ANALYZING COMPLAINTS MADE BY THE PUBLIC TO THE ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO

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INTRODUCTION

The Royal College of Dental Surgeons of Ontario (RCDSO) is the regulatory body for dentists in Ontario. The College works in the public interest; it sets and enforces standards, and provides leadership and education to the dental profession to ensure that all patients receive a high standard of care.

Every year the RCDSO receives hundreds of complaints about dentists or dental care. The College is required by law to deal with every complaint. These complaints may come from patients, dental office staff, insurance companies, government agencies, other dental professionals, and any other member of the public. The RCDSO investigates each complaint and decides suitable outcomes.

The RCDSO is interested in gaining a deeper understanding of the content of these complaints, and whether there are any identifiable trends in the nature of complaints over time. This supports the RCDSO's risk-based approach to regulation with the aim to identify and mitigate risks that result in public complaints.

Public or patient complaints are often spontaneous, subjective, and complex (1–3), representing an expression of grievance or dispute within a health care setting (2). Complaints are valuable because they communicate a potential service failure in which expectations were not met (4). Patients evaluate the quality of dental care based on many factors, such as clinical outcomes, the interpersonal skills of providers, and accessibility (5,6). Thus, in general terms, complaints relate to the concepts of patient safety, quality of care and patient satisfaction.

The frequency of complaints and adverse health care events has been reported in many studies, but researchers note inadequate reporting about dentistry (7). A more in-depth and widespread understanding of these issues could influence the review of protocols, standards and education in dentistry.

This report presents the process and findings of a content analysis of complaints made by members of the public to the RCDSO from 2007 to 2017. This study is the first to conduct a content analysis of complaints made by members of the public to a Dental Regulatory Authority in Canada.

WHAT IS IN A COMPLAINT?

Complaints can be about many things, but, in general, they describe service failures or unmet expectations (4). Regardless of what is being complained about, expressing discontent and dispute in a health care setting is a subjective and emotive process that reflects on a complex situation (1–3). In some cases, making a complaint can be described as a "hostile act" and the subsequent response from the accused can "provoke a defensive response" (8). However, complaints are often made in an effort to obtain a positive response from the accused or reach a resolution. This may include seeking an apology, an investigation and disciplinary action, or changes in practice to avoid future wrongdoing (8).

THE IMPORTANCE OF COMPLAINTS

Complaints provide useful evaluation and feedback to all healthcare settings. Considering the complainant's perspective is especially important for gaining insight about expectations and areas requiring improvement. For example, patients and the public evaluate service quality based on a range factors relating to their care, such as clinical components, the interpersonal skills of providers, and environmental and management factors (5,6). Complaints can also reveal safety issues that require close attention. These can include clinical mistakes made by a health professional (active failures) and factors that contribute to such failures, such as policies, procedures and training (latent failures). Complaints can thus inform issues of patient safety, quality of care, and patient satisfaction.

Complaints may also describe grievances that are not resolved through a public hearing or include details not found in case reports (4). For quality assurance and public protection, it is important to consider the many ways that negative experiences occur (or may occur) in health care settings, to help develop new and better approaches and solutions.

PREVIOUS APPROACHES TO ANALYZING COMPLAINTS

Analysis of complaints in health care settings are primarily centred on patient concerns and patient safety incidents. Review methods for review include studying the complaints themselves, malpractice insurance claims, adverse events reported to incident reporting systems or regulators, reviewing patient records, and conducting surveys.

In dentistry, a review of studies investigating detectable safety incidents revealed that claims and complaints from various countries and dental disciplines share similar themes (9). These major themes relate to:

- treatment (errors, complications and poor skill);
- diagnostic and clinical assessments (faulty diagnosis, incomplete radiographs);
- medications (adverse drug events);
- practice processes (infection control, documentation);
- consent and confidentiality;
- practitioner behaviour; and
- the health of the practitioner (9).

Some studies tend to focus on the chief complaint or the most severe safety issue within a specialized area in dentistry. From a scientific and policy perspective, these reviews tend to reveal limited details about the analysis process, in terms of how analytical decisions were made, who was part of the analytical process, and how reliability in data collection, analysis and reporting was assessed and established.

While errors occur in all healthcare settings, identifying and classifying complaints play a key role in understanding patient and public expectations. Systematically reviewing complaints can help regulators and other stakeholders respond more effectively to the public's needs and reduce the number and seriousness of negative incidents and outcomes.

RESEARCH QUESTIONS

Two research questions guided this study:

1. What is the content of written complaints to the RCDSO from members of the public from 2007 to 2017?

2. What are the trends in the content of written complaints to the RCDSO from members of the public from 2007 to 2017?

METHODS

A multi-phase research study was developed to complete a content analysis of complaints made by members of the public to the RCDSO. Content analysis is defined as a systematic, replicable technique for organizing and tabulating text achieved through the process of 'coding', where a given unit of analysis is categorized as a 'code' and represented as quantitative data (10, 11).

A coding taxonomy provides a classification system to systematically code textual material (3). This is particularly useful for describing phenomena and examining trends and patterns (10, 11). By systematically interpreting and coding the written complaints made by the public to the RCDSO, the qualitative data contained within these texts was converted into quantitative data to yield the nature of these complaints.

SAMPLE

A total of 4,627 letters of complaint (LOC) were received by the RCDSO between the years 2007 and 2017 (minimum 210 in 2007, maximum 598 in 2017). The sample size required for each year of analysis was calculated to achieve a statistically representative sample with a 5% margin of error, totaling 2,199 LOC (Table 1).

Table 1. Sample description

Year	Total Number of Complaint Letters	Random Sample (5% margin of error)
2007	310	172
2008	364	188
2009	437	205
2010	366	188
2011	369	189
2012	380	192
2013	368	189
2014	446	207
2015	464	211
2016	525	223
2017	598	235
Total	**4,627**	**2,199**

The RCDSO selected the LOC from the sampling frame using a random number generator. All LOC were anonymized, leaving only the initials of the complainant, patient, provider(s) and staff. The sample was securely transferred from the RCDSO to the research team using encrypted USB drives. Electronic data was stored on the same kind of encrypted USB drives and in a secure server environment accessible only by the research team.

COMPLAINT DESCRIPTION

Although all letters of complaint were anonymous and there was no intent to gather demographic information, a coding scheme was created to gather descriptive information about the complaint that could provide more context about the issues raised. The information gathered included:

- who made the complaint (patient, family member, dental provider, third party, and other);
- who the complaint was about (e.g., dentist and/or staff);
- if a public program was used (such as Ontario Disability Support Program, Ontario Works, the Non-Insured Health Benefits Program, Healthy Smiles);
- if the complaint related to a clinical procedure;
- how the clinical issue was described (i.e., aesthetic or functional); and
- which clinical areas are related to the complaint (e.g., diagnostic, restorative, preventive, etc.).

DEVELOPING THE CODING TAXONOMY

Quality of care and accessibility frameworks (12, 13), and an existing taxonomy used to code patient complaints in the healthcare setting served as the foundation from which this study's taxonomy was built. The existing frameworks and taxonomies were adapted to more accurately reflect the nature of the dental care setting by reviewing dental literature about patient satisfaction, clinical malpractice and complaints, and by reviewing a subsample (n=30) of the LOC received from the RCDSO. This process included creating a separate list of complaint issues, or codes, based on the LOC themselves. Codes were then grouped by theme, compared to existing frameworks and integrated to again ensure applicability to the dental care setting.

The coding taxonomy underwent several cycles of testing and revision. Team members coded the same randomly selected LOC independently (n=5) and then compared results to asses coding consistency and to reveal areas

requiring more development. After several cycles of testing and refinement, the resultant taxonomy was used to analyze 100 LOC from 2016 to assess the feasibility of conducting a content analysis on the full sample of complaints (n=2,199). This pilot process demonstrated the value of a coding taxonomy to understand and analyze LOC. It also showed that it was feasible to conduct a content analysis of the full, statistically valid sample of complaints made to the RCDSO from 2007 to 2017.

The final taxonomy organizes the complaints into three domains (Clinical Care and Treatment; Management and Access; Relationships and Conduct), which are grouped into seven problem categories (Quality; Clinical Outcomes, Errors and Safety; Practice Processes; Practice Environment; Accessing Care; Patient Interaction and Interpersonal Skills; Rights), and 23 sub-categories. The final taxonomy of complaints is presented in Figure 1.

ANALYTICAL APPROACH

All letters of complaint were analyzed and managed using NVivo qualitative software (QSR International). The LOC sample was divided amongst six team members. A specific series of steps were taken to describe the complaint and identify and record the complaint issues.

After reading the LOC in its entirety, descriptive details and complaint codes were recorded. Sentences and phrases describing the complaint issue were highlighted and tagged to the appropriate complaint code in the taxonomy. Sometimes sentences and phrases were tagged with more than one complaint code. Despite how often a complaint code occurred in any given LOC, the complaint code was only counted once.

The research team met weekly for 22 weeks to assess inter-rater reliability (the extent to which research team members, or coders, agreed in their coding) and intra-rater reliability (the extent to which each team member, or coder, is consistent in their coding over time). Similar to the development phase of the taxonomy, each member independently coded the same LOC for comparison (n=110). Coding results were reviewed, tested and discussed to determine which codes would be included in reporting. Codes identified by four or more members were accepted, but codes identified by less than four members were reviewed during the meeting. The reviewed complaint codes were then included if the majority of coders agreed with its identification in the LOC after discussion. Complaint codes that did not reach a consensus were included at random using a random number generator.

Intra-rater reliability was assessed by re-coding 10 randomly selected letters from each coder's individual LOC sample Results were compared over two time points and percent agreement and Cohen's kappa were calculated using SPSS® statistical software.

Coding Rules
All LOC were coded taking the complainant's perspective, accepting the complaints as valid experiences free from judgement. This means that team members did not make inferences about the information presented. Coding was an independent process but assistance and consultation was sought for complex letters. It was determined that supplemental information (e.g. e-mail conversations, receipts, medical records, etc.) written only by the complainant were included in coding. Also, since dentists can perform a wide array of procedures, if a dentist was being complained about but there was no indication of a specialty, then they were considered as a "general dental practitioner"; if the LOC described a referral but it was also unclear if the dentist held a specialist degree, they were also considered as a "general dental practitioner."

Statistical Analyses
All data were compiled and aggregated to produce yearly totals. The complaint description items underwent descriptive analysis, reporting frequencies and proportions. The complaint code totals were calculated as a proportion (percentage) of the LOC sample (n=2,199) and also as a proportion of all complaint codes counted (n=17,752). These two ways of representing the complaint totals determined the calculation of sub-category, category and domain level totals, explained below in relation to: (i) the LOC sample; and (ii) the total number of complaint codes counted.

(i) *LOC sample:* The sub-category, category and domain level totals represent its presence within the LOC. These totals were obtained using the NVivo aggregate function that removed overlap for LOC involving more than one complaint code from the same sub-category, category and domain. As a proportion, the numerator was the sub-category, category or domain total and the denominator was the number of LOC.

(ii) *Complaint code totals:* These totals were calculated by adding the totals of its lower-level grouping in the taxonomy. For example, the complaint codes grouped under the same sub-category were added to produce that sub-category's total; the sub-categories grouped under the same category were added to produce that category's total; and the categories grouped under the same domain were added to produce that domain's total. As a proportion, the numerator was the sub-category, category and domain total and the denominator was the total number of complaint codes counted.
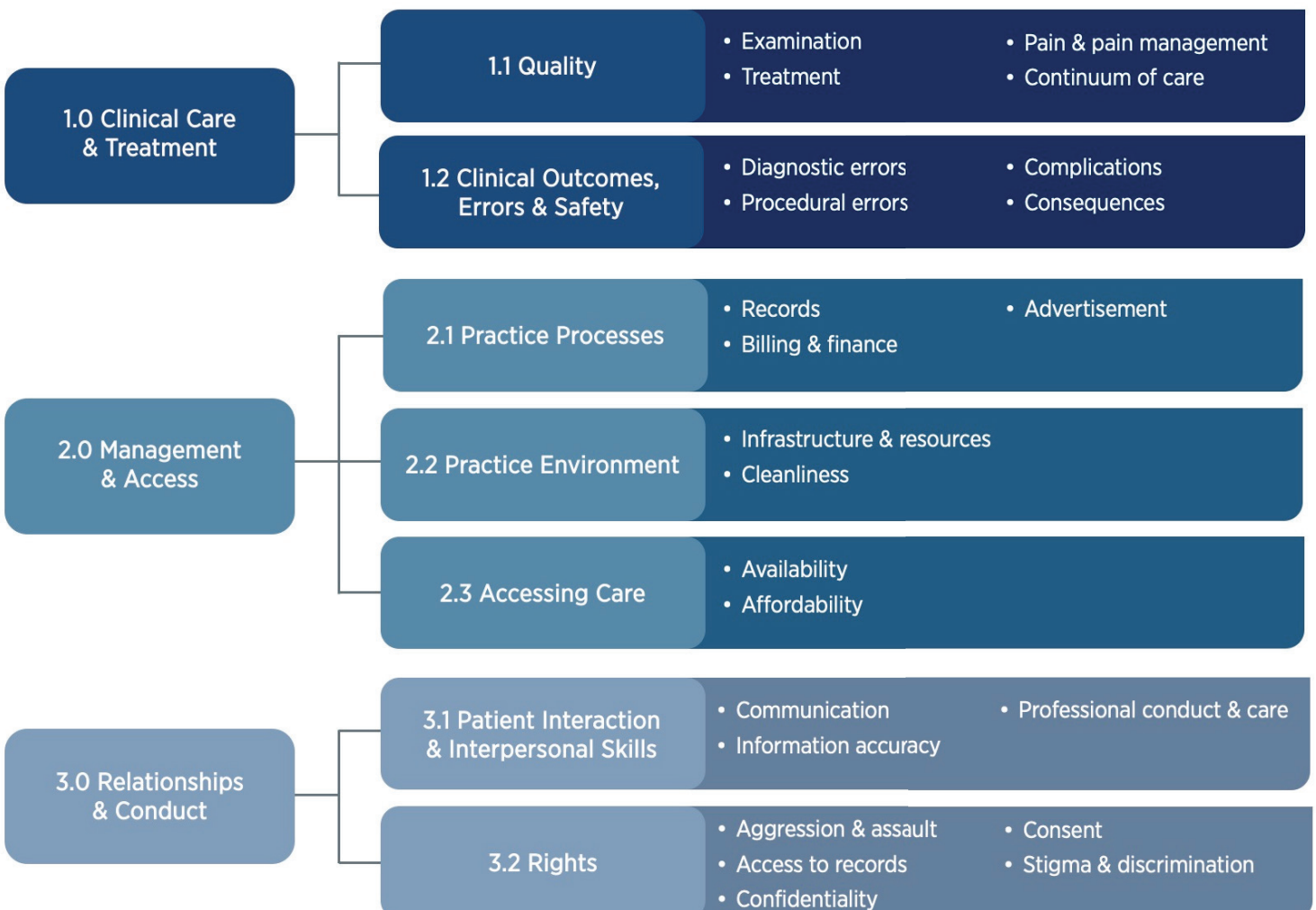
RESULTS

COMPLAINT TAXONOMY

The complaint taxonomy displayed in Figure 1 is a hierarchically organized classification of the complaint issues. It consists of three domains (Clinical Care and Treatment; Management and Access; Relationships and Conduct), seven problem categories (Quality; Clinical Outcomes, Errors and Safety; Practice Processes; Practice Environment; Accessing Care; Patient Interaction and Interpersonal Skills; Rights) and 23 sub-categories. The sub-categories include many complaint codes that identify the specific issues raised in a LOC.

The **Clinical Care and Treatment** (1.0) domain applies to issues about the quality and safety of dental services, including two main problem categories: 1.1 Quality and 1.2 Clinical Outcomes, Errors and Safety. Issues related to Quality (1.1) describe inadequate, inappropriate or unreliable dental services, including examinations, treatment, pain and pain management, and the continuum of care. Clinical Outcomes, Errors and Safety (1.2) detail diagnostic and procedural errors, complications, and consequences resulting from clinical errors.

The Management and Access (2.0) domain applies to issues related to the environment and clinic where

Figure 1. Complaint Taxonomy

- **1.0 Clinical Care & Treatment**
  - **1.1 Quality**
    - Examination
    - Treatment
    - Pain & pain management
    - Continuum of care
  - **1.2 Clinical Outcomes, Errors & Safety**
    - Diagnostic errors
    - Procedural errors
    - Complications
    - Consequences
- **2.0 Management & Access**
  - **2.1 Practice Processes**
    - Records
    - Billing & finance
    - Advertisement
  - **2.2 Practice Environment**
    - Infrastructure & resources
    - Cleanliness
  - **2.3 Accessing Care**
    - Availability
    - Affordability
- **3.0 Relationships & Conduct**
  - **3.1 Patient Interaction & Interpersonal Skills**
    - Communication
    - Information accuracy
    - Professional conduct & care
  - **3.2 Rights**
    - Aggression & assault
    - Access to records
    - Confidentiality
    - Consent
    - Stigma & discrimination

services were provided. This domain includes three problem categories: 2.1 Practice Processes, 2.2 Practice Environment, and 2.3 Accessing Care. Practice Process (2.1) issues include those about the maintenance and management of records and documents, billing and financial procedures, and advertising practices. Issues about the Practice Environment (2.2) describe those about the physical characteristics of the clinic (e.g. infrastructure and cleanliness) and its resources. Accessing Care (2.3) complaints includes problems related to availability, such as difficulties in scheduling appointments, contacting staff, and the affordability of services.

Lastly, the Relationships and Conduct (3.0) domain applies to issues related to the actions and behaviour of providers or any member of a clinic's staff towards a patient, employee or another person. This domain includes two problem categories: 3.1 Patient Interaction and Interpersonal Skills, and 3.2 Rights. Issues related to Patient Interaction and Interpersonal Skills (3.1) includes problems with communication, the accuracy of information, and professional conduct and care. Rights (3.2) describe any violation of rights by staff, including aggression and assault, appropriate access to records, confidentiality, consent, and stigma and discrimination.

DESCRIBING THE COMPLAINTS

The majority of individuals who made complaints to the RCDSO between 2007 and 2017 were the patients themselves (72.5%), followed by family members (20.0%) (see Table 2). Dental professionals included dentists, dental hygienists and dental assistants (2.5%). Insurers, government agencies and lawyers were classified as a third-party, and other complaints included friends, current or former employees that were not dental professionals, other health professionals (e.g., pharmacist) and other members of the public (4.3%). The complainant's description could not be determined in 16 letters (0.7%). In 116 cases, the person filing the complaint was speaking on behalf of themselves as a patient and also as a family member or caregiver.

Table 2. Complaint details

Complainant	No.	%
Patient	1,682	72.5
Family member	465	20.0
Third party or other	100	4.3
Dental professionals	57	2.5
Unspecified	16	0.7
Total	**2,320**	**100.0**

LOC seldom disclosed sufficient information regarding the use of a public program. Nevertheless, 138 LOC mentioned the use of one or more public programs, such as the Ontario Disability Support Program (ODSP), Ontario Works (OW), the Non-Insured Health Benefits (NIHB) Program, Healthy Smiles Ontario (HSO) – formerly Children in Need of Treatment (CINOT) – and the Ontario Health Insurance Program (OHIP). Other programs included Veterans Affairs Canada (VAC), Workplace Safety and Insurance Board (WSIB), and Municipal dental programs. Nine letters mentioned using a public program but did not specify the type (see Figure 2).

Figure 2. Use of public programs in complaints
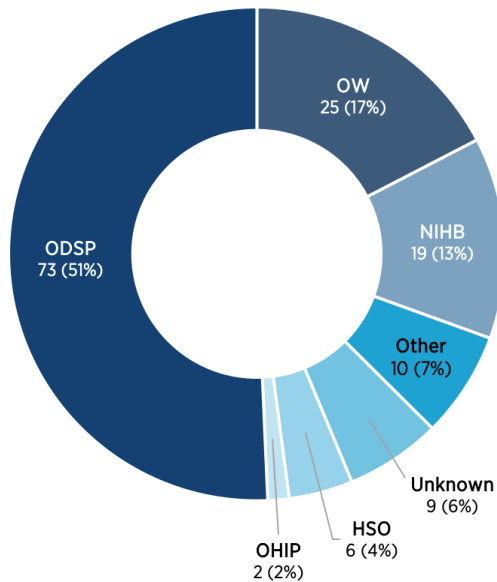
Among the 2,199 LOC, 3,384 providers, staff members and other individuals (in various combinations) were identified in relation to the complaint (Table 3). General dental practitioners were most commonly complained about (70.2%), followed by dental specialists (11.8%) and administrative staff (9.4%). The other provider category consisted of the whole dental clinic, nurses, denturists, technicians, medical doctors, insurers and dental students. Details on 21 individuals complained remained unclear.

Approximately 8 out of 10 (82%) LOC were wholly or partially related to clinical services. Restorative services (35.4%), diagnostic services (25.9%), endodontic services (17.3%) and surgical services (16.8%) were reported most frequently and often in combination within a LOC.

Table 3. Staff and clinical details in complaints

| Detail	No.	%
Staff complaint refers to:		
General dental practitioners	2,376	70.2
Dental specialists	400	11.8
Administrative staff	318	9.4
Dental assistants	98	2.9
Other	89	2.6
Dental hygienists	82	2.4
Unspecified	21	0.6
Total	3,384	100.0
Clinically-related complaint?		
Yes	1,804	82.0
No	395	18.0
Clinical area(s) related to the complaint:		
Restorative services	638	24.4
Diagnostic services	474	18.1
Endodontic services	308	11.8
Surgical services	306	11.7
Fixed prosthodontic services	202	7.7
Adjunctive services	178	6.8
Orthodontic services	129	4.9
Removable prosthodontic services	119	4.5
Preventive services	116	4.4
Unspecified	89	3.4
Periodontal services	42	1.6
Other	16	0.6
Total	2,617	100.0

THE CONTENT OF COMPLAINTS

The 2,199 LOC contained 17,752 complaint codes, with an average of 8.1 complaint codes raised per letter. Some LOC were brief and only related to one specific issue, while others were very detailed and complex. Overviews of the complaint totals are presented at the domain, category and sub-category levels.

Domain
An overview of the complaint breakdown from the total sample is presented in Figure 3. Over half of LOC sample included complaints about one or more issues relating to the Clinical Care and Treatment, and Relationships and Conduct domains. Less than half of the LOC contained a complaint issue relating to the Management and Access domain.

Figure 3. Overview of complaints, by domain, as a proportion of all LOC (n=2,199)
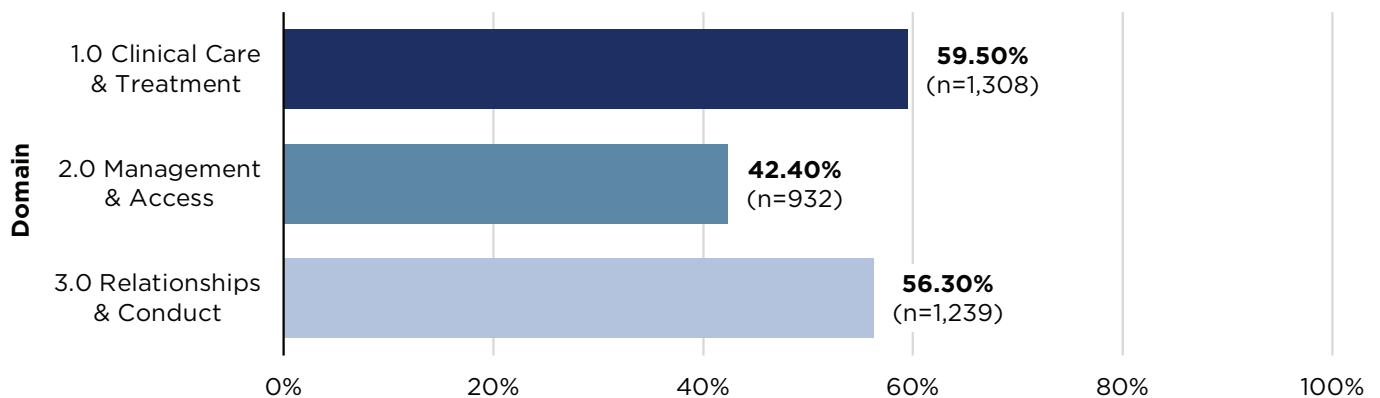
The overview of complaints by domain was also represented as a proportion of the total complaint codes counted (n=17,752), shown in Figure 4. The Clinical Care and Treatment domain was also most prominent, followed by the Relationships and Conduct domain. Again, the fewest number of complaints related to the Management and Access domain.
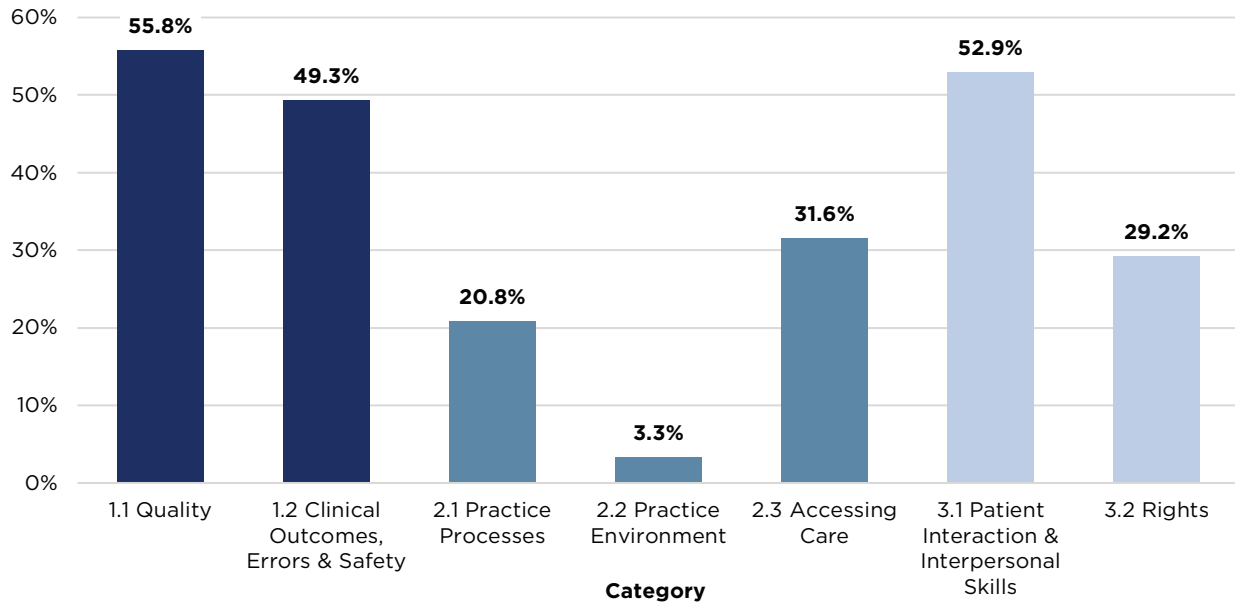
Figure 4. Overview of complaints, by domain, as a proportion of all complaint codes (n=17,752)
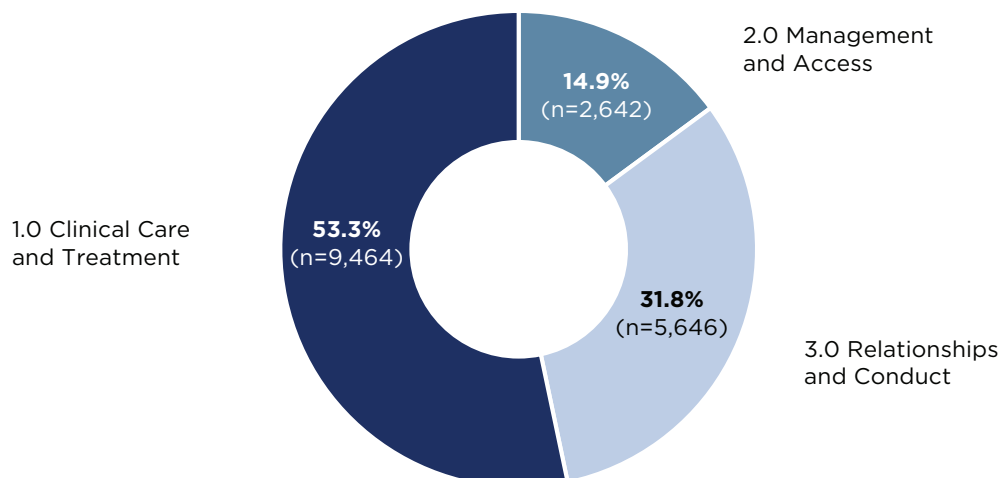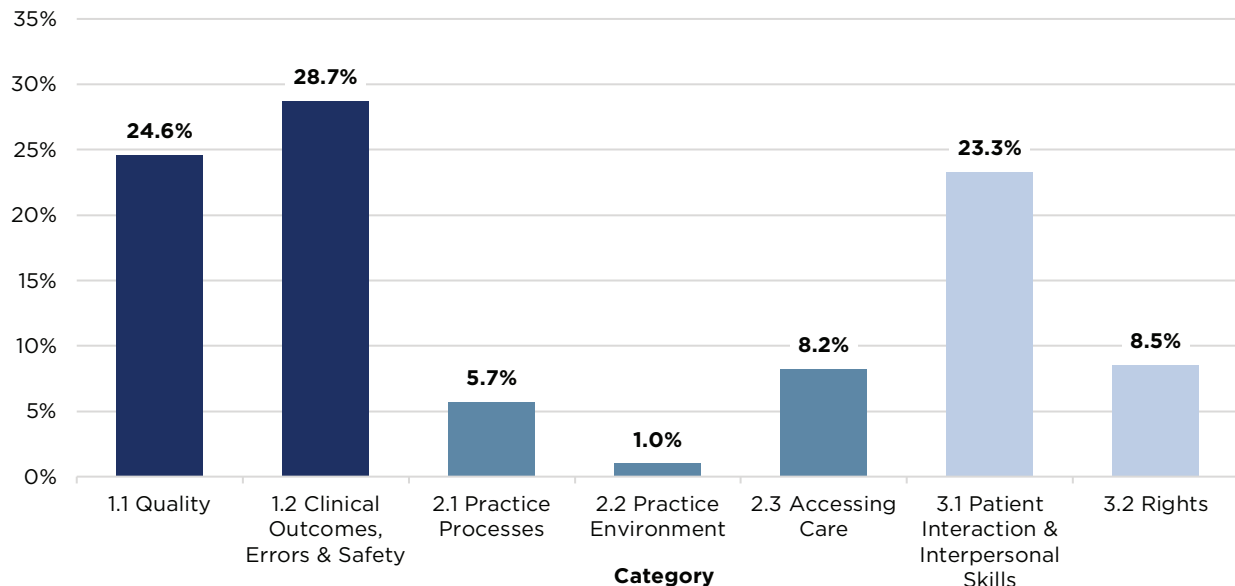
Category

The overview of complaints at the category level is presented in Figures 5 and 6. Issues related to the problem categories Quality (1.1) and Patient Interaction and Interpersonal Skills (3.1) were found in over half of all LOC, and almost half of the LOC presented an issue about Clinical Outcomes, Errors and Safety (1.2). Only 73 (3.3%) LOC contained a complaint about to the Practice Environment (2.2).

Figure 5. Overview of complaints, by category, as a proportion of LOC (n=2,199)

In relation to the total complaint codes counted, the Clinical Outcomes, Errors and Safety (1.2) category reported the highest number and proportion of complaints by category. This was followed by the Quality (1.1) and Patient Interaction and Interpersonal Skills (3.1) categories. Similarly, the category with the least amount of complaint codes counted was Practice Environment (2.2).

Figure 6. Overview of complaints, by category, as a proportion of all complaint codes (n=17,752)
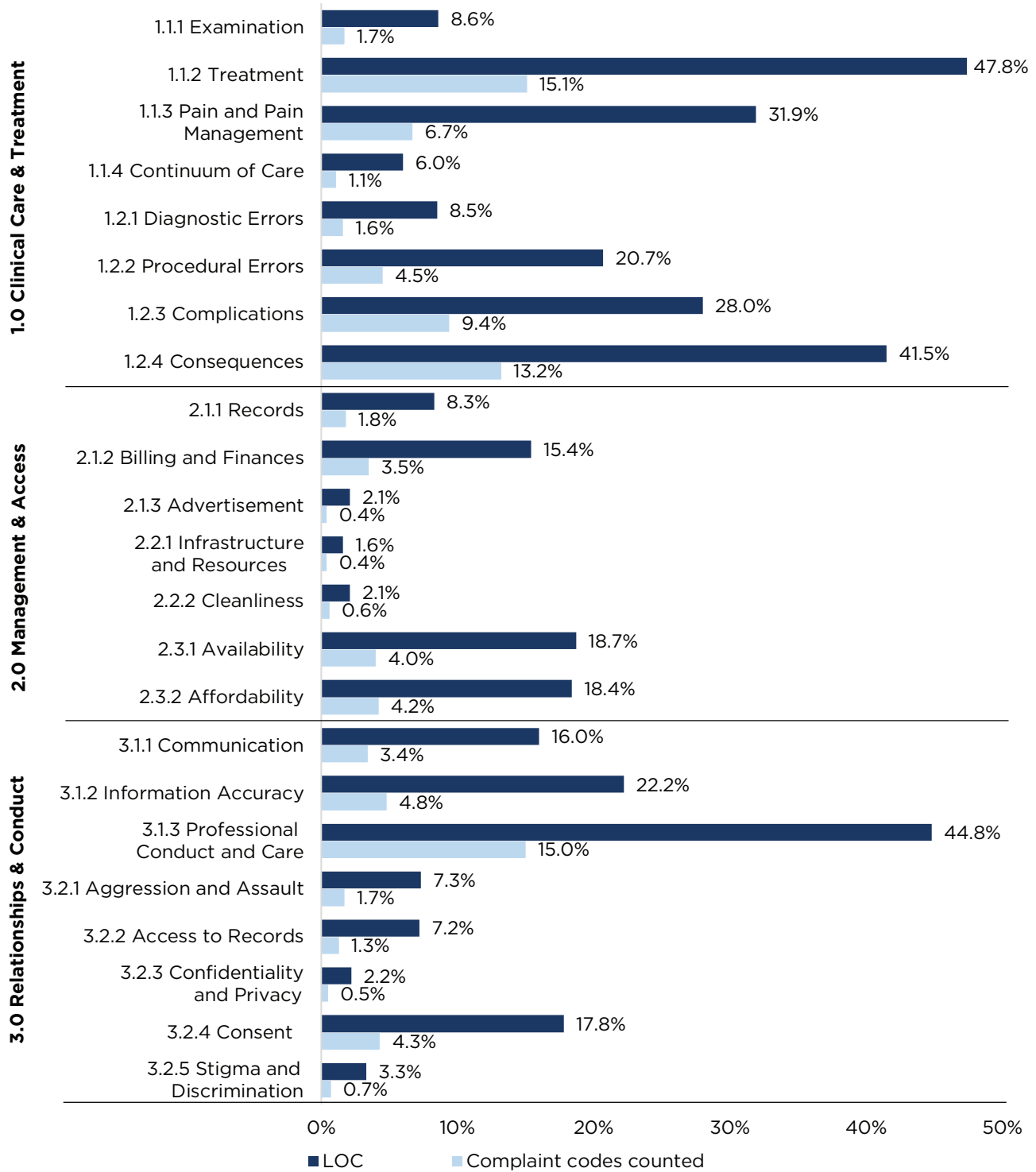
Sub-Category
The breakdown of complaints at the sub-category level is presented in Figure 7. The most reported sub-categories are "Treatment," "Consequences of errors and complications," and "Professional conduct and care."

Complaints related to "Treatment" were reported in almost half of the sample, representing the highest sub-category total in its respective category (1.1 Quality) and domain (1.0 Clinical Care and Treatment). "Consequences" also represented the highest sub-category total in its respective category (1.2 Clinical Outcomes, Errors and Safety). Complaints related to the "Continuum of care" and "Diagnostic errors" were among the lowest reported sub-categories in the first domain and respective categories.

In the second domain (2.0 Management and Access), the sub-categories belonging to the Accessing Care (2.3) category ("Availability" and "Affordability"), were most prevalent, followed by the "Billing and finances" sub-category. Issues relating to the Practice Environment (2.2), including "Infrastructure and resources," and "Cleanliness," were among the least reported issues.

Complaints about "Professional conduct and care" were also reported in almost half of the sample, representing the highest sub-category total in its respective category (3.1 Patient Interaction and Interpersonal Skills) and domain (3.0 Relationships and Conduct). Issues related to "Information accuracy" was present in almost one-quarter of the sample. The most reported issue in the Rights (3.2) category were those about "Consent," while issues about "Stigma and discrimination", and "Confidentiality and privacy" were infrequent.

Figure 7. Overview of complaints, by sub-category

Figure 7. Overview of complaints, by sub-category

1.0 Clinical Care & Treatment

Sub-category	LOC	Complaint codes counted
1.1.1 Examination	8.6%	1.7%
1.1.2 Treatment	47.8%	15.1%
1.1.3 Pain and Pain Management	31.9%	6.7%
1.1.4 Continuum of Care	6.0%	1.1%
1.2.1 Diagnostic Errors	8.5%	1.6%
1.2.2 Procedural Errors	20.7%	4.5%
1.2.3 Complications	28.0%	9.4%
1.2.4 Consequences	41.5%	13.2%

2.0 Management & Access

Sub-category	LOC	Complaint codes counted
2.1.1 Records	8.3%	1.8%
2.1.2 Billing and Finances	15.4%	3.5%
2.1.3 Advertisement	2.1%	0.4%
2.2.1 Infrastructure and Resources	1.6%	0.4%
2.2.2 Cleanliness	2.1%	0.6%
2.3.1 Availability	18.7%	4.0%
2.3.2 Affordability	18.4%	4.2%

3.0 Relationships & Conduct

Sub-category	LOC	Complaint codes counted
3.1.1 Communication	16.0%	3.4%
3.1.2 Information Accuracy	22.2%	4.8%
3.1.3 Professional Conduct and Care	44.8%	15.0%
3.2.1 Aggression and Assault	7.3%	1.7%
3.2.2 Access to Records	7.2%	1.3%
3.2.3 Confidentiality and Privacy	2.2%	0.5%
3.2.4 Consent	17.8%	4.3%
3.2.5 Stigma and Discrimination	3.3%	0.7%

■ LOC ■ Complaint codes counted

CONCLUSION

This study produced a complaint taxonomy and protocol to systematically analyze a statistically representative and anonymized sample of LOC made by the public to the RCDSO between 2007 and 2017.

Complainants ranged from patients to government agencies and insurers, but patients made up the largest complainant group. Most LOC related to Clinical Care and Treatment, or issues relating to the quality and safety of dental services, and Relationships and Treatment, or issues relating to the behaviour of providers or any member of a clinic's staff towards the patient or complainant. Within these, prominent concerns related to Quality, Clinical Outcomes, Errors and Safety, and Patient Interaction and Interpersonal Skills.

The findings from this study have regulatory, professional, educational, and policy implications. In particular, they are useful for quality assurance and improvement purposes.

It is recommended that the RCDSO:

1. Continue the complaints analysis process in forthcoming years (e.g., repeat the process every five years) to gather more data about the nature and trends of complaints made to the RCDSO over longer time periods;

2. Use findings from this study and compare it with other sources of information (e.g., disciplinary findings, regulatory and policy changes, market trends) to gain a more in-depth understanding about the nature, severity and factors contributing to complaints;

3. Create, or enhance, educational materials for dental students, dentists and members of the public regarding specified topics in dental care; and

4. Develop an evaluation protocol to measure the impact of interventions on complaints for quality assurance purposes.

In closing, this study is the first to conduct a content analysis of complaints made by the public to a Dental Regulatory Authority in Canada. The valuable information provided by complaints may be used for improving the quality and safety of dental care in Ontario.

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