA, abdominal aortic aneurysm; CT, computed tomography; GP, general practitioner; ICU, intensive care unit; TEVAR, thoracic endovascular aortic repair.

satisfaction, avert complaints, and prevent time-consuming trials.

Considerations regarding collegiate responsibility. Not only adequate patient communication played a part; communication between health-care workers was also a subject of discussion. Concerns of a referring doctor should be taken seriously, and close contact should be kept between professionals involved, especially in emergency cases. Special attention was paid to the relationship between a resident and his/her supervisor. Residents are always working under the supervision of a medical specialist, but the degree and type of supervision differs, depending on what type of action is performed and depending on the resident's experience. Usually, clear agreements are made regarding when a supervisor should be consulted. Residents are personally responsible for their own actions. In each individual case, the disciplinary court rules whether the resident stayed within the boundaries of competent professional practice, which can be expected of a resident with the same level of experience in the same situation. In practice, the courts usually hold a resident responsible if they went outside of their competence by not consulting their supervisor when guidance should have been asked (Case 2017/030). Once a supervisor is contacted and the resident and supervisor are working together, both parties can be held responsible. When working with inexperienced residents, main culpability and great responsibility is assigned to the supervising physician (Case 180/2017, 2016/307). This indicates that the ratio gently changes into fully shared responsibility while the resident's experience increases.

Circumstances taken into account. Being open to feedback, acknowledging mistakes, showing empathy, and implementing changes seemed to lead to less severe measures. Understandably though, it can be difficult to acknowledge a mistake if you, as a defendant, are convinced you did nothing wrong, especially if this is confirmed later on in appeal (Case 181/2017). Many doctors might recognize that a high workload can lead to suboptimal performance, but this did not excuse defendants from providing optimal care. Although this statement is understandable, it might encounter some critique given the high work load and staff shortage in many health-care systems.[31] However, this criticism might better be directed to the actual cause of

Table IV. A simplified overview of the organization of medical disciplinary law in other (Western) countries

Country	Responsible authority	(Main) plaintiffs	Measures	Goal	Specialties
Belgium	Provincial board of the professional association of doctors	Doctors and 'third parties'	Warning, censorship, reprimand, suspension, license revocation	To protect the collective interest and quality of health-care.	Reconciliation and mediation are more and more strived for.
France	Professional association's disciplinary board	Patients, medical professionals, public organizations	Warning, reprimand, (provisional) suspension of max. 3 years, license revocation	Upholding the necessary principles of honesty, competence, and morality.	Each procedure starts with an attempt to mediation by the mediation board.
Germany	Chamber of Physicians (under the professional code)	Patients, relatives	Warning, admonition, fine, statement of unworthiness	Monitoring the compliance to professional standards.	Other options are: procedures under federal law and out-of-court arbitration procedures on liability.
Greece	Disciplinary Boards of the regional medical chambers	Patients	Admonition, fine, suspension, withdrawal of license	To judge in cases of misconduct by members.	Disciplinary Boards consist of medical professionals.
Italy	Provincial associations	Patients or a magistrate, The Ministry of Health, and associations themselves	Warning, admonition, suspension up to 6 months, removal from the register (request of re-registration possible after 5 years of impeccable behavior)	To judge violations of the rules of good conduct and of the standards established in the Code of Ethics.	Hearings are not open to the public and legal representation is not possible for defendants.
Poland	Medical Courts (inquiry by the Screener for Professional Liability)	Patients, any other party that provides credible information pertaining to an offense	Admonition, reprimand, suspension up to 3 years, ban from practicing without the right to reregister	To assess whether defendants acted according to the code of ethics and regulations pertaining to the doctor's profession.	Members of the professional liability bodies are doctors chosen by medical conventions for a 4-year term.
Spain	Provincial college of the Doctor's Association	Patients, doctors, the courts	Agreement between parties through mediation, suspension, removal of registration, transferal to a court of law	To assess fitness to practice.	Many cases are handles in court by a court of law.

(*Continued*)

Table IV. Continued

Country	Responsible authority	(Main) plaintiffs	Measures	Goal	Specialties
The Netherlands	Disciplinary courts	Parties with a direct interest	Warning, reprimand, fine, (provisional) suspension, partial interdict, license revocation	To guard and improve the quality of individual health-care.	No monetary compensation possible within disciplinary law.
United Kingdom	General Medical Council, Fitness to Practice Panel	Patients, medical professionals	Warning, conditions on the doctor's registration, suspension, license revocation	Protecting patients and the wider public interest against unfit doctors.	A panel consists of professionals and laymen.
United States	State medical boards	General members of the public, physicians, hospitals/entities	Advisory letter, reprimand, fine, mandatory education/treatment, probation, license restrictions, license revocation	To protect medical consumers from potential harm.	Monetary compensation possible in civil procedures.

these organizational problems, rather than the patient complaints that arise subsequently.

Criticism

Several points of critique have been expressed against Dutch disciplinary law. One considers so-called futility cases; cases that lack importance and cause an unnecessary burden on defendants. This critique is based on the small percentage of complaints that are eventually founded.[5,32,33] Another matter is the negative effect that disciplinary procedures can have on defendants.[3–10] Two-thirds of 294 warned or reprimanded health-care professionals experienced the procedure as very or extremely burdensome. Furthermore, 1.9% of warned and 12.7% of reprimanded professionals left their profession due to the procedure, while 37.6% had considered to quit.[6] Another study questioning 210 disciplined or reprimanded doctors, showed that they felt criminalized and powerless.[3] In the cases included in the current study, detailed information regarding the personal impact of the complaints on the defendant, was not provided in the available data. Some feeling of guilt or increased cautiousness is not necessarily problematic, but psychological and work-related problems are unwanted consequences. After all, this goes against the quality improvement goal of disciplinary law.

On the other hand, research has shown that knowledge on disciplinary law among health-care workers leaves something to be desired. Many doctors are not aware of the way disciplinary law is organized, and 65% of Dutch doctors (almost) never reads a disciplinary case.[5,11] Verdicts provide valuable insight in the analytical framework of the courts. Knowledge on the trial process and seeking legal assistance could diminish the feeling of being powerless. If these feelings do occur, professional or peer-support could be helpful. Positive effects after receiving a disciplinary measure have also been reported, such as making more accurate notes, discussing possible improvements with colleagues, and earlier signaling of patient discomfort.[3] Reading disciplinary cases could elicit these positive effects, without having to undergo a procedure.

International Perspective

Several elements of Dutch disciplinary law can be recognized within the legal systems of other countries. The aim is often to ensure the quality and safety of care, and measures are comparable. The responsible authority differs (Table IV). In France, each disciplinary procedure starts with mediation. If this does not lead to a satisfactory outcome, the

case moves on to the disciplinary court. In some countries, there is no separate medical disciplinary law; complaints are either filed within the hospital or with the general judicial court (Estonia, Finland, Hungary). Quantitative data on disciplinary law is scarce, and due to divergent demographics, difficult to compare.[34–40] Within the European Union, an international warning system has been implemented, which obligates countries to report occupation-restrictive measures. The goal of this arrangement is to prevent doctors from continuing their profession abroad after severe misconduct (Directive 2013/55/EG and Directive 2005/36/EG).

Limitations

Complaints that are handled by in-hospital complaint officers or independent dispute committees are not published and were therefore not included in our review. Furthermore, we did not search for cases within criminal or civil law, as these systems are fundamentally different compared to disciplinary law. Although we included as much search terms as considered relevant until no new cases arose, it is possible that we missed search terms that would have led to the inclusion of more cases. However, given the fact that elements of saturation already occur, this would not necessarily have yielded additional insights. Most verdicts are concise, and the courts are clear in their considerations leading to a decision. However, it is possible that the qualitative assessment of our study is somewhat influenced by the authors' interpretation, and other readers might come to different conclusions.

CONCLUSION

Disciplinary complaints regarding aortic aneurysm and dissection care most often involved an accusation of a missed diagnosis. The cases taught us that characteristic symptoms need to be recognized, concerns of a referring doctor need to be taken seriously, and immediate radiologic imaging should be performed if these diagnoses are suspected. In addition, close contact between professionals could avert mistakes, and adequate documentation can support truth-finding during trial. As is true for many things; prevention is better than cure. Patient-involvement in all phases of treatment could avert patient dissatisfaction. But even while taking this in mind, complaints can arise. Knowledge on the trial process and the analytical framework of the court is therefore advised. Although our research focused on aortic aneurysm and dissection care, we believe that the qualitative findings can be of value in many health-care fields, due to the universality of the underlying principles.

CREDIT AUTHORSHIP CONTRIBUTION STATEMENT

Britt W.C.M. Warmerdam: Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **Joost R. van der Vorst:** Writing – original draft, Supervision, Formal analysis. **Jan van Schaik:** Writing – original draft, Supervision, Formal analysis. **Jaap F. Hamming:** Writing – review & editing, Supervision.

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