Estimating the prevalence of drawing in clinical practice among Kiwi doctors

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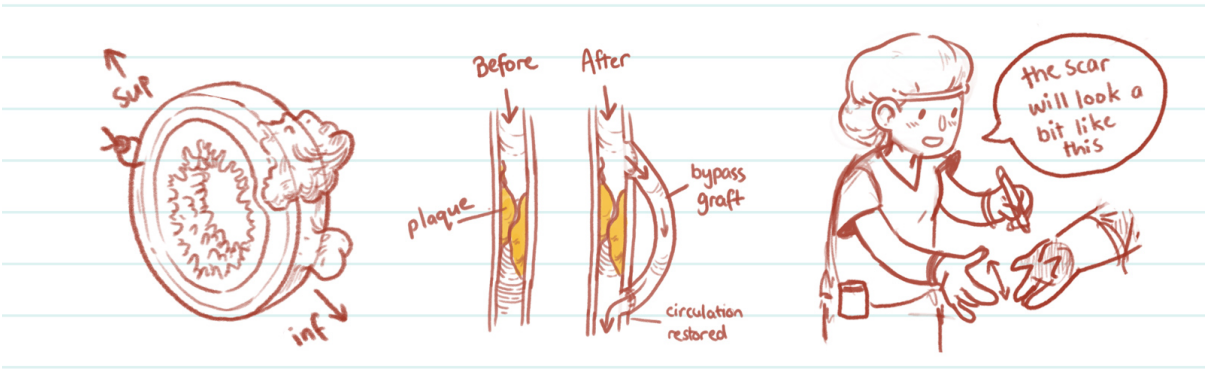

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ABSTRACT

Drawing has played a key role in the development and dissemination of Medicine and Surgery, such as to share anatomy, pathology, and techniques for clinical interventions. While many of the visuals used in medicine today are created by medical illustration professionals, and by imaging techniques such as photography and radiography; many doctors continue to draw routinely in their clinical practice. This is known to be valued by patients, for example when making informed decisions about care. We surveyed doctors in New Zealand online regarding their use of drawing to explore the prevalence of this practice. 472 complete responses were obtained over 3 months. There were very high rates of drawing among responding doctors practicing in both medical and surgical specialties. Reasons for drawing are explored and included professional, collegial, and patient communication, supporting informed consent, clinical documentation, and for planning procedures. Widespread use of drawing in clinical practice, almost non-existent training or support for this in digital workflows, and high interest in resources to develop clinical drawing skills, suggest unmet training needs for this practical clinical communication tool.

INTRODUCTION

Drawing as an art form has played a key role in the development and dissemination of Medicine and Surgery, particularly to share anatomy, pathology, and techniques for clinical interventions. While many of the visuals in medicine today are created by medical illustration professionals and imaging techniques such as photography and radiography; many doctors continue to draw routinely in their practice, such as when consenting patients for surgery, teaching, and documenting post-operative notes.[1–4] Handmade drawings can be an immensely practical visual aid, created quickly to communicate specific information that is tailored to the recipient. Despite often being 'sketchy' or schematic in nature, they are powerful personalised distillations of key information that may be harder to communicate verbally or with text in isolation. The act of drawing is part of the experience also; this sets the pace that information is shared and allows for evolution of the art, further catering to the specific needs and questions of recipients.

Study of drawing in clinical practice has been relatively limited however, and little is known about the prevalence of such activity in contemporary healthcare among doctors.[4,5] A survey of 100 surgeons in the United Kingdom (UK) found that a high proportion of responding surgeons drew in their clinical practice and valued drawing undertaken by their colleagues. Examples included explaining pathology results and interventions to patients, documenting operative findings and for teaching surgery to trainees.[2] Another survey-based study explored the materials used to prepare 244 patients for surgery in a tertiary General Surgery department in the UK.[1] Over half the patients received drawings from their surgeons during the consent process. Patients reported usefulness for supporting informed decision making, particularly when used to explain more complex operations.

In order to further the evidence base, which suggests wide use of drawing as a clinical communication tool in some healthcare systems, we attempted to estimate the prevalence of this practice by doctors in New Zealand (NZ) via an online survey. We also explored reasons for drawing, and the receipt or interest in formal training in this skill.

METHODS

The primary aim of the study was to estimate the prevalence of drawing in clinical practice amongst New Zealand doctors. The secondary aim included determining the proportion of New Zealand doctors who draw when studying, teaching, or in other aspects of their practice; to gauge drawing experience and previous exposure to drawing training; and to gauge interest in formal training resources for drawing as a clinical communication skill.

A brief online survey was designed using REDCap[6] and shared opportunistically by direct email, social media groups for doctors, hospital and society newsletters, and various channels who responded to invitations to distribute the survey, such as Pacific Radiology, and the New Zealand Society of Otolaryngology, Head and Neck Surgery. A link to the survey was also shared via personal and professional networks of the study team, and by reaching out to departments, colleges, hospital contacts to consider sharing. The messages encouraged recipients, and survey encouraged respondents, to also consider sharing a link to the survey within their own networks to encourage cascading reach.

The survey invited voluntary and anonymous participation irrespective of whether the respondent used drawing in their practice. Interested persons who clicked a survey link were presented with an explanation of the study and how information would be used. In order to take part, they had to confirm eligibility (that they were a practising medical doctor in NZ) and consent to take part. The survey link was made live and promoted as described over a period of 3 months (1/6/21 to 30/8/21).

Drawing was defined as: “Making marks to create pictures on a 2-dimensional surface. This would include (but is not limited to) any type of picture drawn with a pen or pencil on paper, or finger/stylus/pen on a digital device such as an iPad. Drawings do not necessarily have to be detailed, accurate, artistic, or representational.” Figure 1 shows examples that were provided to participants based on real drawings made by doctors.

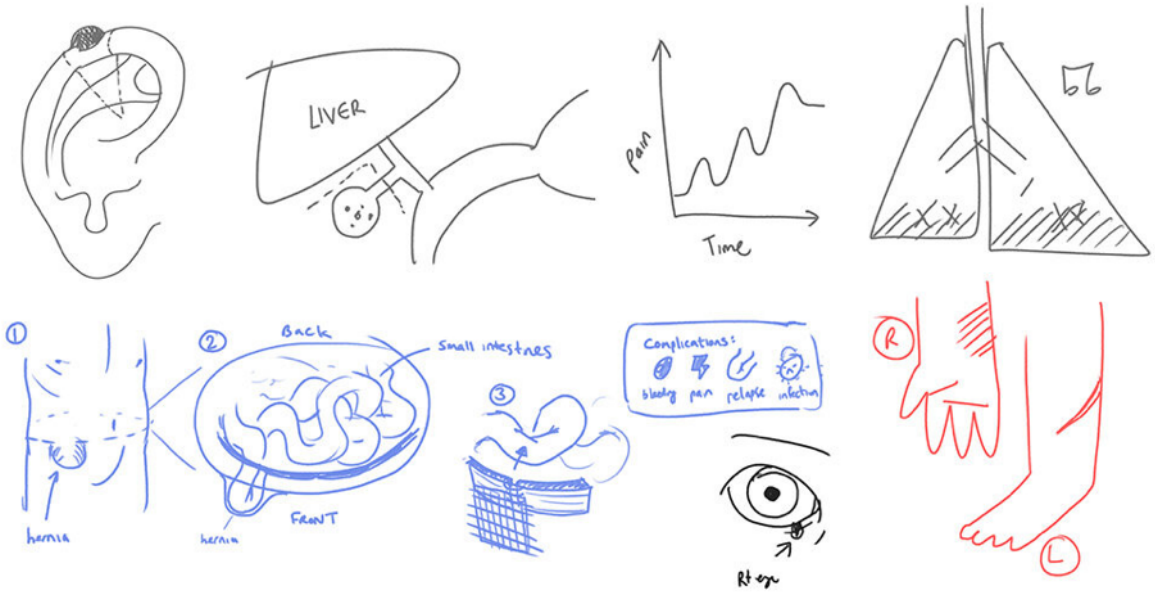

Figure 1: Examples of drawings based on those made by physicians and surgeons in clinical practice

Analysis

Simple descriptive statistics were used to summarise the findings. Chi-square tests, Relative Risk, and Fisher's exact test were used to compare categories where this was done. Logistic regression was used in the sensitivity analyses.

Ethics

Ethics approval was obtained from the University of Otago Ethics Committee [H18/071] . Participants voluntarily consented to participation prior to completion of surveys.

RESULTS

There were 478 responses to the survey of which 472 were usable after removing two test records, and four incomplete or invalid responses. In our survey, Medical specialities were made up of 66.6% female vs 33.1% male doctors, and surgical specialities were made up of 51.8% female vs 48.2% male doctors. A breakdown of respondent demography is available in Table 1. Respondents represented an experienced sample of doctors across clinical and surgical specialities (Figure 2 and Figure 3), with a mean duration practicing medicine of almost 20 years. The majority were in a vocational scope of practice (indicating full specialist registration). This group potentially represent up to 2.9% of the medical workforce based on the 2018 Medical Council of New Zealand (MCNZ) Workforce Survey.[16] Ethnic representation of doctors in the 2018 Workforce Survey were similar to our survey for European (80.5 vs 79.0%), Māori (3.5% vs 4.0%), and Asian (15.0% vs 11.3%) doctors, but Pasifika (1.8% vs 0.2%) and Middle Eastern/Latin American/African (10.6% vs 1.1%) doctors were under-represented. Gender representation (55.9% female vs 62.9%, and 44.1% male vs 36.7%) was similar to the NZ workforce in 2018.[16]

Demographic characteristic	Mean (SD, range)
Age N=467	44.63 years (11.24, 24 to 77)
Years practicing medicine N=468	19.44 (11.31, 0.05 to 52)
Scope of Practice	N/472[1] (%)
Vocational scope	327 (69.3)
In vocational training	90 (19.1)
General scope and not in vocational training	48 (10.2)
Other	7 (1.5)
Ethnicity N=471	
European	373 (79.0)
Asian	71 (15.0)
Māori	19 (4.0)
MELAA	5 (1.1)
Not specified	2 (0.4)
Pacific Island (Pasifika)	1 (0.2)
Prefer not to say	1 (0.2)
Gender	
Female	297 (62.9)
Male	173 (36.7)

Another	1 (0.2)
Prefer not to say	1 (0.2)

[1] Unless otherwise specified

Table 1: Summary of respondent demographics

Figure 2 shows a breakdown of the areas of medical practice represented by responding doctors. The 36 areas of medicine defined by the Medical Council of New Zealand (MCNZ) were offered as options to participants for answering this question.[7] These were categorised into a medical and surgical sub-group for analysis (Table 2). General Practitioners formed the largest single group of respondents (42.6%) for medics, and General Surgeons (24%) for doctors in surgical specialities. These were similar to proportions of the number of doctors by vocational scope for most clinical specialities reported in a 2020 MCNZ survey (Supplemental Table 1), although we note that some minor specialities each representing less than 1% of the workforce were not represented.[8] The 'other' category represents specialities not deemed clinical or surgical for the purposes of this survey, and includes Medical administration, Pathology, Public Health Medicine, and Other (unspecified).

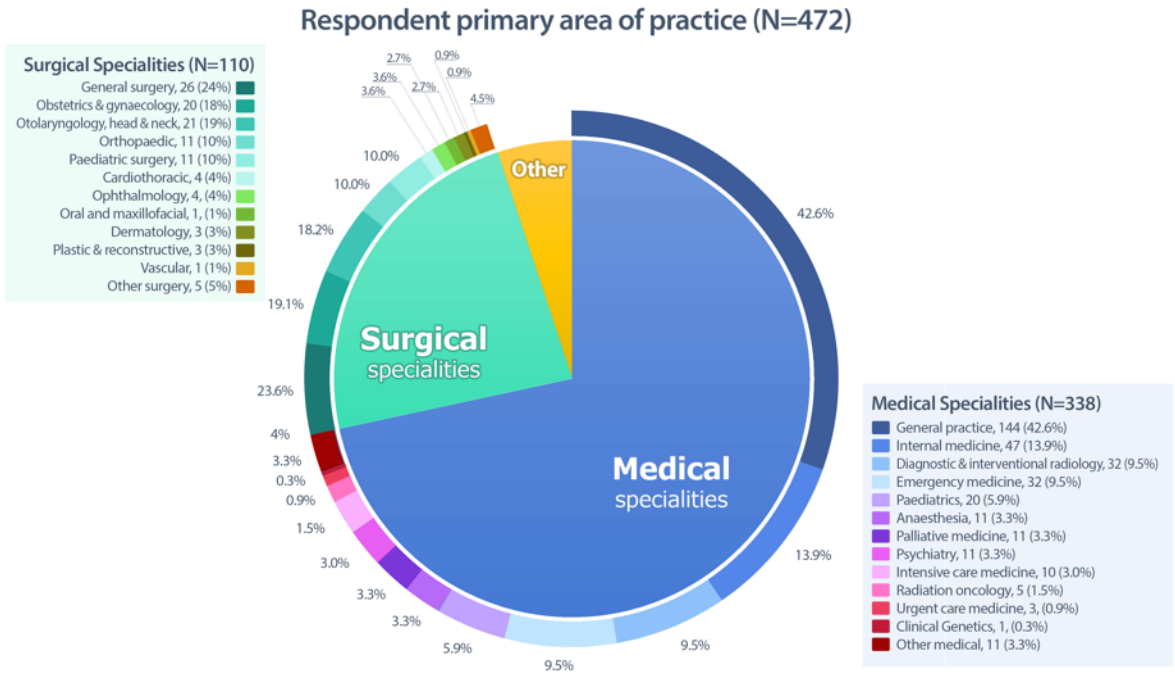

Figure 2: Breakdown of respondents' primary area of medical practice. The 'other' category represents specialities not deemed clinical or surgical for the purposes of this survey, and includes Medical administration, Pathology, Public Health Medicine, and Other (unspecified).

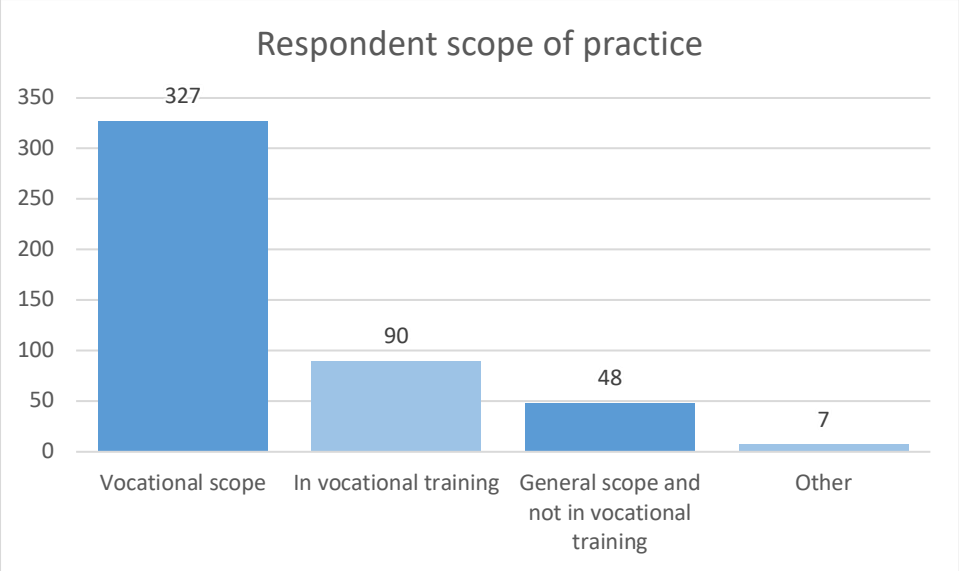

Figure 3: Scope of respondent's medical practice

Table 2 summarises participant responses to survey questions for the group overall, the sub-groups of those with a surgical versus medical primary area of practice, and results of the analyses of differences between responses for the two sub-groups.

Response	All N/472[1]	Surgical N/110[1] (%)	Medical N/338[1] (%)	Relative Risk of Surgical vs Medical (95% CI)
Do you ever draw in your clinical practice? = Yes	430 (91.3)	106 (96.4)	301 (89.3)	1.08 (1.02 to 1.14) P=0.025
Do you ever draw when studying? = Yes	377 (80.4) N=469	91 (83.5) N=109	265 (78.9) N=336	1.06 (0.96 to 1.17) P=0.30
Do you ever draw when teaching? = Yes	431 (91.3)	108 (98.2)	304 (89.9)	1.09 (1.04 to 1.14) P=0.006
If you do not draw in your clinical practice, why not?				
I do not think that drawing can help with clinical practice	7 (17.1)	1 (25.0) N=4	6 (16.7) N=36	1.50 (0.24 to 9.52) P=0.55[3]
Time constraints	7 (17.1)	2 (50.0) N=4	5 (13.9) N=36	3.6 (1.01 to 12.86) P=0.13[3]
My art skills are lacking	14 (34.1)	4 (100.0) N=4	10 (27.8)) N=36	3.6 (2.13 to 6.10) P=0.01[3]
Other	20 (48.8)	0 (0.0) N=4	19 (52.8) N=36	NA P=0.11[3]
In your experience, how does drawing affect the time it takes to have a clinical consultation/patient interaction?[4]		N=106	N=301	
The consultation is slower	41 (9.5)	10 (9.4)	31 (10.3)	P=0.21[5]
The consultation is faster	152 (35.3)	46 (43.4)	98 (32.6)	
Not sure	142 (33.0)	32 (30.2)	101 (33.6)	
No effect	95 (22.1)	18 (17.0)	71 (23.6)	
In which aspects of practice have you drawn?[2,4]				

When communicating with patients (e.g. to explain disease or treatment)	405 (94.4)	102 (97.1) N=105	290 (96.3) N=301	1.01 (0.97 to 1.05) P=1.00[3]
When there is a communication barrier (e.g. language, education, health literacy)	207 (48.3)	60 (57.1) N=105	138 (34.0) N=301	1.25 (1.01 to 1.53) P=0.046
Clinical documentation	232 (54.1)	23 (21.9) N=105	130 (43.2) N=301	1.81 (1.53 to 2.13) P<.0001
Other	35 (8.2)	6 (5.7) N=105	20 (6.6) N=301	0.86 (0.36 to 2.08) P=0.74
Do you draw as a hobby? = Yes	79 (16.7)	14 (12.7)	58 (17.2)	0.74 (0.43 to 1.28) P=0.27
Do you draw professionally? = Yes	5 (1.1)	0 (0.0)	4 (1.2)	NA P=0.57[3]
Have you received drawing training outside of your medical training? = Yes	36 (7.6)	6 (5.5)	24 (7.1)	0.77 (0.32 to 1.83) P=0.55
Have you received drawing training as part of medical training? = Yes	12 (2.5)	3 (2.7)	9 (2.7)	1.02 (0.28 to 3.72) P=1.00[3]
Would you be interested in teaching resources re: drawing skills for doctors? = Yes	274 (58.1)	71 (64.5)	190 (56.2)	1.15 (0.97 to 1.36) P=0.12

[1] Unless otherwise specified
[2] Multiple answers allowed, may add to >100%
[3] Fisher's Exact Test
[4]Asked to those who indicated they draw
[5]Chi Square

Table 2: Response summary and comparison of medical and surgical groups

Prose responses to "***In which aspects of practice have you drawn?***" where respondents selected 'Other', are presented in Supplemental material A.

DISCUSSION

Primary outcome

The prevalence of drawing in clinical practice among NZ doctors responding to the survey was very high at 91.3%. Although no previous prevalence data could be identified for doctors practicing in medical specialities; this result is similar to reported rates of 92.0% and 93.8% for surgeons working in the United Kingdom[2], and Italy[9] respectively. As our study includes doctors practicing in both Medical and Surgical specialities, it adds to the literature with comparisons between these groups. Doctors with a primary surgical area of practice were 8% more likely to draw in clinical practice and 9% more likely to teach with drawings than their colleagues with a primary medical area of practice. Previous research with surgeons noted drawings were regularly used in the informed consent process and surgical documentation, which may help explain greater use compared to those with a primary medical area of practice.[1,2]

Why do doctors draw?

Images can be efficient tools for communicating visuospatial information such as anatomy, and relative size, position, and orientation. Drawing allows a doctor to filter complex medical information into to a simplified schematic representation, tailored dynamically to the patient in real time.[1,2] Almost all responding doctors who drew did so to communicate with patients such as when explaining disease or treatment. Twenty-five percent more doctors with a primary

surgical area of practice used drawing to help overcome communication barriers such as language, education or health literacy, while 81% more doctors with a primary medical area of practice drew in their clinical notes. For the 26 doctors who indicated 'Other' reasons for drawing and explained this further, explanations included professional, collegial, and patient communication; to organise complex information visually such as treatment regimens and disease trajectories; to help patients understand the location of disease, anatomy, surgical procedures, and likely scarring; to help build rapport with children; to communicate with young patients with autism and neurodevelopmental conditions; planning surgical procedures; and creating diagrams to orientate surgical specimens to their pre-sectioned macroscopic appearances (Figure 4).

Drawings were noted to have value beyond information transfer. One General Practitioner reported they made drawings for patients to add to at home, giving the example of "*what goes in your kere[sic] of wellness*", a kete being the Māori (Indigenous People of Aotearoa / New Zealand) term for basket. This shows a collaborative therapeutic use of drawing. Similarly, one paediatrician described drawing alongside young children to build rapport and put them at ease "*I might draw a dog or an elephant*", and another noted "*doodling with purpose*" when working with young people with oral language difficulties. One General Practitioner used drawings to express "*collegial support, encouragement, or to say sorry*". Such creative and unexpected uses may not be captured in standardised evaluation of clinical practice or closed questioning, and so dynamic qualitative research methods will likely help researchers further explore this subject with more depth and nuance.

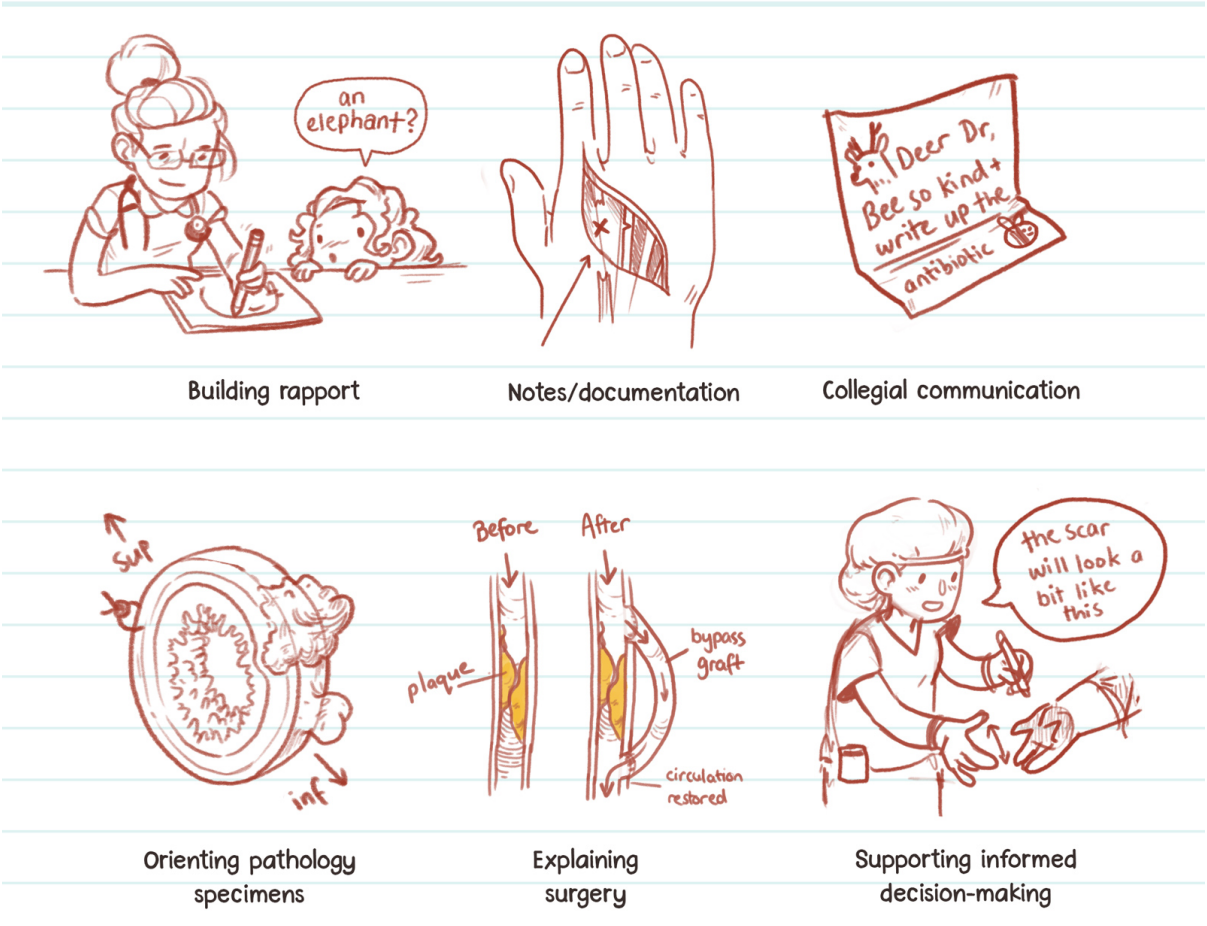

Figure 4: Some of the ways drawing were used in clinical practice by responding doctors.

The non-drawers

While drawing appears to be a useful communication tool appreciated by the vast majority of responding doctors, not all respondents actively used this skill. Among non-drawing doctors; all of those with a primary surgical area of practice and about a third with a primary medical area of practice cited lack of drawing skills as a reason. A minority of 25% (surgical) and 16.7% (medical) respondents in this group did not think drawing could help in their practice. For the doctors who indicated 'other' as the reason for not drawing, reasons including paperless digital workflows impeding or preventing incorporation of physical drawings; the accessibility of clear visual representations online eg by internet image search; that they used radiology images for visual communication; had minimal or no clinical contact; and one had not thought of drawing before.

Drawings need not be created in their entirety by a doctor. In a survey of UK surgeons some respondents described the use of drawing on standardised template art which could save time and help those lesser skilled at drawing.[2] Urology research that found marking standardised bladder diagrams at the point of bladder tumour diagnosis was a significant factor associated with fewer disease recurrences following transurethral resection of bladder tumour (TURBT).[10,11] Use of these standardized diagrams is currently an evidence-based recommendation in the 2021 European Association of Urology guidance for the management of non-invasive bladder cancer.[12] Other areas of clinical practice that may involve drawing on standardised visual templates include arterial doppler ultrasound reports, and diagrams of the tympanic membrane, vulva, and retina in otolaryngology, gynaecology, and ophthalmology specialities respectively.

Lyon and Turland interviewed medical professionals who drew in depth. An Occupational Therapist who took part in their study described that standardised templates had led to a decline in drawing in their profession.[5] Similar concerns have been expressed in primary education regarding loss of hand-writing and reading skills among students with increased dependence on electronic interfaces. There is evidence from kindergarten children showing that writing with a pencil led to better letter recognition and visuomotor skills than keyboarding,[13] and that learning letters by drawing them using a pen led to better writing and word reading skills.[14] There may be a risk of losing the art and opportunities of drawing in clinical practice with adoption of paperless electronic systems in healthcare if they cannot facilitate this method of communication.

Template illustrations can be restrictive in what is presented, and how far they may be tailored to patient or clinician needs. Also, the final visual produced may not be the most valuable aspect of a drawing. In the process of creation, information can be built up over time, allowing explanation of more complex concepts (like a surgical procedure) in manageable chunks. A drawing can also be actively altered to show change over time (eg anatomy before and after a disease process, and with medical intervention). The final drawing alone, like the last page of a book, does not represent the whole experience of creating or witnessing a drawing being produced. This may help explain why the technical artistic merits of drawings are not necessarily important in clinical practice,[1] as the actual final appearance is just one aspect of a multisensory interaction. Some respondents commented on the value of drawings to build trust with patients such as when drawing animals for children. The creation of these drawings facilitated clinical interactions in a way that is not easy to appreciate from what the final combination of marks represents.

Drawing is not inherently appropriate however; some respondents in a survey of UK surgeons warned of the dangers of relying too heavily on drawing if it replaced clear description in surgical documentation, noting that drawings might be more open to misinterpretation and easier to fabricate than photography or video if used in a medico-legal context.[2] Further study is needed to determine where drawings are appropriate, valued, and most effective.

Adapting to a paperless electronic future

One participant, whose primary area of practice was emergency medicine, expressed frustration that drawing in clinical documentation could not be added to electronic notes, giving the example of "*location / size of a corneal abrasion*" which they felt was effectively communicated visually. Under the NZ Code of Health and Disability Services Consumers' Rights,[15] every patient has the right to effective communication in a form, language, and manner that enables them to understand the information provided. There is evidence that patients value information in, or supported by, the medium of drawing,[1,9] Facilitating the option of drawing in electronic systems for those who wish to do so, may help doctors uphold these patient rights. As paperless electronic solutions increasingly become the norm in healthcare, consideration should be given in software development regarding how to create, capture, and integrate drawings in electronic notes and workflows. This will ensure that this method of dynamic and tailored clinical communication is not lost.

Consultation speed

Doctors who reported drawing in their clinical practice were asked about how this affected the time to have a clinical consultation or patient interaction. 35.3% felt consultations were faster, 9.5% felt consultations were slower, 33.0% were not sure, and 22.1% felt this had no effect. This provides preliminary subjective evidence that drawing may facilitate more timely consultations. Greater efficiency in care is broadly valuable in under-resourced and busy clinical environments, making this line of enquiry interesting for future research.

Training in drawing skills

Although the majority of respondents (91.3%) used drawing in aspects of their clinical practice, only a minority (2.5%) had received formal training for this in their medical training, and over half (58.1%) expressed an interest in teaching resources for this communication skill (including over a third of those who did not currently draw). This indicates unmet training needs for a widely used clinical communication skill.

LIMITATIONS

Selection bias may have skewed responses towards those with interest in or strong opinions on drawing in clinical practice. Survey distribution was uncontrolled but not random in order to facilitate maximum reach and achieve a convenience sample of doctors in NZ. This may explain underrepresentation in some aspects of the expected demography based on the 2018 MCNZ workforce survey, and variation in reported primary areas of practice. Results may therefore not be generalisable to all doctors in NZ or those in other healthcare systems.

Sub-comparisons of medical and surgical specialities were made by subjective grouping of respondents' primary area of practice, particularly for mixed medical and surgical specialities

such as Obstetrics and Gynaecology, Ophthalmology, and Dermatology, which in our survey were treated as surgical, in line with previous work.[2] Others may disagree with this classification. Grouped rather than by-speciality analysis was necessary given the sample size, but may help those planning future studies direct efforts towards specialities with higher use of the skill, and who may be under supported in training. We note that significant differences between individual specialities may be cancelled out by such an approach.

CONCLUSIONS

We found very high prevalence of drawing in clinical practice amongst 472 doctors in Aotearoa New Zealand, which to the authors' knowledge, is the largest survey of its kind to date. This builds on previous research with data from another healthcare system, demonstrating high rates of drawing among doctors practicing in both medical and surgical specialities. Widespread use of drawing in clinical practice, almost non-existent training, and high interest in resources to develop clinical drawing skills, suggest unmet training needs for this practical clinical communication tool.

DISCLOSURES

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Supplemental Table 1

Vocational scope or primary area of practice	2020 MCNZ n/10,963 (%)	Our survey n/472 (%)
Anaesthesia	879 (8.1)	11 (2.3)
Cardiothoracic surgery	31 (0.3)	4 (0.8)
Clinical genetics	16 (0.1)	1 (0.2)
Dermatology	77 (0.7)	3 (0.6)
Diagnostic and interventional radiology	570 (5.2)	32 (6.8)
Emergency medicine	350 (3.2)	32 (6.8)
Family planning and reproductive health	30 (0.3)	0 (0.0)
General practice	3,748 (34.5)	144 (30.5)
General surgery	298 (2.7)	26 (5.5)
Intensive care medicine	111 (1.0)	10 (2.1)
Internal medicine	1,222 (11.2)	47 (10.0)
Medical administration	30 (0.3)	0 (0.0)
Musculoskeletal medicine	24 (0.2)	0 (0.0)

Neurosurgery	24 (0.2)	0 (0.0)
Obstetrics and gynaecology	337 (3.1)	20 (4.2)
Occupational medicine	64 (0.6)	0 (0.0)
Ophthalmology	166 (1.5)	4 (0.8)
Oral and maxillofacial surgery	30 (0.3)	1 (0.2)
Orthopaedic surgery	311 (2.9)	11 (2.3)
Otolaryngology, head and neck surgery	119 (1.1)	21 (4.4)
Paediatric surgery	24 (0.2)	11 (2.3)
Paediatrics	422 (3.88)	20 (4.2)
Pain medicine	34 (0.3)	0 (0.0)
Palliative medicine	71 (0.7)	11 (2.3)
Pathology	324 (3.0)	12 (2.5)
Plastic and reconstructive surgery	75 (0.7)	3 (0.6)
Psychiatry	671 (6.18)	11 (2.3)
Public health medicine	180 (1.7)	3 (0.6)
Radiation oncology	68 (0.6)	5 (1.1)
Rehabilitation medicine	27 (0.2)	0 (0.0)
Rural hospital medicine	128 (1.2)	0 (0.0)

Sexual health medicine	19 (0.2)	0 (0.0)
Sport and exercise medicine	33 (0.3)	0 (0.0)
Urgent care medicine	249 (2.3)	3 (0.6)
Urology	68 (0.6)	0 (0.0)
Vascular surgery	33 (0.3)	1 (0.2)
Other	-	25 (5.3)

Supplemental Material A

'Other' reasons for drawing in clinical practice

Teaching medical students To revise for undergraduate and postgraduate exams as part of note-taking
Drawn in research publications
Teaching
I use drawings to communicate to our local pharmacist for collegial support, encouragement or to say sorry when I didn't notice a special authority was due.
I also do minor surgery which requires drawing in documentation and explanation of procedure
To show where lesion is on skin
To help explore complex presentations - to illustrate the connection between internal dialogue, behaviour, environment and mood.
Make patient to understant the surgical procedure/scar/etc
For patients to add to at home eg what goes in your kere of wellness
In my role as a developmental paediatrician I recommend to parents and teachers that they use visual strategies to support the child/ young person with autism or other neuro developmental condition. I have changed my practice to use visual strategies in my day to day clinical practice 1) to be more effective in my communication 2) to demonstrate what using visual strategies looks like. Speech language therapists specialising in communication with teens have been the professional group I have learned from. Drawing is one of the visual strategies I use.
Putting summaries and plans together especially for young people with oral language difficulties- doodling with purpose as part of my learnings from working with Talking Trouble SLTs
explaining procedure and anatomy, USS reports
Drawing as part of a developmental assessment (copying shapes for example)
Teaching & personal notes
When communicating with colleagues. Sometimes use it as an aid when trying to describe a specimen or in our blocking diagrams. When teaching junior colleagues how to cut a specimen.
CONSENT
I had [removed to anonymise] Fellows [removed to anonymise]. 2 of these were incredibly gifted drawers who would spend hours after an operation drawing incredibly accurate and informative operation notes. [removed to anonymise]. I used to also do very simple line

drawings in my patient's notes as part of my initial hand-written operation note. These illustrations were designed to be immediately informative for the parents and nursing staff, but did not replace my dictated operation note. For the record, I am no longer actively practicing clinical surgery.
I draw diagrams to indicate how I have processed surgical excision specimens to make microscope slides in my surgical pathology lab work.
helping families understand disease trajectories
communication with a young child as part of putting them at tneir ease -I might draw a dog or an elephant alongside them
I would find it useful to use drawing in clinical documentation (eg, location / size of a corneal abrasion) but our notes are all electronic, making this very difficult.....
Calculations and descriptions of complex fluid "recipes" eg. with higher concentrations of dextrose
visual thinking, knowledge synthesis, planning out presentations, research, data visualisation, visual abstracts, process diagrams, concept mapping , thematic analysis mapping, theory building, in powerpoint presentations for clinical scenario setting, graphic recording note taking in meetings, explaining dissection to biomedical researchers, making animations for explainer videos, annotating virtual microscope slides,
Drawing gross (macroscopic) pathology specimens for orientation, documentation and designation of sectioning and sampling Drawing histology sections for teaching of registrars
communicating with registrars, clinicians.
Laboratory requests
Communication between staff - eg explaining a finding on medical imaging or a procedure
teaching, demonstrating elements of a procedure to staff, procedure planning
Teaching registrars and technicians and nurses
Teaching
Teaching students/ registrars. I encourage them to draw their findings as I am an otologist
Records of operative findings / anatomy
sometimes as a mind map sort of thing to explain a treatment programme
procedure planning
When teaching or discussing a concept. Particularly flow diagrams and graphs