Patient satisfaction with point-of-care high-sensitivity troponin testing in patients presenting to the emergency department with chest pain

Amirali Barzegar Amin, KU Leuven

Promotor: Prof. Dr. Jan Verbakel, Academisch Centrum voor Huisartsgeneeskunde, KU Leuven

Co-promotor: Tine De Burghgraeve, Academisch Centrum voor Huisartsgeneeskunde, KU Leuven

Daily supervisor: Dr. David Bos, Academisch Centrum voor Huisartsgeneeskunde, KU Leuven

Master of Family Medicine

Masterproef Huisartsgeneeskunde
Academiejaar: 2025-2026

©Copyright by KU Leuven

Deze masterproef is een examendocument dat niet werd gecorrigeerd voor eventueel vastgestelde fouten. Met uitzondering van het door de wet toegestaan gebruik, is zonder voorafgaande schriftelijke toestemming van de auteur(s) het overnemen, kopiëren, gebruiken of realiseren van deze uitgave of gedeelten ervan verboden. Voor aanvragen tot of informatie in verband met het overnemen en/of gebruik van gedeelten uit deze publicatie, wendt u zich tot de KU Leuven, Faculteit Geneeskunde, Campus Gasthuisberg O&N2, Herestraat 49 – bus 400, 3000 Leuven.

Voorafgaande schriftelijke toestemming van de promotor(en) is eveneens vereist voor het aanwenden van de in dit afstudeerwerk beschreven (originele) methoden, producten en programma's voor commercieel nut en voor de inzending van deze publicatie ter deelname aan wetenschappelijke prijzen of wedstrijden

Acknowledgments

I wish to thank my promotor Prof. Dr. Jan Verbakel, co-promotor Tine De Burghgraeve and daily supervisor Dr. David Bos for their guidance, support and valuable feedback throughout the writing process of this master's thesis.

Abstract

Background/objectives: This study aims to assess patient satisfaction with point-of-care (POC) high-sensitivity cardiac troponin (hs-cTn) testing in patients presenting to the emergency department (ED) with acute chest pain.

Methods: Eligible patients were randomized into either a point-of-care testing (POCT) group or a usual care group. Patient satisfaction was measured through the Short Assessment of Patient Satisfaction (SAPS) questionnaire for all participants (total score range 0 - 28), and an additional POCT-specific 5-point Likert scale satisfaction questionnaire for the POCT group. With both questionnaires, patients were given the option to provide additional open-text remarks.

Results: The study included 258 patients of which 129 were randomized in the POCT group, and 129 in the usual care group. Mean age was 54.2 years (SD 15.8). Patients were overall satisfied with the care they received in the ED, with a mean satisfaction score as measured by the SAPS tool of 22.36 (SD 4.05). There was also a generally positive satisfaction with hs-cTn POCT, with a mean total score of 3.90 (SD 1.02) on the POCT-specific questionnaire. Many of the open-text remarks were related to interpersonal aspects of care.

Conclusion: Patients presenting to the ED with chest pain showed to be overall satisfied with the use of hs-cTn POCT, as well as with ED care in general. Interpersonal communication appears to be an important determinant of patient satisfaction.

Samenvatting

Achtergrond/doelstellingen: Deze studie heeft als doel de patiënttevredenheid met point-of-care (POC)-bepaling van hoogsensitieve cardiale troponine (hs-cTn) na te gaan in patiënten die zich presenteren op de spoedgevallendienst met acute pijn op de borst.

Methoden: Patiënten die in aanmerking kwamen voor deelname werden gerandomiseerd in ofwel een "point-of-care testing" (POCT) groep, ofwel een gebruikelijke-zorg-groep. Patiënttevredenheid werd voor alle deelnemers gemeten met behulp van de "Short Assessment of Patient Satisfaction (SAPS) questionnaire" (totale scorebereik 0 - 28); bijkomend werd een POCT-specifieke 5-punts Likert-schaal tevredenheidsvragenlijst gebruikt in de POCT-groep. In beide vragenlijsten kregen patiënten de mogelijkheid om vrije-tekstopmerkingen toe te voegen.

Resultaten: De studie includeerde 258 patiënten waarvan 129 werden gerandomiseerd in de POCT-groep, en 129 in de gebruikelijke-zorg-groep. De gemiddelde leeftijd was 54.2 jaar (SD 15.8). Patiënten waren over het algemeen tevreden met de zorg die ze ontvingen op de spoedgevallendienst, met een gemiddelde tevredenheidsscore van 22.36 (SD 4.05) op de SAPS-vragenlijst. Er was ook een algemeen positieve tevredenheid met hs-cTn POCT, met op de POCT-specifieke vragenlijst een gemiddelde totaalscore van 3.90 (SD 1.02). Veel van de vrije-tekstopmerkingen waren gerelateerd aan interpersoonlijke aspecten van zorgverlening.

Conclusie: Patiënten die zich presenteerden op de spoedgevallendienst met pijn op de borst bleken over het algemeen tevreden te zijn met het gebruik van hs-cTn POCT, alsook met de zorg op de spoedgevallendienst in het algemeen. Interpersoonlijke communicatie lijkt een belangrijke determinant van patiënttevredenheid te zijn.

Introduction

Chest pain is a common presenting complaint at the emergency department (ED), accounting for 9-12% of visits, with 12-13% of cases ultimately due to acute coronary syndrome (ACS). [1-4] In primary care, chest pain accounts for 0.7-2.7% of all general practitioner (GP) visits. Although most cases are benign, 1.5-10% of cases may be due to a potentially life-threatening underlying cause, such as ACS.[5]

ACS encompasses a spectrum of clinical conditions ranging from unstable angina (UA) to non-ST-segment elevation myocardial infarction (NSTEMI) and ST-segment elevation myocardial infarction (STEMI).[6,7] UA is defined by transient myocardial ischemia at rest or on minimal exertion in the absence of acute myocardial necrosis as indicated by the absence of acute elevations in cardiac troponin (cTn). In contrast, more prolonged or severe myocardial ischemia results in myocardial infarction (MI) and is accompanied by elevations in cTn. NSTEMI may result from a partially occluded coronary artery leading to subendocardial ischemia, whereas STEMI is typically characterized by a complete coronary artery occlusion resulting in transmural myocardial ischemia and infarction.[7,8]

In patients with suspected ACS, medical evaluation should include history taking, physical examination, ECG acquisition and interpretation, and assessment of cTn. STEMI can be readily diagnosed by ECG, and urgent reperfusion therapy should not be delayed by pending biomarker results. [8]

Patients with NSTEMI may exhibit ECG changes other than ST-elevation, or the ECG may be normal; the diagnosis relies on a typical rise and fall in cTn levels above the 99th percentile of healthy individuals.

Compared to conventional troponin assays, contemporary high-sensitivity cardiac troponin (hs-cTn) assays detect low concentrations of cTn with improved analytical precision, and allow a higher sensitivity and diagnostic accuracy for the detection of MI at presentation.[7,9] In MI, an increased hs-cTn level can be detected usually within 1h after symptom onset, and it usually remains increased for several days.[7] The ESC 2023 guidelines recommend a two-test strategy, the 0h/1h or 0h/2h algorithm, for rapid 'rule-in' and 'rule-out' of MI. These algorithms have shown a negative predictive value (NPV) of >99% and a positive predictive value (PPV) of approximately 70-75%. According to ESC, a single sample rule-out can be used in patients with very low initial hs-cTn when chest pain onset was >3h prior to measurement; recent studies have shown a >2h threshold to also be a safe cut-off.[7,9]

Central lab hs-cTn testing is accompanied by lengthy turnaround times from blood sampling to reporting due to sample transportation, processing, analysis and reporting by central laboratories.[10] In the ED, this can delay early decision making and potential discharge of low-risk patients.[11] As only a minority of patients presenting with chest pain ultimately have ACS, rapid identification and rule-out of low-risk patients is important to reduce overcrowding and delays in care.[12,13] Point-of-care (POC) hs-cTn assays have been introduced in recent years, which enable measurement directly at or near the patient.[14] This can significantly reduce the turnaround time from blood sampling to reporting.[10] The Siemens Atellica VTLi is one of such POC hs-cTn devices; it has shown a turnaround time of <8 min, and demonstrated comparable diagnostic accuracy to central lab assays.[15]

Beyond the ED, POC hs-cTn testing may be useful in prehospital emergency care, where it could avoid unnecessary hospital transfer or support pre-hospital triage.[10] Furthermore, POC hs-cTn testing may have important value in primary care. Current options for GPs to rule out ACS are limited due to unacceptable turnaround times for troponin testing, and ECG alone is not sufficient for rule-out. Therefore, the current referral rate by GPs for patients with chest pain is high.[16] POC hs-cTn testing could help GPs in the diagnosis and triage of patients with suspected ACS and potentially avoid unnecessary referral.

When introducing POC hs-cTn testing in clinical settings, such as in the ED, patient satisfaction with this test is an essential factor to consider, as it helps determine whether this testing approach meets patients' needs.[17] POC hs-cTn testing can reduce turnaround time, provide rapid results, allow faster management, and help avoid unnecessary hospital referral or transfer, all of which may contribute to an improved patient experience. The aim of the current study is to assess patient satisfaction with POC hs-cTn testing in patients presenting to the ED with chest pain.

Methods

Study design and objectives

This study aims to assess patient satisfaction with POC hs-cTn testing in the ED, and is conducted as a sub-study of a prospective, single-centre randomized controlled trial (RCT): the "Point-of-Care high-sensitivity troponin testing in the Emergency department to Rule in or out Myocardial Infarction for Timely discharge (CERMIT)" trial, which will compare POC high-sensitivity cardiac troponin I (hs-cTnI) testing with the usual central laboratory high-sensitivity cardiac troponin T (hs-cTnT) testing, with the primary and secondary endpoint being the ED length of stay and 30-day major adverse cardiac events (MACE) respectively. Eligible patients will be randomized into either the point-of-care testing (POCT) group or the usual care group. Patients in the POCT group will undergo a clinical testing strategy where the first 0h troponin measurement will be performed using a POC hs-cTnI test device. For patients in the usual care group the usual central laboratory hs-cTnT testing strategy will be used.

The POC hs-cTnI measurements will be performed using the Atellica VTLi high-sensitivity cardiac troponin I assay (Siemens Healthineers, Erlangen, Germany). The device has demonstrated good analytical performance and diagnostic accuracy for MI comparable to central laboratory hs-cTn assays.[15, 18-22]

Overall patient satisfaction with care will be assessed in both the POCT group and the usual care group. In addition, patient satisfaction with the POC hs-cTnI testing specifically, will be assessed in the POCT group.

The study protocol was approved by the Ethics Committee Research UZ / KU Leuven on 12 February 2025 under reference S68277. All participants received a clear explanation of the objectives and the research methodology, and they or their legally authorized representative were required to provide written informed consent before starting the study measurement.

Study population

Adult patients younger than 75 years of age presenting at the UZ Leuven ED with chest pain or a chest pain-equivalent symptom suspect of ACS were considered eligible for participation in the study. Symptoms must have (had) a minimum duration of 15 minutes, and the current, ongoing episode of symptoms must have started within the past 24 hours.

Exclusion criteria were: inability to provide written informed consent; age < 18 years or ≥ 75 years; chest pain or equivalent symptom duration shorter than 15 minutes, or onset of the current ongoing episode of symptoms more than 24 hours ago; clinically unstable, STEMI or high-risk NSTEMI, requiring immediate treatment; recent chest trauma; transfer from other hospital; any disorder, which in the investigator's opinion might jeopardise participant's safety or compliance with the clinical interventional study plan of the CERMIT trial.

Assessment of patient satisfaction

Patient satisfaction with care was assessed in both the POCT and usual care group using the Short Assessment of Patient Satisfaction (SAPS) questionnaire (**Appendix S1**).[23] The SAPS is a valid, short and reliable patient satisfaction questionnaire which consists of seven items for assessing the core domains of patient satisfaction, including: treatment satisfaction, explanation of treatment results, clinician care, participation in medical decision-making, respect by the clinician, time with the clinician, and satisfaction with hospital/clinic care. Each domain has five response options, scored from 0 to 4, resulting in a total possible score of 28. The total scores can be interpreted as follows: 0 to 10 = very dissatisfied, 11 to 18 = dissatisfied, 19 to 26 = satisfied, 27 to 28 = very satisfied.[23,24] Additionally, in modification to the original SAPS, participants were given the option to provide additional remarks in an open text field with every question as well as at the end of the questionnaire. Permission from the instrument authors was obtained for use of the SAPS.

Furthermore, a POCT-specific satisfaction questionnaire was used exclusively in the POCT group, to specifically assess patient satisfaction towards the hs-cTnI POC test. A 5-point Likert scale questionnaire was used for this purpose, including five statements which addressed five categories (**Appendix S2**). The statements were derived or adapted from similar studies.[25-27] Here as well, patients were given the option to provide additional comments with every question as well as at the end of the questionnaire.

Both questionnaires were sent out one week after the patients' ED visit, through emails containing a link to the Castor EDC platform, where patients can fill in the questionnaire(s) anonymously. Alternatively, patients could receive a paper version of the questionnaires during their ED visit and return it by post if they preferred. Both questionnaires were available in English, as well as in a translated Dutch and French version. A reminder email was sent one week after the initial email, for patients who did not complete the questionnaire(s). If no answer was received after the reminder email, the participant was contacted by phone up to 20 days after the initial ED visit.

The demographic items age and gender, as well as relevant clinical characteristics were also collected.

Data analysis

Data management was performed using the Castor EDC platform and Microsoft Excel (Microsoft Corporation, WA). Means and standard deviations (SD) were calculated using IBM SPSS Statistics (version 30; IBM, NY). Internal consistency of the questionnaires was assessed using Cronbach's alpha in SPSS. Cronbach's alpha is expressed as a number between 0 and 1. Internal consistency describes the extent to which all the items in the questionnaire measure the same overarching concept and reflects the interrelatedness of the items within the questionnaire.[28] Values ≥ 0.70 are generally considered acceptable.[29]

Open-ended additional remarks provided by participants in both questionnaires were manually analysed by one researcher (ABA) using thematic analysis.[30] The method was informed by Cunningham et al.[31] For the SAPS questionnaire, thematic analysis was conducted using an initial deductive ('top down') coding framework adapted from thematic domains identified by Cunningham et al. The coding framework was then iteratively refined during the coding process.[31] All remarks were first categorised as positive, negative, neutral, or mixed (containing both positive and negative elements). The comments were then further assigned to one or more themes (usually one to two themes, exceptionally three to four). Comments similar to "no additional remarks" were excluded from analysis. Neutral remarks were not further coded into themes. For the POCT questionnaire an inductive ('bottom up') approach was used, with emergence of broad categories mostly tailored to patients' perceptions

of the POC test. Comments related to patients being unaware that POCT was used were excluded from analysis. Quotes provided as example in the results section were translated to English where necessary.

Results

Data was collected between **8 July 2025** and **24 April 2026**. In total **258** patients were included, of which **129** were randomized in the POCT group, and **129** in the usual care group. Mean age was **54.2** years (SD **15.8**, range **18 - 75**), and **174** (**67.4%**) of the participants were male. More patient characteristics are shown in Table 1. **Four** duplicate survey submissions were identified; in each case, only the most recent submission was retained.

Table 1. Overview of patient characteristics.

Variables (N = 258)	**Values**
Mean age, years (SD, range)	54.2 (SD 15.8, range 18 - 75)
Male gender	174 (67.4%)
Mean weight, kg (SD)*	80.5 (SD 16.9)
Mean BMI, kg/m² (SD)*	26.6 (SD 4.7)
BMI ≥ 30 kg/m²	50 (19.4%)
Hypertension or taking antihypertensives	109 (42.2%)
Diabetes mellitus	35 (13.6%)
Hypercholesterolemia or taking cholesterol medication	125 (48.4%)
Current smoker	63 (24.4%)
Positive family history of MI*	57 (22.1%)
History of coronary disease or interventions (PCI, CABG)	59 (22.9%)
History of stroke/TIA and/or PAD*	25 (9.7%)
CKD*	22 (8.5%)
CHF*	16 (6.2%)
Cardiomyopathy*	2 (0.8%)

Values presented as n (%) unless stated otherwise.
PCI, percutaneous coronary intervention; CABG, coronary artery bypass grafting; TIA, transient ischaemic attack; PAD, peripheral artery disease; CKD, chronic kidney disease; CHF, chronic heart failure.
* Missing data (number of participants): Weight (5), BMI (6), positive family history of MI (2), history of coronary disease or interventions (1), history of stroke/TIA and/or PAD (1), CKD (4), CHF (4), cardiomyopathy (4).

Out of all included patients, **183** (**70.9%**) completed the SAPS questionnaire. Mean score for patients' satisfaction with care in the ED as measured by the SAPS tool was **22.36** (SD **4.05**). In terms of SAPS categorical ratings, **28** (**15.3%**) were very satisfied, **127** (**69.4%**) were satisfied, **25** (**13.7%**) were dissatisfied, and **3** (**1.6%**) were very dissatisfied. Overall, **84.7%** of patients indicated that they were satisfied or very satisfied with the care they received in the ED. A summary of the mean scores and SDs for each SAPS item is presented in Table 2.

Table 2. Summary of the SAPS questionnaire results.

SAPS question	**Results, mean (SD)**
1. How satisfied are you with the effect of your treatment/care?	**3.36 (0.72)**
2. How satisfied are you with the explanations the doctor/other health professional has given you about the results of your treatment/care?	**3.26 (0.79)**
3. The doctor/other health professional was very careful to check everything when examining you.	**3.32 (0.80)**
4. How satisfied were you with the choices you had in decisions affecting your health care?	**3.17 (0.83)**
5. How much of the time did you feel respected by the doctor/other health professional?	**3.55 (0.76)**
6. The time you had with the doctor/other health professional was too short.	**2.31 (1.04)**
7. Are you satisfied with the care you received in the hospital/clinic?	**3.41 (0.74)**
Total satisfaction score:	**22.36 (4.05)**

Total score 0 to 10 = very dissatisfied, 11 to 18 = dissatisfied, 19 to 26 = satisfied, 27 to 28 = very satisfied.

Question six "the time you had with the doctor/other health professional was too short" had a noticeably lower score, **2.31 (SD 1.04)**, compared to the six other SAPS-questions which were all close to each other, ranging between **3.17** and **3.55**. Examples of negative free-text remarks given at this question are: "in the 8 hours I spent there, the doctor was with me a maximum of 5 minutes split between 3 visits", "they barely had time", "[the doctor/other health professional] took too little time to explain me the necessary things".

Of the **129** patients included in the POCT-group, **95 (73.6%)** completed the POCT-specific satisfaction questionnaire. Collective responses on the 5-point Likert scale show a mean score of **3.90 (SD 1.02)**.

For each domain the mean score and SD is presented in Table 3. A noticeable lower score was given to statement one regarding the collection process ("I would rather have blood taken by a finger prick than by needle in my arm"), **3.02 (SD 1.08)** compared to the mean scores of the other statements. Statement two had a mean score of **3.80 (SD 0.93)**, while the mean scores of statements three to five were close to each other, ranging from **4.16 to 4.31**.

Reliability was assessed for both questionnaires. For the SAPS questionnaire, Cronbach's alpha was **0.84**, indicating high internal consistency; for the POCT-specific satisfaction questionnaire, this value was **0.64**, indicating moderate internal consistency.

Table 3. Summary of High-sensitivity cardiac troponin I point-of-care testing (hs-cTnI POCT) satisfaction questionnaire results.

Area	**Statements**	**Results, mean (SD)**
Collection process	I would rather have blood taken by a finger prick than by needle in my arm.	**3.02 (1.08)**
Confidence in the process	I feel that point-of-care testing is at least as hygienic as testing via the laboratory.	**3.80 (0.93)**
Confidence in the results	I have confidence in the information given by my physician regarding my cardiac point-of-care test result.	**4.16 (0.84)**
Convenience	The availability of point-of-care cardiac testing within the emergency department saves time compared to sending samples to the central laboratory.	**4.20 (0.87)**
Disease management	Having immediate feedback of the test result was important as it allowed/would allow more prompt communication about my cardiac condition.	**4.31 (0.80)**

Likert scale key: 1. strongly disagree, 2. disagree, 3. neutral, 4. agree, 5. strongly agree

In total, **191** additional remarks from the SAPS questionnaire were included in analysis, of which **89 (46.6%)** positive, **71 (37.2%)** negative, **18 (9.4%)** neutral, and **13 (6.8%)** containing both positive and negative elements. Table 4 shows an overview of the recurring themes and an example quote for each theme. The positive theme that recurred the most **(57 comments)** was "good support, communication, and/or information". The most recurring negative theme **(51 comments)** was "not feeling that individual needs were met (e.g. poor communication, lack of information, poor emotional support and responsiveness)".

Table 4. Summary of the recurring themes in free-text remarks in the SAPS questionnaire.

	Number of comments	Example quote
Positive themes		
Good support, communication, and/or information	57	"We were able to ask everything and each time received good explanations in a calm manner. Very empathetic staff."
Good clinical care/trust in the system	27	"Thorough examination took place."
Efficient processes/timely care	18	"I received the necessary care immediately."
Generally positive experience	10	"Everything was good."
Negative themes		
Not feeling that individual needs were met (e.g. poor communication, lack of information, poor emotional support and responsiveness)	51	"They didn't give me enough information about what I have."
Not feeling confident or secure within the system (e.g. poor care, inconsistent or inadequate information)	19	"In the physician's decision, he had mentioned an incorrect point. My mother and my maternal grandfather are/were heart patients, yet the physician stated that there were no heart patients in the family. This gives an incorrect impression for future reference. Yet, I had already mentioned this in the emergency department and on the ward."
Waits and delays	18	"We waited more than 3 hours for blood results after being told it would take 45 minutes."
Unsuitable or uncomfortable environment	9	"Receiving feedback in the hospital corridor is not ideal."

All quotes translated to English where necessary.

Regarding the POCT questionnaire, **38** additional remarks were included. An overview of recurring themes is presented in Table 5. Of these remarks, **22 (57.9%)** were either favouring POCT, generally positive comments or indifferent between POCT and the conventional method. Only **three** remarks **(7.9%)** were explicitly stating they preferred the conventional method over POCT (e.g. "better normal blood exam"), however all three were placed at statement 1 of the questionnaire about the collection process ("I would rather have blood taken by a finger prick than by needle in my arm"). **Thirteen** remarks **(34.2%)** were negative comments either due to poor communication **(12, 31.6%)** or long waiting times **(1, 2.6%)**.

Table 5. Summary of the recurring themes in the included free-text remarks of the POCT questionnaire.

	Number of comments	**Example quote**
Favours POCT	11	"This is much faster and technically easier to perform."
Generally positive	2	"All tests were carried out very carefully."
Indifference between POCT/conventional method	9	"Personally, it does not make much difference to me."
Favours conventional method	3	"I was given an IV line in my arm, which seems more practical to me, as a connector can be attached to close it off. This way it can be used later again if further blood tests are needed, or for easy administration of medication."
Poor communication	12	"I didn't receive any result."
Long waiting times	1	"It was still a half-day wait."

All quotes translated to English where necessary.

Discussion

Summary of findings

In the studied population of people presenting at the UZ Leuven ED with chest pain, patients showed to be overall satisfied with the care they received based on the results of the SAPS questionnaire. The mean satisfaction score was **22.36 (SD 4.05)** which corresponds to 'satisfied', and **84.7%** of patients indicated they were either satisfied or very satisfied.

Looking at the individual questions of the questionnaire, a notable lower mean score could be observed on the question about the time patients had with the doctor/other health professional **(2.31 [SD 1.04])**, compared to the mean scores of the other six questions which were all relatively close to each other ranging from **3.17** to **3.55**. Furthermore, several negative open-text remarks stated the time with the doctor was too short.

Of the **191** additional remarks provided in the SAPS questionnaire, slightly more positive **(112)** than negative themes **(97)** could be identified **(ratio 1.15:1)**. The most recurring subject was related to interpersonal aspects of care, such as communication, information provision and emotional support (**57** positive, **51** negative). Another **27** positive and **19** negative statements were related to the clinical care or confidence in the system. Equally **18** positive and negative comments were related to efficiency or waiting times. Another **10** statements were generally positive, and finally **nine** negative statements were related to the environment being unsuitable or uncomfortable.

The 5-point Likert-scale POCT questionnaire shows a mean total score of **3.90 (SD 1.02)**, indicating a generally positive satisfaction with hs-cTn POCT. Comparing the individual statements within the questionnaire, a notable lower mean score is to be observed on the first statement **(3.02 [SD 1.08])**,

which is related to the collection process (finger prick vs needle in arm); three open-text remarks noted for statement 1 that they preferred the conventional blood sampling method. This was followed by statement 2, regarding patients' perception of hygiene of the test, where the mean score was **3.80 (SD 0.93)**, which is almost one point higher. Statements 3-5 regarding confidence in the results, convenience and disease management all three had similar scores corresponding to slightly above 'agree', respectively **4.16 (SD 0.84)**, **4.20 (SD 0.87)** and **4.31 (SD 0.80)**.

More than half of the additional remarks included from the POCT questionnaire **(57.9%)** were either favouring POCT, generally positive comments or indifferent between POCT and the conventional method. Additionally, 12 negative remarks **(31.6%)** were explicitly related to poor communication, and **one** was about long waiting times **(2.6%)**.

Interpretation

Interpersonal communication emerges as an important determinant of patient experience, influencing both general satisfaction with care in the ED and satisfaction with the POCT. Idahor et al. found that effective communication, as well as positive interpersonal interaction, both of which make patients feel involved in the decisions regarding their care, can significantly make patient satisfaction in the ED increase. Effective communication includes informing patients about the ED's processes, expected waiting times, and giving clear explanations regarding patients' clinical findings and management plan. Positive interpersonal skills include active listening, open body language, and using an empathetic approach.[32]

Moreover, Idahor et al. reported that patient satisfaction correlates more with perceived waiting times than the actual duration of waiting. When patients are kept informed about expected waiting times and have positive interactions with ED personnel, they care less about the actual waiting times.[32] This further highlights the importance of effective communication. The SAPS questionnaire used in the current study does not explicitly assess waiting times, however there was a fair number of negative open-text remarks concerning this. Furthermore, the relatively lower satisfaction score on the question about the duration of time patients had with the physician could perhaps indicate that patients perceive the time with the doctor/health professional as too brief relative to longer waiting periods.

Kurhayati et al. reported on possible causes associated with a prolonged length of stay in the ED, and divided them into five categories: 1. Patient characteristics such as older age, male gender, high comorbidity and certain specific medical conditions; 2. time and environmental factors such as nighttime, weekends and winter months, which can be accompanied with more limited staff availability, increased caseloads and logistical challenges; 3. hospital and healthcare system factors, such as the size and location of the hospital, as well as factors such as high patient-to-doctor ratios; 4. diagnostic and treatment processes; 5. patient arrival mode.[33]

Furthermore, opinions seem to vary in regard to the POCT collection process, looking at some open-text remarks indicating preference for a regular blood exam, as well as the mean satisfaction score on that specific statement which corresponds to 'neutral'.

Comparison with existing literature

The systematic review by Sonis et al. assessed for factors contributing to patient experience in the ED, and identified factors related to communication, waiting times, and staff empathy and compassion to be the most common determinants.[34] The findings of the open-text remarks assessment in our study are in line with their findings. Pines et al. found in their retrospective cohort study that longer ED waiting times and crowding were associated with a lower likelihood of patients to recommend the ED

to others. In addition, hallway placement in the ED and long periods of boarding after admission were associated not only with lower ED satisfaction, but also a lower likelihood of recommending the hospital to others, lower overall assessment of the hospital care and lower assessment of staff coordination for the entire hospitalisation.[35] The retrospective analysis of Nyce et al. showed a significant association between longer ED waiting times and worse patient experience in discharged ED-patients and admitted patients with short length of stay, with door-to-doctor time having the most important impact.[36]

The preliminary report by Pickering et al. showed that using the hs-cTnI POCT device Atellica VTLi within a clinical pathway in patients presenting to the ED with possible acute myocardial infarction (AMI) resulted in a safe reduction in ED length of stay, with no difference in AMI identification at index attendance and no difference in follow-up events within 30 days. The mean reduction in length of stay was 32 minutes, which represented 21.4 fewer daily patient-hours. Furthermore, turnaround time from blood draw to posting of the results was reduced by a mean of 59.3 minutes.[11] Meek et al. found that for patients discharged after requiring only a single baseline laboratory hs-cTnI measurement, use of POC hs-cTnI testing (with Atellica VTLi), assuming a fixed 10 minute POC turnaround time from collection to result availability (2 minutes preparation time and 8 minutes test processing), could result in a mean potential reduction in length of stay of 43 minutes per patient.[37] These findings suggest that hs-cTn POCT may contribute to improved ED efficiency, could influence patients' perception of waiting times and may potentially improve overall patient satisfaction.

In primary care, Laurence et al. assessed patient satisfaction with POCT for either HbA1c, microalbumin, lipids or INR, and found higher satisfaction levels with POCT compared to the laboratory method, providing some evidence that POCT in general practice setting is acceptable for patients.[25]

Strengths and limitations

To our knowledge, this was the first study to assess patient satisfaction with hs-cTn POCT in patients presenting to the ED with chest pain. Strengths of this study were that data on patient satisfaction was collected prospectively, and there was an adequate response rate. The SAPS questionnaire used in this study to assess general satisfaction with care in the ED, is a valid survey instrument.[23,24] The current study also added the option for patients to provide open-text remarks which allowed further insight in areas of (dis)satisfaction.

Limitations were that despite the relatively short interval between the ED visit and receival of the questionnaires, the results could possibly include recall bias. Additionally, assessment of the open-text remarks included subjective decisions and was done by only one researcher which could include bias.

Clinical implications and impact on further research

POC hs-cTn testing can improve ED efficiency and enable either earlier intervention when necessary or earlier rule-out of low-risk patients.[22] The overall high satisfaction levels with hs-cTn POCT observed in this study provide some evidence that the use of POC hs-cTn testing in the ED is acceptable for patients.

The results also suggest that patient satisfaction with ED care in general, as well as with the hs-cTn POCT could further improve with more attention to effective and patient-oriented communication. Other possible strategies to enhance patient satisfaction in the ED could be implementing patient feedback mechanisms which could provide insight into the patients' perception of care and integrating technology such as apps for updating patients about waiting times and for information provision.[32]

Physician satisfaction and user friendliness with the hs-cTn POCT was assessed in a separate sub-study of the CERMIT trial.

Further studies on the preference of the collection method (capillary vs venous) for hs-cTn POCT in the ED are warranted. Furthermore, studies should assess patient satisfaction with hs-cTn POCT in primary care.

Conclusion

Patients presenting to the ED with chest pain were overall satisfied with the use of hs-cTn POCT, as well as with the ED care in general. Interpersonal communication appears to be an important determinant of patient satisfaction. Further studies should evaluate more thoroughly the preference of the hs-cTn POC test collection method (capillary vs venous), as well as patient satisfaction with hs-cTn POCT in primary care.

References

1. Stepinska J, Lettino M, Ahrens I, et al. Diagnosis and risk stratification of chest pain patients in the emergency department: focus on acute coronary syndromes. A position paper of the Acute Cardiovascular Care Association. Eur Heart J Acute Cardiovasc Care. 2020 Feb;9(1):76-89. doi: 10.1177/2048872619885346.

2. Bjørnsen LP, Naess-Pleym LE, Dale J, et al. Description of chest pain patients in a Norwegian emergency department. Scandinavian Cardiovascular Journal. 2019 Jan 2;53(1):28–34.

3. Mockel M, Searle J, Muller R, et al. Chief complaints in medical emergencies: Do they relate to underlying disease and outcome? the Charité Emergency Medicine Study (CHARITEM). European Journal of Emergency Medicine. 2013 Apr;20(2):103–8.

4. Bhuiya F, Pitts S, McCaig L. Emergency Department Visits for Chest Pain and Abdominal Pain: United States, 1999–2008. Hyatsville, MD; 2010.

5. Harskamp R, van Peet P, Bont J et al. The conundrum of acute chest pain in general practice: a nationwide survey in The Netherlands. BJGP Open. 2018 Nov 28;2(4):bjgpopen18X101619.

6. Ho C, Cimon K, Weeks L, et al. Point-of-Care Troponin Testing in Patients With Symptoms Suggestive of Acute Coronary Syndrome: A Health Technology Assessment [Internet]. Ottawa (ON): Canadian Agency for Drugs and Technologies in Health; 2016 Mar. (CADTH Optimal Use Report, No. 5.1b.) 1, Introduction. Available from: https://www.ncbi.nlm.nih.gov/books/NBK362842/?utm

7. Byrne RA, Rossello X, Coughlan JJ, et al. 2023 ESC Guidelines for the management of acute coronary syndromes. Eur Heart J. 2023 Oct 12;44(38):3720-3826.

8. Rao SV, O'Donoghue ML, Ruel M, et al. 2025 ACC/AHA/ACEP/NAEMSP/SCAI Guideline for the Management of Patients With Acute Coronary Syndromes: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. J Am Coll Cardiol. 2025 Jun 10;85(22):2135-2237.

9. Jaffe AS, Body R, Mills NL, et al. Single Troponin Measurement to Rule Out Myocardial Infarction: JACC Review Topic of the Week. J Am Coll Cardiol. 2023 Jul 4;82(1):60-69. doi: 10.1016/j.jacc.2023.04.040. PMID: 37380305.

10. McDermott M, Tew YY, Cooper JG, et al. Cardiac troponin at the point of care in acute and chronic coronary syndromes. Diabetes Obes Metab. 2025 Sep;27 Suppl 8(Suppl 8):47-58.

11. Pickering JW, Joyce LR, Florkowski CM, et al. Emergency department use of a high-sensitivity point-of-care troponin assay reduces length of stay: an implementation study preliminary report. Eur Heart J Acute Cardiovasc Care. 2024 Dec 24;13(12):838-842.

12. Dawson LP, Smith K, Cullen L, et al. Care Models for Acute Chest Pain That Improve Outcomes and Efficiency: JACC State-of-the-Art Review. J Am Coll Cardiol. 2022 Jun 14;79(23):2333-2348. doi: 10.1016/j.jacc.2022.03.380.

13. Writing Committee; Kontos MC, de Lemos JA, et al. 2022 ACC Expert Consensus Decision Pathway on the Evaluation and Disposition of Acute Chest Pain in the Emergency Department: A Report of the American College of Cardiology Solution Set Oversight Committee. J Am Coll Cardiol. 2022 Nov 15;80(20):1925-1960. doi: 10.1016/j.jacc.2022.08.750.

14. Cullen L, Collinson PO, Giannitsis E. Point-of-care testing with high-sensitivity cardiac troponin assays: the challenges and opportunities. Emerg Med J. 2022 Nov;39(11):861-866.

15. Gunsolus IL, Schulz K, Sandoval Y, et al. Diagnostic performance of a rapid, novel, whole blood, point of care high-sensitivity cardiac troponin I assay for myocardial infarction. Clin Biochem. 2022 Jul-Aug;105-106:70-74.

16. van den Bulk S, Petrus AHJ, Willemsen RTA, et al. Ruling out acute coronary syndrome in primary care with a clinical decision rule and a capillary, high-sensitive troponin I point of care test: study protocol of a diagnostic RCT in the Netherlands (POB HELP). BMJ Open. 2023 Jun 8;13(6):e071822. doi: 10.1136/bmjopen-2023-071822.

17. Young SW, Bonsu KO, Lee T et al. Patient satisfaction with quality of care of a multidisciplinary thrombosis service - a cross sectional survey. BMC Health Serv Res. 2022 May 23;22(1):685. doi: 10.1186/s12913-022-08089-w.

18. Christenson RH, Frenk LDS, de Graaf HJ, et al. Point-of-Care: Roadmap for Analytical Characterization and Validation of a High-Sensitivity Cardiac Troponin I Assay in Plasma and Whole Blood Matrices. J Appl Lab Med. 2022 Jun 30;7(4):971-988.

19. Florkowski CM, Buchan V, Li BV, et al. Analytical verification of the Atellica VTLi point of care high sensitivity troponin I assay. Clin Chem Lab Med. 2024 Aug 28.

20. Xiong-Hang K, Schulz K, Sandoval Y, et al. Analytical performance comparing siemens whole blood point of care Atellica VTLi to the central laboratory plasma Atellica IM high-sensitivity cardiac troponin I assays. Clin Biochem. 2023 Apr;114:79-85.

21. Thulin VIL, Jordalen SMF, Myrmel GMS, et al. Effectiveness of Point-of-Care High-Sensitivity Troponin Testing in the Emergency Department: A Randomized Controlled Trial. Ann Emerg Med. 2025 Aug;86(2):124-135.

22. Zalama-Sánchez D, Del Pozo Vegas C, Sanz-García A, et al. Diagnostic Performance of Point-of-Care High-Sensitivity Troponin in the Exclusion of Non-ST-Elevation Myocardial Infarction in the Emergency Department. J Pers Med. 2024 Jul 17;14(7):762.

23. Hawthorne G, Sansoni J, Hayes L et al. Measuring patient satisfaction with health care treatment using the Short Assessment of Patient Satisfaction measure delivered superior and robust satisfaction estimates. J Clin Epidemiol. 2014 May;67(5):527-37. doi: 10.1016/j.jclinepi.2013.12.010.

24. Sansoni J, Hawthorne G, Fleming G et al. Technical Manual and Instructions: Revised incontinence and Patient Satisfaction Tools, Version 2. 2015 February. Centre for Health Service Development, Australian Health Services Research Institute, University of Wollongong.

25. Laurence CO, Gialamas A, Bubner T, et al. Patient satisfaction with point-of-care testing in general practice. Br J Gen Pract. 2010 Mar;60(572):e98-104. doi: 10.3399/bjgp10X483508.

26. Al Hayek AA, Al-Saeed AH, Alzahrani WM, et al. Assessment of Patient Satisfaction with On-Site Point-of-Care Hemoglobin A1c Testing: An Observational Study. Diabetes Ther. 2021 Sep;12(9):2531-2544. doi: 10.1007/s13300-021-01126-7.

27. Melnyk AI, Toal C, Glass Clark S, et al. Home urinary tract infection testing: patient experience and satisfaction with polymerase chain reaction kit. Int Urogynecol J. 2023 May;34(5):1055-1060. doi: 10.1007/s00192-022-05309-z.

28. Tavakol M, Dennick R. Making sense of Cronbach's alpha. Int J Med Educ. 2011 Jun 27;2:53-55. doi: 10.5116/ijme.4dfb.8dfd.

29. Marshall C. Introduction to Cronbach's alpha [Internet]. Dr. Matt C. Howard; [cited 2026 Apr 12]. Available from: https://mattchoward.com/introduction-to-cronbachs-alpha

30. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006 Jan;3(2):77-101. doi: 10.1191/1478088706qp063oa.

31. Cunningham M, Wells M. Qualitative analysis of 6961 free-text comments from the first National Cancer Patient Experience Survey in Scotland. BMJ Open. 2017 Jun 15;7(6):e015726. doi: 10.1136/bmjopen-2016-015726.

32. Idahor C, Ben-Igwenyi BE, Okonkwo U et al. Patients' Satisfaction in the Emergency Department: Measurement, Indicators, Factors Influencing Satisfaction, Impact, and Solution. Cureus. 2025 Apr 16;17(4):e82392. doi: 10.7759/cureus.82392.

33. Kurhayati K, Emaliyawati E, Trisyani Y. An Updated Scoping Review of Factors Associated with Length of Stay in Emergency Department. J Multidiscip Healthc. 2025 Jun 4;18:3191-3203. doi: 10.2147/JMDH.S525451.

34. Sonis JD, Aaronson EL, Lee RY et al. Emergency Department Patient Experience: A Systematic Review of the Literature. J Patient Exp. 2018 Jun;5(2):101-106. doi: 10.1177/2374373517731359. Epub 2017 Sep 29. PMID: 29978025; PMCID: PMC6022944.

35. Pines JM, Iyer S, Disbot M, Hollander JE, Shofer FS, Datner EM. The effect of emergency department crowding on patient satisfaction for admitted patients. Acad Emerg Med. 2008 Sep;15(9):825-31. doi: 10.1111/j.1553-2712.2008.00200.x. PMID: 19244633.

36. Nyce A, Gandhi S, Freeze B et al. Association of Emergency Department Waiting Times With Patient Experience in Admitted and Discharged Patients. J Patient Exp. 2021 Apr 28;8:23743735211011404. doi: 10.1177/23743735211011404. PMID: 34179441; PMCID: PMC8205338.

37. Meek R, Hayden G, Lu ZX, et al. Potential length of stay reductions from emergency department use of a point-of-care high-sensitivity cardiac troponin assay: Pilot findings from Australia's first cardiac emergency department. Emerg Med Australas. 2025 Apr;37(2):e70041. doi: 10.1111/1742-6723.70041.

Appendix

Appendix S1. The Short Assessment of Patient Satisfaction (SAPS) with modified added option to provide additional remarks in an open text field with every question as well as at the end of the questionnaire.

1. How satisfied are you with the effect of your treatment/care?	Very satisfied 0 Satisfied 1 Neither satisfied nor dissatisfied 2 Dissatisfied 3 Very dissatisfied 4	Additional remarks:
2. How satisfied are you with the explanations the doctor/other health professional has given you about the results of your treatment/care?	Very dissatisfied 0 Dissatisfied 1 Neither satisfied nor dissatisfied 2 Satisfied 3 Very satisfied 4	Additional remarks:
3. The doctor/other health professional was very careful to check everything when examining you.	Strongly agree 0 Agree 1 Not sure 2 Disagree 3 Strongly disagree 4	Additional remarks:
4. How satisfied were you with the choices you had in decisions affecting your health care?	Very dissatisfied 0 Dissatisfied 1 Neither satisfied nor dissatisfied 2 Satisfied 3 Very satisfied 4	Additional remarks:
5. How much of the time did you feel respected by the doctor/other health professional?	All of the time 0 Most of the time 1 About half the time 2 Some of the time 3 None of the time 4	Additional remarks:
6. The time you had with the doctor/other health professional was too short.	Strongly agree 0 Agree 1 Not sure 2 Disagree 3 Strongly disagree 4	Additional remarks:
7. Are you satisfied with the care you received in the hospital/clinic?	Very satisfied 0 Satisfied 1 Neither satisfied nor dissatisfied 2 Dissatisfied 3 Very dissatisfied 4	Additional remarks:
Do you have any other additional remarks?		

Scoring is done by first reversing the scores for items #1, #3, #5, #7, and then summing all scores. Total score 0 to 10 = very dissatisfied, 11 to 18 = dissatisfied, 19 to 26 = satisfied, 27 to 28 = very satisfied.

Appendix S2. High-sensitivity cardiac troponin I point-of-care testing (hs-cTnI POCT) satisfaction questionnaire.

Collection process	I would rather have blood taken by a finger prick than by needle in my arm.	1. strongly disagree 2. disagree 3. neutral 4. agree 5. strongly agree	Additional remarks:
Confidence in the process	I feel that point-of-care testing is at least as hygienic as testing via the laboratory.	1. strongly disagree 2. disagree 3. neutral 4. agree 5. strongly agree	Additional remarks:
Confidence in the results	I have confidence in the information given by my physician regarding my cardiac point-of-care test result.	1. strongly disagree 2. disagree 3. neutral 4. agree 5. strongly agree	Additional remarks:
Convenience	The availability of point-of-care cardiac testing within the emergency department saves time compared to sending samples to the central laboratory.	1. strongly disagree 2. disagree 3. neutral 4. agree 5. strongly agree	Additional remarks:
Disease management	Having immediate feedback of the test result was important as it allowed/would allow more prompt communication about my cardiac condition.	1. strongly disagree 2. disagree 3. neutral 4. agree 5. strongly agree	Additional remarks:
Do you have any other additional remarks?			

Ethical approval

Leuven, 12 Feb 2025

Ethics Committee
Research UZ/KU Leuven
Herestraat 49
B 3000 Leuven (Belgium)
Tel +32 16 34 86 00
Email : ec@uzleuven.be

prof. dr. Marc Sabbe
URGENTIEGENEESKUNDE

Our reference:	EudraCT-nr:	Belg. Regnr:
S68277		B3222024001608

Point-of-Care high-sensitivity troponin testing in the EmeRgency department to assess Myocardial Infarction for Timely discharge.

Positive advice in accordance with the law of 7 May 2004 on experiments on the human person

Dear colleague

The Ethics Committee Research (EC Research) UZ/KU Leuven has examined and discussed the above mentioned dossier in the meeting held on 13 Jan 2025.

After having consulted the additional information and/or adapted documents relating to this dossier, EC Research considers that the proposed study, as described in the protocol, is scientifically relevant and ethically justified. It therefore gives on 12 Feb 2025 a favourable opinion of this study.

EC Research emphasizes the responsibility of the PI/promotor of this study concerning the privacy of the participants'/patients' data. Additionally, all access to patient data by students or coworkers should occur under the responsibility and supervision of the PI/promotor (including the use of personal data in electronic/digital tools).The PI/promotor is responsible for the implementation of the project proposal in accordance with applicable laws and regulations including, but not limited to, the EU regulation 2016/679 (General Data Protection Regulation), the Belgian Law on patients' rights of 22/8/2002, and the policy of the institution where the research will be carried out.

EC Research refers to the ICH/GCP guidelines on its website, and confirms that a GCP-training is required for each investigator. It is the responsibility of the principal investigator that each member of the study team has a valid GCP-certificate (i.e. a certificate obtained not longer than 3 years ago).

EC Research underlines the sponsor's responsibility for the use of the application/digital tool in this clinical study. More specifically, the sponsor should conduct all essential GDPR checks to make sure the use of this application/tool is justified, GDPR compliant

and safe for the processing of sensitive personal data.

The patient should be well informed about the terms, conditions and costs of application. Furthermore, the sponsor's obligations should not be compromised by these terms and conditions, especially in terms of privacy protection of the patient. Please inform the patient about additional costs (if any) that are linked to the usage of the application/tool. This information should be added to an updated ICF, if necessary, in a subsequent amendment to the study.

Finally, EC research emphasizes that only essential data for the purpose of the application/tool can be collected (cf. GDPR principle of data proportionality and minimization).

For the assessment of this dossier, documents/answers received on 02 Jan 2025, 04 Feb 2025 and 10 Feb 2025 have been taken into account.

The favourable advice concerns:

Protocol:
v3 dd 27Jan2025
Informed Consent Form:
ICF version 2.0 dd 27Jan2025 Nl + Fr + En
ICF wettelijke vertegenwoordiger version 2.0 dd 27Jan2025 Nl + Fr + En
ICF hoogdringendheid version 2.1 dd 10Feb2025 Nl + Fr + En
ICF wettelijke vertegenwoordiger hoogdringendheid version 2.1 dd 10Feb2025 Nl + Fr + En
Proof of "no-fault" insurance cover:
dd 01Jan2025 - 31Dec2025
GDPR questionnaire:
dd23Jan2025
PRET Accepted dd 06Dec2024

EC Research confirms working in accordance with the ICH-GCP principles (International Conference on Harmonization Guidelines on Good Clinical Practice), the latest version of the Declaration of Helsinki, the Oviedo Convention on Human Rights and Biomedicine and applicable laws and regulations.

EC Research confirms that members with a potential conflict of interest abstain from voting.

List of members: see appendix.

Points of concern: (if applicable)

The conformity of translated documents compared to the Dutch documents, is the responsibility of the sponsor.

We would like to draw your attention to the fact that EC Research expects her initial comments to be taken into account ab initio at the next submission by the same sponsor.

*Provided that there is a **Clinical Trial Agreement**, the study can only start when the Clinical Trial Agreement has been approved and signed by the CEO of UZ Leuven (and/or by an authorized representative of KU Leuven R&D).*

Please take into account the regulations of the hospital concerning tissue management and the regulations of the law of December 19, 2008.

It is important to note that approval from EC Research is required for all use of e-consent before the process can start. This is a crucial step to ensure that all ethical considerations and regulations are adhered to. For more detailed information regarding the policy and procedure concerning e-consent in REDCap, we kindly refer you to the specific page on the CTC Datamanagement website: https://gbiomed.kuleuven.be/english/ctc/intern/data-management/econsent

This favourable advice from EC Research does not imply that EC Research can be held accountable for the planned study. You will remain responsible for the study. In addition, you should ensure that your opinion as principal investigator is reproduced in publications of study results, reports for the government, etc.

The EC approval granted for a specific project, is valid for one year.

*If the study will not be terminated within a year, the ICH-GCP demands that an **annual progress report** will be provided to EC Research. . We also request you to inform us if the study will not be initiated or if the study does not start within 1 year after approval.*

Finally, the termination (early or planned) of the study should be reported within the legal deadlines.

Yours sincerely,



Prof. Dr. Minne Casteels
Chair
Ethics Committee Research UZ Leuven

Cc:
FAMHP (Federal Agency for Medicines and Health Products)

CTC (Clinical Trial Center UZ Leuven)

List of members EC Research UZ/KU Leuven

Chair	prof. dr. Maria-Reinhilde Casteels	Clinical Pharmacology
Vice chair	prof. dr. Dominique Bullens	Paediatrics
	De heer Aernout De Raemaeker	Medical Legislation alternate
	De heer Jean-Jacques Derèze	Medical Legislation alternate
	De heer Mathijs Swaak	Healthy volunteer repres.
	Mevr. Annick Vanclooster	Nurse
	Mevr. Dorien Fierens	Medical Legislation alternate
	Mevr. Katelijne Van Overwalle	Pt representative (alternate)
	Mevr. Lia De Wilde	Pt representative (alternate)
	Mevr. Marie Gilliot	Medical Legislation alternat
	Mevr. Marilien Vandeputte	Nurse
	Mevr. Teresia De Fraye	Pt representative
	Mevr. Valerie Christens	Medical Legislation alternat
	Mevr. Veerle Vanparys	Pharmacist (alternate)
	dr. Ellen Deleus	Abdominal surgery
	dr. Kamiel Verbeke	Clin. Psychology
	dr. Kristel Van Landuyt	Bioband
	dr. Lut De Groote	General Practitioner
	dr. Marleen Renard	Paediatrics
	dr. Walter Janssens	Clinical Pharmacology
	prof. André Loeckx	Pt representative (alternate)
	prof. Ben Van Calster	Statistics
	prof. Guy Bosmans	Clin. Psychology (alternate)
	prof. Kristin Verbeke	TARGID
	prof. Pascal Borry	Ethics (alternate)
	prof. Rik Gosselink	Revalidation
	prof. dr. Anne Smits	Paediatrics
	prof. dr. Anne Uyttebroeck	Paediatrics
	prof. dr. Ariel Alonso	Statistics (alternate)
	prof. dr. Bart Van der Schueren	Endocrinology / Pharmacology
	prof. dr. Catherine Cassiman	Ophthalmology
	prof. dr. Francesca Bosisio	Pathology
	prof. dr. Frank Van Calenbergh	Neurosurgery
	prof. dr. Frederik Nevens	Hepatholgy
	prof. dr. Gregor Verhoef	Haematology
	prof. dr. Heleen Delbeke	Ophtalmology
	prof. dr. Jan Verhaegen	Laboratory Medicine
	prof. dr. Jan de Hoon	Clinical Pharmacology
	prof. dr. Karin Sipido	Experimental Cardiology
	prof. dr. Koen Luyckx	Clin. Psychology (alternate)
	prof. dr. Laura Van Gerven	ORL
	prof. dr. Maria Schetz	Intensive care
	prof. dr. Peter Sinnaeve	Cardiology
	prof. dr. Simon Brumagne	Physiotherapy
	prof. dr. apr. Erwin Dreesen	Pharmacist