

Is it possible to register the ideas, concerns and expectations behind the reason for encounter as a means of classifying patient preferences with ICPC-2?

Diego Schrans¹, Pauline Boeckxstaens¹, An De Sutter¹, Sara Willems¹, Dirk Avonts¹, Thierry Christiaens¹, Jan Matthys¹ and Thomas Kühlein²

¹Department of Family Medicine and Primary Health Care, Ghent University, Ghent, Belgium

²Allgemeinmedizinisches Institut, Universitätsklinikum Erlangen, Erlangen, Germany

Background: Family practice aims to recognize the health problems and needs expressed by the person rather than only focusing on the disease. Documenting person-related information will facilitate both the understanding and delivery of person-focused care. **Aim:** To explore if the patients' ideas, concerns and expectations (ICE) behind the reason for encounter (RFE) can be coded with the International Classification of Primary Care, version 2 (ICPC-2) and what kinds of codes are missing to be able to do so. **Methods:** In total, 613 consultations were observed, and patients' expressions of ICE were narratively recorded. These descriptions were consequently translated to ICPC codes by two researchers. Descriptions that could not be translated were qualitatively analysed in order to identify gaps in ICPC-2. **Results:** In all, 613 consultations yielded 672 ICE expressions. Within the 123 that could not be coded with ICPC-2, eight categories could be defined: concern about the duration/time frame; concern about the evolution/severity; concern of being contagious or a danger to others; patient has no concern, but others do; expects a confirmation of something; expects a solution for the symptoms without specification of what it should be; expects a specific procedure; and expects that something is not done. **Discussion:** Although many ICE can be registered with ICPC-2, adding eight new categories would capture almost all ICE.

Key words: classification; family medicine; primary health care; person-focused care

Received 16 December 2016; revised 14 June 2017; accepted 25 June 2017;
first published online 13 September 2017

Introduction

Family practice strives toward a medical model where people are at the centre of health care (EURACT, 2011). The challenge is not only focusing on the disease but recognizing the health problems and needs expressed by the person (Starfield, 2009; 2011). The integration of personal context in clinical decision-making improves

follow up, health outcomes and reduces diagnostic costs (Di Blasi *et al.*, 2001; Stewart, 2003; Starfield, 2009; 2011; Bertakis and Azari, 2011; Stewart *et al.*, 2011; Weiner *et al.*, 2013; Schrans *et al.*, 2016). The unique ability of family practice to accumulate knowledge, both medical and contextual, over time in a continuous relationship makes it possible to give care in a person-focused way (Starfield, 2011).

Many people have symptoms or feel ill, but only some of them actually contact a health care provider (White *et al.*, 1961; Green *et al.*, 2001; Stewart and Ryan, 2015).

Contacting a family physician (FP) will generally be preceded by a complex thinking process

Correspondence to: Diego Schrans, MD, Department of Family Medicine and Primary Health Care, Ghent University, Campus UZ-Ghent, De Pintelaan 185, 9000 Ghent, Belgium. Email: diego.schrans@ugent.be

(Cassell, 2004). This decision process is reflected in one or more ‘reasons for encounter’ (RFE), including not only the presenting symptom or request but also the meaning, interpretation or belief the person attaches to it (Cassell, 1985; Hartman *et al.*, 2011).

The concept of RFE is integrated in the International Classification of Primary Care, version 2 (ICPC-2) (WONCA, 2005; Verbeke *et al.*, 2006), allowing it to be documented in a structured way and making it available for clinical care and research (Hartman *et al.*, 2011). FPs are trained to clarify the RFE in order to tailor their clinical decision in an individualized, person-focused way (Deveugele *et al.*, 2005). One of the strategies to disentangle the RFE is to elicit the ideas, concerns and expectations (ICE) a person has regarding the symptoms he is feeling, the illness he experiences or the social issues he has. Exploring the ICE within or behind the RFE is one way to take the patient’s preferences and values into account, one of the three cornerstones of evidence-based medicine (Sackett, 1995). In a former study, we described the ICE as one of the classes of person-related information (Schrans *et al.*, 2016). Registering ICE in a classified way, using ICPC-2, would not only be interesting for clinical care but also for research purposes and will make ICPC-2, as a classification, more person focused.

This study aims to explore the extent to which the ICE behind the RFE can be classified in ICPC-2 and what additions to ICPC would be needed to be able to classify all identified ICE.

Methods

Setting and data collection

This paper is based on the analysis of data from an earlier study. In the former study, FP trainees affiliated with Ghent University collected data on 613 consultations in 36 GP teaching practices during one day in 2005 (Matthys *et al.*, 2009). All GP trainees ($n = 39$) had been instructed and trained to observe and narratively record the patient’s ICE as expressed during practice consultations or home visits.

Additional information about patient characteristics, the RFE, the diagnosis and consultation details were also collected by the trainees. The RFE and diagnoses are not part of this study because it is known that they can be classified with ICPC-2.

Primary Health Care Research & Development 2018; **19**: 1–6

Classification of free text into codes

First, all registered ICE within the 613 consultations, even if no RFE was noted but an ICE was mentioned in a later stage of the consultation, were classified into ICPC-2 codes by a junior and senior researcher (T.C. and D.S.) independently. Subsequently, different coding outcomes were discussed until consensus was reached. Classification was based upon the operational definition of ICE from the instructions given to the data collectors in the study by Matthys *et al.* (2009):

- Ideas: the ideas the patient has about a possible diagnosis, treatment or prognosis expressed in the consultation.
- Concerns: the concern the patient has about a possible diagnosis or therapy expressed in the consultation.
- Expectations: the expectation for a treatment, a diagnosis or a therapy expressed in the consultation.

If no ICPC-2 code seemed appropriate, it was labeled with ‘no coding possible’ (NCP).

To understand the coding process, it is important to keep the structure of ICPC-2 in mind (Figure 1).

ICPC is based on a simple bi-axial structure; it was designed to make paper-based collection of data possible. One axis refers to the 17 chapters mainly based on body systems, each with an α -code. The other axis includes seven ‘identical components’ with rubrics bearing a two-digit numeric code. Component 1 provides rubrics for symptoms and complaints (numbers 01-29). Component 7 is the diagnosis/disease component in each chapter (numbers 70-99). Components 1 and 7 in ICPC-2 function independently in each chapter and either can be used to code patient RFEs, presenting symptoms and diagnoses or problems that are managed. Components 2–6 (process of care and intervention codes) are common throughout all chapters, and each rubric is equally applied to any body system (WONCA, 2005; Verbeke *et al.*, 2006).

Some examples of ICPC-2 codes include R05 cough; T11 dehydration; R24 haemoptysis; A03 fever; P18 medication abuse; Z01 poverty/financial problem; Z06 unemployment problem; D92 diverticular disease; R74 upper respiratory infection, acute; S70 Herpes zoster; A72 chickenpox; P76 depressive disorder; -34 blood test; -44 preventive

Chapters																Components	
A	B	D	F	H	K	L	N	P	R	S	T	U	W	X	Y	Z	
																	1. Complaints and symptoms
																	2. Diagnostic, screening and preventive procedures
																	3. Medication, treatment, therapeutic procedures
																	4. Results
																	5. Administrative
																	6. Referrals and other reasons for encounter
																	7. Diagnoses/diseases

- | | | |
|---|--|---|
| A General and unspecified | L Musculoskeletal | U Urological |
| B Blood, blood-forming organs, and immune mechanism | N Neurological | W Pregnancy, child-bearing, family planning |
| D Digestive | P Psychological | X Female genital (X-chromosome) |
| F Eye | R Respiratory | Y Male genital (Y-chromosome) |
| H Ear (Hearing) | S Skin | Z Social problems |
| K Circulatory | T Endocrine, metabolic and nutritional | |

Figure 1 Bi-axial International Classification of Primary Care, version 2 structure

immunization/medications; and -67 referral to physician/specialist/clinic/hospital.

Also see the online supplementary material file for all ICPC-2 codes (WONCA).

Analysing ICE with a NCP label

The NCP labels were analysed separately in a qualitative way. Two researchers inductively and independently created other new categories. In a process of discussion and agreement, consensus was reached on new categories that allowed the classification of non-codable items (Lincoln and Guba, 1985).

Results

The involved patients had a mean age of 48.5 years (range 18–91 years). Slightly more patients were female (55.5%), and about one-third (35%) had completed higher education. More than half (57%) of the patients had consulted with a FP at least four times in the year prior to the registration day. Two-thirds (67%) consulted with a new problem, and 16% of the registrations were home visits.

ICE

During the 613 consultations, 672 ICE items were narratively registered. Figure 2 shows a summary of the results.

Of the 672 ICE items, 549 (81.7%) could be classified directly in ICPC-2, 34.2% were ideas,

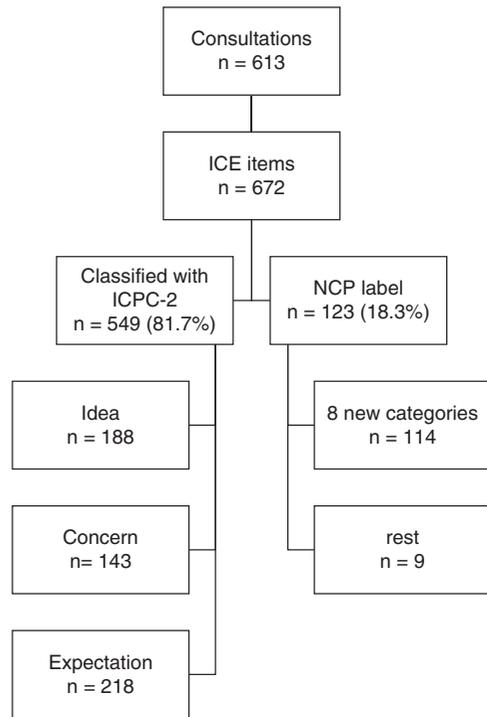


Figure 2 Summary of the results. ICPC-2 = International Classification of Primary Care, version 2; NPC = no coding possible.

26.0% were concerns and 39.7% expectations. Table 1 shows how the ICE codes are distributed in the ICPC-2 chapters and components.

Table 1 Distribution of ideas, concerns and expectations (ICE) in the international classification of primary care, version 2 (ICPC-2) components/chapters

ICE-class	Component 1 and 7 by chapter																				Sum	% of all ICE classified
	Component 2-6	A	B	D	F	H	K	L	N	P	R	S	T	U	W	X	Y	Z				
Ideas	n	37	1	19	2	2	11	26	4	15	34	10	1	8	4	5	2	7	188			
	%	19.7	0.5	10.1	1.1	1.1	5.9	13.8	2.1	8.0	18.1	5.3	0.5	4.3	2.1	2.7	1.1	3.7	34.2			
Concerns	n	36	2	10	0	0	16	14	7	4	18	6	4	5	1	6	1	13	143			
	%	25.2	1.4	7.0	0.0	0.0	11.2	9.8	4.9	2.8	12.6	4.2	2.8	3.5	0.7	4.2	0.7	9.1	26.0			
Expectations	n	218																	218			
	%	73	3	29	2	2	27	40	11	19	52	16	5	13	5	11	3	20	331	39.7		
Ideas+concerns	n	22.1	0.9	8.8	0.6	0.6	8.2	12.1	3.3	5.7	15.7	4.8	1.5	3.9	1.5	3.3	0.9	6.0	60.3			
	%																					

Of the 331 ideas and concerns classified by the ICPC-2 chapter, 22% were classified in the general and unspecified Chapter A, 15.7% in the Respiratory Chapter (R) and 12.1% in the Musculoskeletal Chapter (L), together accounting for about half of all the ideas and concerns that are classifiable in ICPC-2.

All expectations classified in ICPC-2 are within components 2–6, the process of care and intervention codes. No specific chapter was given to these codes as they are identical in every chapter.

About one-fifth (18.3% or 123 out of 672) of the registered ICE received a NCP label because they could not be coded directly with ICPC-2.

In total, 114 NCP-entries could be attributed to one of following eight new categories; four applied to concerns and four to expectations. None had to be created for ideas, suggesting that ICPC-2 covers this area sufficiently.

- Concern about the duration/time frame
- Concern about the evolution/severity
- Concern of being contagious or a danger to others
- Patient has no concern, but others do
- Expects a confirmation of something
- Expects a solution for the symptoms without specification of what it should be
- Expects a specific procedure
- Expects that something is not done

Remaining nine text labels were too non-specific to make any classification possible. Table 2 summarizes these findings and gives exemplary quotes.

Discussion

Summary

A total of 613 patient contacts resulted in 672 registered ICE, of which 81.7% could be coded directly with ICPC-2. The addition of eight new categories would allow classification of almost all the NCP-labeled entries.

Strength and limitations

This study is based on a relatively small set of data that was registered in one day in 36 practices. The sample is localized in the northern part of Flanders, Belgium. These are both limitations. Nevertheless, this is a first attempt to classify ICE

Table 2 Ideas, concerns and expectations (ICE) NCP, categories and examples

Category of NCP for ICE: n = 123 ICE was noted but not coded in ICPC-2		Reference example, quote
Concern about the duration/time frame	33	'When can I go back to school?', 'this lasting for more than ten days now...'
Concern about the evolution/severity	22	'Is this a normal evolution?', 'this is a serious problem, isn't it?'
Concern to be contagious or a danger to others	4	'Am I contagious for my wife, who is pregnant?'
Patient has no concern, but others do	2	'My parents are concerned about these symptoms, I am not.'
Expects a confirmation of something	12	'Can I take a higher dose of this medication'
Expects that something is not done	3	'I don't want a referral'
Expects a solution for the symptoms without specification what it should be	33	'I want to get rid of this hiccup'
Expects a specific procedure	5	'I want a tonsillectomy'
Text label of ICE written was too vague to classify it	9	

ICPC-2 = International Classification of Primary Care, version 2.

with ICPC-2 and gives directions in the development of ICPC to make it more person-focused.

Implication for research and practice

Our most important result is that most ICE can be coded with ICPC-2. Only eight new categories have to be added to ICPC-2 to capture all ICE. ICPC-2 has already systematically integrated the possibility of coding 'fear of.' This always concerns a specific disease or a group of diseases, but does not take the fear of severity or the duration of a symptom into account; therefore, it is not surprising that we found new categories on that subject. All expectations that could be coded with ICPC-2 are requests to do something such as a blood test, a prescription or a referral. The four new categories make it possible to capture the persons' expectations in a broader sense.

In a number of morbidity registrations in primary care, the RFE is already registered (Soler *et al.*, 2012; Britt *et al.*, 2014). The incorporation of the RFE in the analysis of the outcome of the care is important (Hartman *et al.*, 2011). Classifying additional ICE may lead to further clarification and improved understanding of the RFE (Stewart *et al.*, 2000; Hartman *et al.*, 2011); adding essential information for clinical use in the EMR brings the needs of persons to a population level for scientific analysis in order to stimulate change toward a medical model where 'disease' is no longer the primary focus (Soler and Okkes, 2012). It might even be helpful in bridging the gap between the patients' narrative and the FPs' medical discourse (Sheaff *et al.*, 2017).

Conclusion

Classifying ICE with ICPC-2 is feasible; only eight categories must be added to capture all ICE. This is an important step forward to develop ICPC in a person-focused care context. We will continue our research to make personal needs and preferences available for both clinical care and research purposes and to develop ways to register and classify it in primary care.

Acknowledgments

Diego Schrans, Pauline Boeckstaens and Thomas Kühlein are members of the Wonca International Classification Committee (WICC). The WICC played an important role in the development of this article because the idea arose during a working meeting in Amsterdam. We would also like to thank the GP trainees and teaching practices for collecting the data. Many thanks to JM for providing the data for further analysing.

Financial Support

No external funding was received.

Conflicts of Interest

None.

Ethical Standards

The study was approved by the ethics committee from the University Hospital Ghent (reg. number: B670201317041).

Primary Health Care Research & Development 2018; **19**: 1–6

Supplementary material

To view supplementary material for this article, please visit <http://www.kith.no/upload/2705/icpc-2-english.pdf>

References

- Bertakis, K.D.** and **Azari, R.** 2011: Patient-centered care is associated with decreased health care utilization. *The Journal of the American Board of Family Medicine* 24, 229–39.
- Britt, H., Miller, G.C., Henderson, J., Bayram, C., Valenti, L., Harrison, C., Pan, Y., Wong, C., Charles, J., Chambers, T., Gordon, J.** and **Pollack, A.J.** 2014. A decade of Australian general practice activity 2004–05 to 2013–14. Sydney: Sydney University Press.
- Cassell, E.** 2004. *The nature of suffering and the goals of medicine*. New York: Oxford University Press.
- Cassell, E.J.** 1985. Talking with patients: clinical technique. Cambridge: MIT Press.
- Deveugele, M., Derese, A., Maeschalck, S.D., Willems, S., Driel, M.V.** and **Maeseneer, J.D.** 2005: Teaching communication skills to medical students, a challenge in the curriculum? *Patient Education and Counseling* 58, 265–70.
- Di Blasi, Z., Harkness, E., Ernst, E., Georgiou, A.** and **Kleijnen, J.** 2001: Influence of context effects on health outcomes: a systematic review. *Lancet* 357, 757–62.
- EURACT** 2011. *The European definition of general practice/family medicines*. 2011 edition. Barcelona: WONCA Europe.
- Green, L.A., Fryer, G.E., Yawn, B.P., Lanier, D.** and **Dovey, S.M.** 2001: The ecology of medical care revisited. *New England Journal of Medicine* 344, 2021–25.
- Hartman, T.C.O., Van Ravesteijn, H., Lucassen, P., Van Boven, K., Van Weel-Baumgarten, E.** and **Van Weel, C.** 2011: Why the ‘reason for encounter’ should be incorporated in the analysis of outcome of care. *The British Journal of General Practice* 61, e839–841.
- Lincoln, Y.** and **Guba, E.** 1985. *Naturalistic inquiry*. Newbury Park: Newbury Park Sage Publications.
- Matthys, J., Elwyn, G., Van Nuland, M., Van Maele, G., De Sutter, A., De Meyere, M.** and **Deveugele, M.** 2009: Patients’ ideas, concerns, and expectations (ICE) in general practice: impact on prescribing. *The British Journal of General Practice* 59, 29–36.
- Sackett, D.L.** 1995: Evidence-based medicine, in its place. *The Lancet* 346, 785.
- Schrans, D., Avonts, D., Christiaens, T., Willems, S., De Smet, K., Van Boven, K., Boeckxstaens, P.** and **Kühlein, T.** 2016: The search for person-related information in general practice: a qualitative study. *Family Practice* 33, 95–99.
- Sheaff, R., Halliday, J., Byng, R., Ovretveit, J., Exworthy, M., Peckham, S.** and **Asthana, S.** 2017: Bridging the discursive gap between lay and medical discourse in care coordination. *Sociology of Health Illness*, pp. 1–16. doi: 10.1111/1467-9566.12553.
- Soler, J.K.** and **Okkes, I.** 2012: Reasons for encounter and symptom diagnoses: a superior description of patients’ problems in contrast to medically unexplained symptoms (MUS). *Family Practice* 29, 272–82.
- Soler, J.K., Okkes, I., Oskam, S., Van Boven, K., Zivotic, P., Jevtic, M., Dobbs, F.** and **Lamberts, H.** 2012: An international comparative family medicine study of the Transition Project data from the Netherlands, Malta and Serbia. Is family medicine an international discipline? Comparing incidence and prevalence rates of reasons for encounter and diagnostic titles of episodes of care across populations. *Family Practice* 29, 283–98.
- Starfield, B.** 2009: Primary care and equity in health: the importance to effectiveness and equity of responsiveness to peoples’ needs. *Humanity & Society* 33, 56–73.
- Starfield, B.** 2011: Is patient-centered care the same as person-focused care? *The Permanente Journal* 15, 63–69.
- Stewart, M.** 2003. *Patient-centered medicine transforming the clinical method*. London: Radcliffe.
- Stewart, M., Brown, J.B., Donner, A., McWhinney, I.R., Oates, J., Weston, W.W.** and **Jordan, J.** 2000: The impact of patient-centered care on outcomes. *The Journal of Family Practice* 49, 796–804.
- Stewart, M.** and **Ryan, B.** 2015: Ecology of health care in Canada. *Canadian Family Physician* 61, 449–53.
- Stewart, M., Ryan, B.L.** and **Bodea, C.** 2011: Is patient-centred care associated with lower diagnostic costs? *Healthcare Policy* 6, 27–31.
- Verbeke, M., Schrans, D., Deroose, S.** and **De Maeseneer, J.** 2006: The International Classification of Primary Care (ICPC-2): an essential tool in the EPR of the GP. *Studies in Health Technology and Informatics* 124, 809–14.
- Weiner, S.J., Schwartz, A., Sharma, G., Binns-Calvey, A., Ashley, N., Kelly, B., Dayal, A., Patel, S., Weaver, F.M.** and **Harris, I.** 2013: Patient-centered decision making and health care outcomes: an observational study. *Annals of Internal Medicine* 158, 573–79.
- White, K.L., Williams, T.F.** and **Greenberg, B.G.** 1961: The ecology of medical care. *New England Journal of Medicine* 265, 885–92.
- WONCA** 2005. *ICPC-2-R: International classification of primary care*. Oxford: Oxford University Press.
- WONCA.** ICPC-2 (two-pager English). Retrieved January 2017 from <http://www.kith.no/upload/2705/icpc-2-english.pdf>.