APPENDICES

Appendix 1. Hospital sampling criteria for interviews

Selection criterion	Description
Variation in hospital type	University hospitals, tertiary teaching hospitals[1] and general hospitals .
Variation in standards and regulations for designing internal audit system	Different standards for the design of internal audit systems (e.g. NIAZ, JCI, VMS).
>5 years of experience with internal auditing	Only hospitals with more than five years' experience with internal audits were included, because this assured that one internal audit cycle would have been completed.
Variation in data sources used for internal audit	A distribution of hospitals with different sources of input for their internal audit; such as interviews, observations, surveys amongst employees and patients, and self-evaluation.
Medical specialist in audit team	A distribution of hospitals with, and without medical specialists in their audit team.
Hours spent per internal audit	Hospitals that spent less than 100, between 100-250 and more than 250 hours per audit.
Geographical spread/location	Two different provinces per type of hospital.

[1] Tertiary teaching hospitals in the Netherlands provide highly specialised care and train doctors in collaboration with university hospitals.

Appendix 2. Questionnaire 2012

<u>Content</u>

1. Which standards are used by your hospital for the internal audit (multiple responses possible)?
    o   Standards of accreditation institutes
    o   Standards set by law
    o   Standards set by profession
    o   Standards set by hospital itself
    o   Other, namely:
2. What is used as input for the internal audit in your hospital (multiple responses possible)?
    o   Outcomes of self-evaluation by department
    o   Outcomes of document analysis by audit team
    o   Outcomes of interviews by audit team
    o   Outcomes of site-visits by audit team
    o   Outcomes of ad hoc measures by audit team
    o   Other, namely:

<u>Organization</u>

3. Who are the members of the audit team in your hospital (multiple responses possible)?
    o   Medical specialists
    o   Allied healthcare professionals
    o   Nurses
    o   Management
4. What is the total number of auditors in your hospital?
    o   < 5
    o   5-10
    o   10-20
    o   >20
5. Do auditors receive training and/or are they structurally evaluated (multiple responses possible)?
    o   Training
    o   Evaluation
    o   No training, no evaluation
6. What is the time frame of one internal audit (from the first preparations to feedback of results to audited department)?
    ...... months
7. What is the frequency of the internal audit?
    Once every ... year(s)

Appendix 3. COREQ guidelines table

No. Item	Guide questions/description	
Domain 1: Research team and reflexivity		
Personal Characteristics		
1. Inter viewer/facilitator	Which author/s conducted the interview or focus group?	SvG and MZ
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	1 MA, 1 PhD
3. Occupation	What was their occupation at the time of the study?	Research Fellows
4. Gender	Was the researcher male or female?	Both female
5. Experience and training	What experience or training did the researcher have?	Two researchers received training in interviewing. Both followed courses on qualitative research
Relationship with participants		
6. Relationship established	Was a relationship established prior to study commencement?	Yes, to one of them. However, we made sure to act the same as in all other interviews (sending the topic guide prior to the interview, introducing ourselves, no small talk during the interview) so that this did not affect the data.
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	Broad outlines given
8. Interviewer characteristics	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	Reasons for research
Domain 2: study design		
Theoretical framework		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Thematic analysis
Participant selection		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	Purposively sampled
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	Face-to-face, telephone and email
12. Sample size	How many participants were in the study?	43
13. Non-participation	How many people refused to participate or dropped out? Reasons?	Two not interviewed for lack of time
Setting		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	Clinic and workplace
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	No
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	Boards of Directors (n=5), Boards of

		Supervisors (n=5), Quality and safety directors (n=7), Quality officers (n=14), Head of department or clinical manager (auditees) (n=12). Of the interviewees, 56% was female, and 40% had six or more years of experience in their current function.
Data collection		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	Interview guides were sent to interviewees prior to the interview. The topic guides were pilot tested.
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?	No
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Audiotaped
20. Field notes	Were field notes made during and/or after the interview or focus group?	Yes, after some interviews
21. Duration	What was the duration of the inter views or focus group?	30–60 minutes
22. Data saturation	Was data saturation discussed?	Yes and reached
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	If desired; no adjustments were made by interviewees
Domain 3: analysis and findings		
Data analysis		
24. Number of data coders	How many data coders coded the data?	3
25. Description of the coding tree	Did authors provide a description of the coding tree?	Yes
26. Derivation of themes	Were themes identified in advance or derived from the data?	Identified in advanced and derived from the data
27. Software	What software, if applicable, was used to manage the data?	Atlas.ti software version 7.0
28. Participant checking	Did participants provide feedback on the findings?	No
Reporting		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	Yes, but not with a participant number
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Yes
31. Clarity of major themes	Were major themes clearly presented in the findings?	Yes
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Yes

Appendix 4. Topics for guiding interviews with stakeholders in the audit and governance process

1. How are internal audits set up in your hospital?
2. Is the focus of the audit determined beforehand?
3. Which framework do you use for the internal audit and why?
4. What methods do you use to gather information and why?
5. What kind of information do you get from audits and how do you use it?
6. What does an audit result say about the actual state of a department?
7. To what extent do you use the internal audit to oversee patient safety?
8. To what extent do you use the internal audit to steer patient safety?
9. To what extent are internal audit results discussed with the board of supervisors?
10. To what extent does the internal audit contribute to the feeling of being 'in control'?
11. What were the advantages or disadvantages of the internal audit for your hospital?
12. How do you oversee the quality and safety in your hospital?

Appendix 5. Organization and content of internal audit

Organization and content of the internal audit in Dutch hospitals ($n = 68$)

	n	%
Frequency of audit§		
Every year	6	9
Every 2 years	7	10
Every 3 years	9	13
Every 4 years	45	66
Time frame of one internal audit		
1 month	6	9
2 months	18	27
3 months	17	25
4 months	6	9
5 months	2	3
6 months	6	9
7 months	2	3
Members of the audit team		
Medical specialists	46	68
Allied healthcare professionals	51	75
Nurses	65	96
Management	57	84
Total number of auditors in hospital		
5–10	1	1
10–20	23	34
>20	44	65
Structural training and/or evaluation of auditors?		
Training	55	81
Evaluation	50	74
No training, no evaluation	6	9
Framework for audit		
Standards of accreditation institutes	66	97
Standards set by law	45	66
Standards set by profession	18	27
Standards set by hospital itself	22	32
Other†	25	37
Input for audit		
Outcomes of self-evaluation by department	40	59
Outcomes of document analysis by audit team	68	100
Outcomes of interviews by audit team	68	100
Outcomes of site-visits by audit team	68	100
Outcomes of ad hoc measures by audit team	23	34
Other¥	14	21

§ When responding to the questions regarding 'Frequency of audit', 'Time frame of audit' and 'Number of auditors', respondents could only choose one option, whereas when responding to the other questions, respondents could choose multiple options.

†ISO, VMS, HKZ, CCL, NEN, NTA, JACIE, MediRisk

¥Outcomes of other audits when present, such as audits by external experts and audits initiated by medical specialties; outcomes of satisfaction questionnaires amongst partner departments (such as an orthopedic department when the radiology department is being audited); outcomes of tracers; outcomes of chart reviews; outcomes of team climate inventory.