

Supplementary materials

Appendix 1 The Safety Attitudes Questionnaire in Chinese

Please answer the following items with respect to your specific unit or clinical area.

Choose your responses using the scale below:

请回答下列问题，并在相应区域做出选择。

	Strongly Disagree 强烈不同意	Disagree Slightly 不同意	Neutral 中立	Agree Slightly 同意	Agree Strongly 强烈同意	Not Applicable 无关
1. Nurse input is well received in this clinical area. 护理人员的意见可以被充分接受。						
2. In this clinical area, it is difficult to speak up if I perceive a problem with patient care. 在临床实际工作中，如果发现患者在接受治疗过程中的问题，很难说出来。						
3. Disagreements in this clinical area are resolved appropriately (i.e., not who is right, but what is best for the patient). 在临床实际工作中，如果发生意见分歧是可以被很好的加以解决的（如，不是要证明谁的意见对，而是应该阐明什么方案对患者最好）。						
4. I have the support I need from other personnel to care for patients. 在为患者提供医疗服务的过程中，我可以得到足够的支持。						
5. It is easy for personnel here to ask questions when there is something that they do not understand. 如果在工作中遇到不明白的问题，可以很自由的提出。						
6. The physicians and nurses here work together as a well-coordinated team.						

医生团队和护理团队可以达到最佳合作状态。						
7. I would feel safe being treated here as a patient. 如果我是患者，我在这里可以得到非常安全的医疗服务。						
8. Medical errors are handled appropriately in this clinical area. 医疗差错可以被妥善处理。						
9. I know the proper channels to direct questions regarding patient safety in this clinical area. 我知道通过何种沟通渠道反映患者安全相关问题。						
10. I receive appropriate feedback about my performance. 我可以得到对于我工作业绩的评估的反馈。						
11. In this clinical area, it is difficult to discuss errors. 在临床工作过程中，对于医疗差错很难公开讨论。						
12. I am encouraged by my colleagues to report any patient safety concerns I may have. 我的同事会鼓励我积极上报我遇到的患者安全问题。						
13. The culture in this clinical area makes it easy to learn from the errors of others. 在临床工作中，鼓励大家从以往的差错事故中吸取经验教训。						
14. My suggestions about safety would be acted upon if I expressed them to management. 如果向管理层提出了关于患者安全的建议，他们会采取相关行动。						
15. I like my job. 我喜欢我的工作。						
16. Working here is like being part of a large family. 在这里工作自己就像一个大家庭的成员。						
17. This is a good place to work. 这是一个很好的工作场所。						
18. I am proud to work in this clinical area. 我很骄傲能在这里工作。						
19. Morale in this clinical area is high. 在日常工作中，大家士气非常高。						

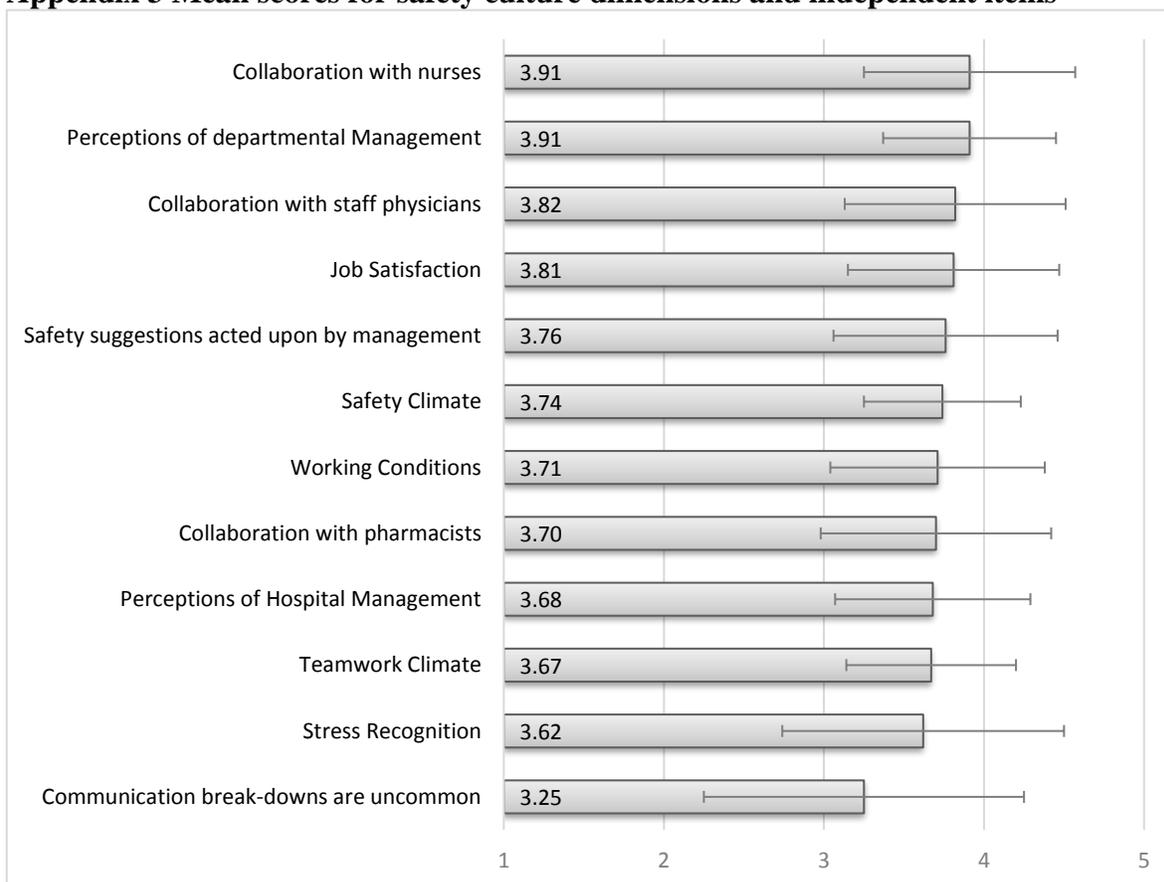
20. When my workload becomes excessive, my performance is impaired. 我的工作业绩会因为巨大的工作量受到影响。						
21. I am less effective at work when fatigued. 如果我很疲劳，工作效率会降低。						
22. I am more likely to make errors in tense or hostile situations. 在紧张或者敌对的情况下，我犯错误的几率会增大。						
23. Fatigue impairs my performance during emergency situations (e.g. emergency resuscitation, seizure). 疲劳会削弱我在紧急情况下 (例如紧急复苏，疾病突然发作) 期间的表现。						
24a. Unit management supports my daily efforts. 部门领导会很好的支持我的日常工作。						
24b. Hospital management supports my daily efforts. 医院的管理层可以很好的支持我的日常工作。						
25a. Unit management doesn't knowingly compromise patient safety. 部门领导不会忽视患者安全。						
25b. Hospital management doesn't knowingly compromise patient safety 医院领导不会忽视患者安全。						
26a. Unit management is doing a good job. 部门领导患者安全相关工作做的非常好。						
26b. Hospital management is doing a good job. 医院领导患者安全相关工作做的非常好。						
27a. Problem personnel are dealt with constructively by our unit management. 部门领导会以建设性的态度处理出现问题的人员。						
27b. Problem personnel are dealt with constructively by our hospital management. 医院领导会以建设性的态度处理出现问题的人员。						

28a. I get adequate, timely info about events that might affect my work, from unit management. 我可以从部门管理层获得及时、充分的可能会影响工作的事件信息通报。						
28b. I get adequate, timely info about events that might affect my work, from hospital management. 我可以从医院管理层获得及时、充分的可能会影响工作的事件信息通报。						
29. The levels of staffing in this clinical area are sufficient to handle the number of patients. 医院员工充足，可以为患者提供足够的服务。						
29. This hospital does a good job of training new personnel. 医院为新员工提供了足够的培训。						
30. All the necessary information for diagnostic and therapeutic decisions is routinely available to me. 我可以获得所有诊断及治疗的相关信息。						
31. Trainees in my discipline are adequately supervised. 科室里的实习生会被足够的监督指导。						
32. I experience good collaboration with nurses in this clinical area. 在工作中，我和护士同事合作的非常愉快。						
33. I experience good collaboration with staff physicians in this clinical area. 在工作中，我和医生合作的非常愉快。						
34. I experience good collaboration with pharmacists in this clinical area. 在工作中，我和药剂师合作的非常愉快。						
35. Communication breakdowns that lead to delays in delivery of care are common. 由于沟通不畅而导致延迟提供患者临床服务的现象很常见。						

Appendix 2 Interview Questions

1. Could you describe your scope of work?
2. Could you describe your typical day at work?
3. How is the collaboration in your department? Could you describe it?
4. How safe do you think the patients in your department? Why?
5. What are your suggestions to improve patient safety in your department? Why?
6. Do you have any other comments?

Appendix 3 Mean scores for safety culture dimensions and independent items



Appendix 4 Correlations between SAQ dimensions and independent items

	Safety Climate	Job Satisfaction	Stress Recognition	Perceptions of departmental Management	Perceptions of Hospital Management	Working Conditions	Safety suggestions acted upon by management ^a	Collaboration with nurses ^b	Collaboration with staff physicians ^c	Collaboration with pharmacists ^d	Communication break-downs are uncommon ^e
Teamwork Climate	0.72*	0.50*	-0.12*	0.63*	0.62*	0.52*	0.60*	0.33*	0.42*	0.37*	0.31*
Safety Climate		0.55*	-0.10*	0.70*	0.70*	0.62*	0.67*	0.38*	0.37*	0.40*	0.32*
Job Satisfaction			-0.20*	0.60*	0.60*	0.47*	0.50*	0.28*	0.35*	0.33*	0.24*
Stress Recognition				-0.03	-0.14*	-0.12*	-0.09*	0.00	-0.08*	-0.07*	-0.30*
Perceptions of departmental Management					0.79*	0.56*	0.56*	0.34*	0.34*	0.36*	0.21*
Perceptions of Hospital Management						0.66*	0.61*	0.30*	0.34*	0.38*	0.26*
Working Conditions							0.47*	0.44*	0.37*	0.42*	0.25*
Safety suggestions acted upon by management								0.24*	0.26*	0.29*	0.21*
Collaboration with nurses									0.68*	0.58*	0.19*
Collaboration with staff physicians										0.70*	0.20*
Collaboration with pharmacists											0.25*

* Correlation is significant at $p < 0.01$ (two-tailed)

Bold: correlations with a coefficient equal to or greater than 0.50 (indicating medium to strong correlations)

^aShortened from “My suggestions about safety would be acted upon if I expressed them to management.”

^bShortened from “I experience good collaboration with nurses in this clinical area.”

^cShortened from “I experience good collaboration with staff physicians in this clinical area.”

^dShortened from “I experience good collaboration with pharmacists in this clinical area.”

^eShortened and reversed coded from “Communication breakdowns that lead to delays in delivery of care are common.”

Appendix 5 Mean scores for safety culture dimensions and independent items by department (Standard Deviation between parentheses)

	Team-work Climate	Safety Climate	Job Satisfaction	Stress Recognition	Perceptions of departmental Management	Perceptions of Hospital Management	Working Conditions	Safety suggestions acted upon by management ^a	Collaboration with nurses ^b	Collaboration with staff physicians ^c	Collaboration with pharmacists ^d	Communication breakdowns ^e
All departments	3.67 (0.53)	3.74 (0.49)	3.81 (0.66)	3.62 (0.88)	3.91 (0.54)	3.68 (0.61)	3.71 (0.67)	3.76 (0.70)	3.91 (0.66)	3.82 (0.69)	3.70 (0.72)	3.25 (1.00)
Obstetrics	3.71 (0.53)	3.78 (0.48)	3.66 (0.70)	3.85 (0.85)	3.93 (0.52)	3.66 (0.59)	3.85 (0.64)	3.80 (0.76)	4.07 (0.65)	3.89 (0.69)	3.75 (0.73)	3.21 (1.04)
Gynecology	3.55 (0.52)	3.65 (0.45)	3.58 (0.65)	3.79 (0.78)	3.80 (0.45)	3.58 (0.52)	3.52 (0.75)	3.63 (0.63)	3.96 (0.57)	3.68 (0.73)	3.56 (0.82)	3.13 (0.96)
Family planning	3.97 (0.26)	3.93 (0.37)	3.98 (0.28)	3.46 (0.98)	4.04 (0.43)	3.85 (0.47)	3.86 (0.39)	3.95 (0.52)	4.06 (0.42)	4.00 (0.47)	4.06 (0.42)	3.42 (0.96)
Pediatrics	3.65 (0.55)	3.67 (0.45)	3.54 (0.68)	3.84 (0.84)	3.81 (0.49)	3.56 (0.49)	3.65 (0.70)	3.70 (0.60)	3.86 (0.65)	3.74 (0.74)	3.59 (0.68)	3.26 (1.02)
Breast	3.65 (0.33)	3.46 (0.47)	3.75 (0.35)	3.59 (0.55)	3.88 (0.35)	3.88 (0.35)	3.75 (0.39)	3.25 (0.46)	4.00 (0.53)	4.00 (0.53)	3.75 (0.46)	2.50 (0.76)
Surgery & Anesthesiology	3.75 (0.57)	3.88 (0.50)	3.93 (0.74)	3.90 (0.75)	4.04 (0.72)	3.74 (0.76)	3.97 (0.60)	3.82 (0.73)	4.17 (0.66)	4.05 (0.78)	4.10 (0.75)	3.55 (1.09)
Ultrasound	3.43 (0.63)	3.47 (0.52)	3.68 (0.59)	3.69 (1.02)	3.54 (0.52)	3.08 (0.54)	3.26 (0.77)	3.36 (0.64)	3.44 (0.61)	3.84 (0.55)	3.55 (0.62)	3.14 (0.99)
Radiology	3.96 (0.56)	3.73 (0.54)	3.81 (0.65)	3.01 (1.14)	3.93 (0.61)	3.89 (0.44)	3.89 (0.57)	3.63 (0.83)	4.16 (0.69)	4.21 (0.54)	3.78 (0.81)	3.84 (0.90)
Pathology	3.68 (0.47)	3.72 (0.55)	3.97 (0.55)	3.72 (1.06)	3.90 (0.62)	3.82 (0.45)	3.78 (0.43)	3.70 (0.56)	3.38 (0.51)	3.91 (0.53)	3.27 (0.47)	3.40 (0.94)
Pharmacy	3.68 (0.45)	3.72 (0.32)	3.97 (0.45)	3.72 (0.73)	3.90 (0.39)	3.82 (0.46)	3.78 (0.52)	3.70 (0.56)	3.38 (0.71)	3.91 (0.69)	3.27 (0.72)	3.40 (0.86)
Laboratory	3.60 (0.50)	3.63 (0.47)	3.94 (0.51)	3.22 (0.91)	3.91 (0.41)	3.66 (0.53)	3.57 (0.63)	3.61 (0.59)	3.57 (0.68)	3.61 (0.68)	3.61 (0.63)	3.35 (0.89)
In-Vivo Fertilization Centre	3.67 (0.51)	3.79 (0.50)	3.68 (0.73)	3.67 (0.89)	3.99 (0.46)	3.67 (0.57)	3.68 (0.71)	3.76 (0.76)	4.08 (0.65)	3.92 (0.81)	3.79 (0.74)	3.61 (0.96)
Prenatal Diagnosis	3.69 (0.53)	3.68 (0.48)	3.99 (0.61)	3.64 (0.74)	3.94 (0.41)	3.54 (0.54)	3.59 (0.83)	3.70 (0.65)	3.79 (0.98)	3.83 (0.85)	3.35 (0.89)	3.27 (1.08)

Traditional / Chinese-Western Medicine	4.23 (0.66)	4.11 (0.56)	4.26 (0.53)	3.61 (0.66)	4.23 (0.69)	4.02 (0.66)	3.97 (0.48)	4.13 (0.64)	3.78 (0.67)	4.20 (0.63)	3.88 (0.83)	3.50 (1.18)
Nutrition	3.90 (0.32)	3.97 (0.16)	4.02 (0.06)	2.71 (0.60)	3.94 (0.22)	3.91 (0.33)	4.03 (0.09)	3.85 (0.38)	4.00 (0.00)	4.00 (0.00)	4.00 (0.00)	4.15 (0.38)
Medical Records	3.54 (0.61)	3.65 (0.46)	4.09 (0.65)	3.97 (0.80)	4.07 (0.52)	3.95 (0.51)	3.94 (0.61)	3.90 (0.74)	3.82 (0.75)	3.82 (0.75)	3.60 (0.70)	2.90 (0.57)
Administration	3.79 (0.56)	3.94 (0.64)	4.21 (0.68)	3.43 (0.80)	4.22 (0.62)	4.03 (0.75)	3.77 (0.67)	4.10 (0.80)	3.73 (0.71)	3.65 (0.69)	3.56 (0.69)	3.15 (0.86)
Logistics, Medical Equipment and IT	3.58 (0.49)	3.65 (0.44)	3.75 (0.58)	3.44 (0.91)	3.78 (0.49)	3.58 (0.55)	3.61 (0.66)	3.70 (0.65)	3.89 (0.58)	3.84 (0.61)	3.70 (0.68)	3.58 (0.02)
P value	<i>p</i> > 0.001											

^aShortened from “My suggestions about safety would be acted upon if I expressed them to management.”

^bShortened from “I experience good collaboration with nurses in this clinical area.”

^cShortened from “I experience good collaboration with staff physicians in this clinical area.”

^dShortened from “I experience good collaboration with pharmacists in this clinical area.”

^eShortened and reversed coded from “Communication breakdowns that lead to delays in delivery of care are common.”

Appendix 6 Differences in safety culture dimensions and independent items between departments (Bonferroni correction at $p < 0.00028$)

Dimensions and independent items	The department with a significantly higher mean score	The department with a significantly lower mean score
Teamwork Climate	Family Planning	Laboratory
	Family Planning	Logistics, Medical Equipment and IT
	Family Planning	Gynecology
	Administration	Logistics, Medical Equipment and IT
	Obstetrics	Logistics, Medical Equipment and IT
Safety Climate	Administration	Logistics, Medical Equipment and IT
	Obstetrics	Logistics, Medical Equipment and IT
	Surgery and Anesthesiology	Logistics, Medical Equipment and IT
	Nutrition	Logistics, Medical Equipment and IT
	Surgery and Anesthesiology	Ultrasound
	Family Planning	Ultrasound
	Pharmacy	Ultrasound
	Nutrition	Ultrasound
	Administration	Ultrasound
	Nutrition	Laboratory
Job Satisfaction	Administration	Obstetrics
	Administration	Gynecology
	Administration	Pediatrics
	Administration	IVF
	Administration	Logistics, Medical Equipment and IT
	Pharmacy	Obstetrics
	Pharmacy	Pediatrics
	Pharmacy	Ultrasound
	Pharmacy	Gynecology
	Pharmacy	IVF
	Pharmacy	Logistics, Medical Equipment and IT
	Laboratory	Pediatrics
	Laboratory	Gynecology
	Administration	Ultrasound
Stress Recognition	Obstetrics	Laboratory
	Obstetrics	Nutrition
	Obstetrics	Administration
	Obstetrics	Logistics, Medical Equipment and IT
	Gynecology	Laboratory
	Gynecology	Nutrition
	Gynecology	Administration
	Gynecology	Logistics, Medical Equipment and IT
	Pediatrics	Laboratory
	Pediatrics	Nutrition
	Pediatrics	Administration
	Pediatrics	Logistics, Medical Equipment and IT
	Surgery and Anesthesiology	laboratory
	Surgery and Anesthesiology	nutrition
	Surgery and Anesthesiology	administration
	Surgery and Anesthesiology	Logistics, Medical Equipment and IT
Pharmacy	Ultrasound	

Perceptions of Departmental Management	Prenatal diagnosis	Ultrasound
	Administration	Ultrasound
	Surgery and Anesthesiology	Ultrasound
	Obstetrics	Ultrasound
	Obstetrics	Logistics, Medical Equipment and IT
	Surgery and Anesthesiology	Logistics, Medical Equipment and IT
	Pharmacy	Logistics, Medical Equipment and IT
	Administration	Logistics, Medical Equipment and IT
	Administration	Gynecology
	Pharmacy	Gynecology
	Pharmacy	Pediatrics
	Administration	Pediatrics
	Administration	Obstetrics
Perceptions of Hospital Management	Obstetrics	Ultrasound
	Gynecology	Ultrasound
	Pediatrics	Ultrasound
	Family planning	Ultrasound
	Surgery and Anesthesiology	Ultrasound
	Radiology	Ultrasound
	Pathology	Ultrasound
	Pharmacy	Ultrasound
	Laboratory	Ultrasound
	IVF	Ultrasound
	Traditional / Chinese western medicine	Ultrasound
	Prenatal diagnosis	Ultrasound
	Nutrition	Ultrasound
	Medical records	Ultrasound
	Administration	Ultrasound
	Logistics, Medical Equipment and IT	Ultrasound
	Breast	Ultrasound
	Administration	Gynecology
	Pharmacy	Gynecology
	Pharmacy	Pediatrics
Administration	Pediatrics	
Pharmacy	Logistics, Medical Equipment and IT	
Administration	Logistics, Medical Equipment and IT	
Administration	Obstetrics	
Working Conditions	Obstetrics	Ultrasound
	Surgery and Anesthesiology	Ultrasound
	Pharmacy	Ultrasound
	Nutrition	Ultrasound
	Administration	Ultrasound
	Obstetrics	Laboratory
	Obstetrics	Gynecology
	Obstetrics	Logistics, Medical Equipment and IT
	Surgery and Anesthesiology	Laboratory
	Surgery and Anesthesiology	Logistics, Medical Equipment and IT
	Surgery and anesthesiology	Gynecology
	Obstetrics	Ultrasound

Safety suggestions would be acted upon by management	Administration	Obstetrics
	Administration	Pediatrics
	Administration	Ultrasound
	Administration	Laboratory
	Administration	Logistics, Medical Equipment and IT
	Administration	Gynecology
Collaboration with nurses	Obstetrics	Pathology
	Obstetrics	Laboratory
	Obstetrics	Administration
	Obstetrics	Logistics, Medical Equipment and IT
	Gynecology	Ultrasound
	Gynecology	Pathology
	Gynecology	Laboratory
	Surgery and Anesthesiology	Ultrasound
	Surgery and anesthesiology	Pathology
	Surgery and Anesthesiology	Laboratory
	Surgery and Anesthesiology	Administration
	Surgery and Anesthesiology	Logistics, Medical Equipment and IT
	Family planning	Ultrasound
	Pediatrics	Ultrasound
	IVF	Ultrasound
	Logistics, Medical Equipment and IT	Ultrasound
	Logistics, Medical Equipment and IT	Pathology
	IVF	Laboratory
	Logistics, Medical Equipment and IT	Laboratory
	Collaboration with staff physicians	Obstetrics
Surgery and Anesthesiology		Laboratory
Surgery and Anesthesiology		Administration
Surgery and Anesthesiology		Gynecology
Logistics, Medical Equipment and IT		Administration
Collaboration with pharmacists	Surgery and Anesthesiology	Surgery and Anesthesiology
	Surgery and anesthesiology	Pathology
	Surgery and anesthesiology	Laboratory
	Surgery and anesthesiology	Prenatal diagnosis
	Surgery and anesthesiology	Administration
	Surgery and anesthesiology	Logistics, Medical Equipment and IT
	Surgery and anesthesiology	Obstetrics
	Surgery and anesthesiology	Pediatrics
	Surgery and anesthesiology	Gynecology
	Pharmacy	Pediatrics
	Pharmacy	Ultrasound
	Pharmacy	Pathology
	Pharmacy	Prenatal diagnosis
	Pharmacy	Administration
	Pharmacy	Gynecology
	Family planning	Pathology
		Nutrition

Communication breakdowns are uncommon	Nutrition	Medical records
	Nutrition	Administration
	Nutrition	Logistics, Medical Equipment and IT
	Nutrition	Gynecology
	Pharmacy	Administration
	Pharmacy	Administration

Appendix 7 Extracted themes drawn from interview responses by department

Department	Extracted themes	Description
Obstetrics (n=10)	Working conditions	<i>High workload</i> Obstetrics department had 200 beds that were always full, especially with the increase in patient volume, but there were only 5 medical doctors. If there was an emergency operation, two doctors would be working in the operating room, leaving the workload to 3 doctors.
		<i>Better compensation system</i> Interviewees shared concerns related how clinical staff were compensated. Interviewees suggested that performance of clinical staff should be evaluated not only by the quantity of patients but also by the work intensity and quality.
	Perceptions of hospital management	<i>Criteria for performing ultrasound tests</i> Interviewees suggested that it was unclearly defined when a doctor needed to refer a patient to take an ultrasound test. There was a perceived need for the hospital to clearly define criteria for urgently performing ultrasound test or a scheduled ultrasound test. <i>“If an Obstetrics doctor refers a patient for an ultrasound examination in the morning, it could be delivered in the afternoon. If a patient is admitted to the hospital in the afternoon, the ultrasound examination can only be done the next day. The hospital should define what an urgent and not urgent ultrasound examination, so that an ultrasound examination can be performed in time according to the patient condition.”</i>
Pediatrics (n=6)	Working conditions	<i>Inconsistent training</i> Interviewees mentioned that there had been many new equipment and new staff. However, there was inconsistent training on how to use new equipment for all staff, especially for new staff, leading to bottleneck in the process of care.
		<i>High workload</i> Interviewees perceived that increased patients and patient turnover caused even higher workload for staff.
		<i>Career and professional development</i> Medical doctors needed to publish scientific articles in order to develop their career. However, interviewees said that organizational support such as training for conducting research was perceived as lacking.
	Working conditions	<i>High workload</i>

Department	Extracted themes	Description
<p style="text-align: center;">Surgery and anesthesiology (n=6)</p>		<p>Interviewees suggested that the lack of staff was the main cause to high workload for staff. To illustrate, the interviewees mentioned that there were 400-600 patients every month being treated by seven anesthesiologists. There was only one anesthesiologist in the delivery room responsible for 24 hours services in one of three hospital sites.</p> <p>In addition, the hospital offered 24 hour clinical service, however, crucial support services (eg, kitchen, IT, logistics, and technicians) were not offered 24 hours. This resulted in clinical staff had to do all support services out-of-hours, and clinical staff were often being blamed by patients who did not (immediately) receive support services out-of-hours.</p>
		<p><i>Issue with infection control training</i></p> <p>Interviewees perceived that infection control training was an important basic training for clinical staff. However, clinical staff did not always take the training because it was not mandatory. As a result, clinical staff did not know the related policy and procedures, and thus did not comply with them in the practice. This was perceived as a risk to patient safety. In addition, the training was perceived as unattractive due to learning methodology that, for example, lectured participants to wash hands without any explanation of why they should wash hands.</p>
		<p><i>Hardware and equipment issues</i></p> <p>Interviewees raised concerns related to the quality of hardware facilities and equipment in one hospital site (ie, West campus) which were 50-60 years old.</p> <p><i>“Hardware in the West campus is a safety hazard. Air conditioner does not work well and has an impact on operations. As a result, some operating rooms are particularly cold, or particularly hot.”</i></p>
		<p><i>Security issue</i></p> <p>There was no access control system in delivery at one of the three hospital sites, risking tailgating and a high risk for the safety and security system.</p>
		<p><i>Career and professional development</i></p> <p>Similar to interview results for Pediatrics, for a medical doctor to develop professionally (from being a resident to being a fellow and eventually a professor) needed to publish scientific articles. However, medical doctors had a high workload clinically and thus did not have time to do research. In addition, no training was provided to doctors in educating them to do research.</p>

Department	Extracted themes	Description
		<p><i>“The hospital requires research evaluation conducted in clinical departments, but does not provide necessary support conditions. For example, there is little support for clinical staff to access medical records. It is also difficult to carry out experiments out-of-hours in the laboratory due to limited opening hours of the laboratory.”</i></p>
	Teamwork climate	<p><i>Issues related to medical records</i></p> <p>All medical records were kept in a “data center”. Only the staff working there had the rights to access these records because the records were required to be sent directly to government to produce statistics (eg, the number of births). Interviewees perceived that the “rights” created a hierarchy where medical records staff perceived themselves as higher in hierarchy than clinical staff. This could result in, for example, clinical staff did not receive support in accessing certain medical records, or the coding system used in the medical records was outdated and not consistent with the actual clinical situation. Interviewees perceived that medical records staff did not have clinical backgrounds and did not understand clinical work, creating tension between the two groups.</p> <p><i>“Doctors and the medical record room staff have different opinions about codes of diagnosis. The clinical diagnosis and treatment are developing rapidly, but the diagnosis [coding system] of the medical record room is a setback, and the clinical diagnosis is not in line with the clinical reality. At the same time, as a support unit, the staff in the medical record room always give a command to medical doctors.”</i></p>
Ultrasound (n=7)	Working conditions	<p><i>High workload</i></p> <p>Interviewees raised concerns related to extreme high workload and long hours worked by staff for Ultrasound staff, especially medical doctors. For example, 5 to 7 Ultrasound doctors should provide ultrasound examinations to approximately 600 patients a day. In addition to ultrasound examinations, Ultrasound doctors were typically obliged to work in the outpatient clinic one day per week. This was easily resulted in a doctor working from 8 AM to 12 PM the next day.</p> <p>Lacks of staff, the difficulty to find qualified staff, and the increase in patient volume were suggested as some of the causes for the high workload and long hours worked by staff. In addition, there was a perception that the staff patient ratio did not consider staff absence (eg, sickness and pregnancy) and the need for Ultrasound doctors to support other departments.</p> <p><i>“The doctors often do not have time to eat lunch at noon. And it is not always that the 6 consulting rooms can be open</i></p>

Department	Extracted themes	Description
		<p><i>every day, because, for example, every Wednesday afternoon, one Ultrasound doctor needs to go to NICU, another one needs to go to the operating room. If the health check-up center has patients, they also need support from the Ultrasound doctors.”</i></p> <p>Another perceived cause leading to high workload was because of the lack of trust between patients and clinical staff. In general, clinical staff often felt the need to protect themselves from lawsuit by conducting many tests to patients such as the ultrasound examinations.</p> <p><i>Better compensation system</i></p> <p>Interviewees perceived that clinical staff’s basic salary as relatively low. Clinical staff earned financial incentives in addition to their basic salary based on the number of patients that they served or examinations that they conducted. This compensation system was perceived as problematic by interviewees because some patients needed much longer clinical time than did other patients. Thus, interviewees believed that clinical staff in general perceived that the compensation systems should also consider factors other than the number of patients or examinations.</p> <p>Interviewees also raised the compensation issue for the doctor assistants. Doctor assistants were said to receive compensation equal to a receptionist or a cleaning staff. This resulted in a high turnover for doctor assistants.</p>
	Perceptions of hospital management	<p><i>Criteria for performing ultrasound tests</i></p> <p>Interviewees also mentioned that they received many unnecessary additional ultrasound test requests from Obstetrics department. A typical maternity patient was perceived to normally need 4 to 5 ultrasound examinations. However, Ultrasound department could receive as high as 9 ultrasound test requests for a patient. This was because Obstetrics medical doctors were perceived as almost always referring patients with minor complaints to ultrasound department without conducting any physical examinations. This was also linked to the need for clinical staff to protect themselves from lawsuit by conducting many tests. Interviewees expressed the need for the hospital to develop criteria of necessity and rationality for conducting ultrasound examinations.</p>
Pharmacy (n=3)	Safety climate	<p><i>Process of transporting medications</i></p> <p>Interviewees perceived that the process of handling medication for out-patient services was relatively safe because the process was standardized, there was a drug withdrawal system, and a 24-hour clinical pharmacist as an additional support.</p>

Department	Extracted themes	Description
		<p>However, interviewees perceived that the process of handling medication for in-patient was not standardized and thus a risk for patient safety. For example, the process of transporting medication from Pharmacy to in-patient wards was not conducted face-to-face and/or double checked by a clinician (ie, a nurse). The medication was transported by a porter from Pharmacy to unoccupied nurse stations at in-patient wards. Nurses were usually very busy and thus unavailable to receive and double check the medication.</p> <p><i>“The patient number is increased with a high turnover rate, so the nurses are busy. When a porter transports the medication to wards, nurses are not available to receive it face to face. It is then difficult to determine which [parts of the transporting] process is flawed when there is a problem.”</i></p>
		<p>There was usually only one pharmacist working at night shifts. This was perceived by interviewees as a risk for patient safety because of the workload</p>
	Teamwork climate	<p><i>Responsibility of handling medication</i></p> <p>Based on the process of transporting medications, there was a perception that the responsibility for safely handling medication was heavily put on pharmacists. Interviewees mentioned that a shared responsibility handling medication processes between pharmacists and clinical staff was desirable</p> <p><i>Teamwork with medical doctors</i></p> <p>Interviewees said that newly employed doctors often prescribed medication that was not familiar to pharmacists. The pharmacists thus needed longer time to understand the prescription, thus causing delay of care. In addition, during night shifts, medical doctors often asked for medication stored in a distant, locked storage which was only accessible by a pharmacist. Interviewees said that the time to take the locked medication was taking their clinical time, and thus suggested that doctors should just ask for medication that was readily available at the pharmacy’s counter at night.</p>
Laboratory (n=2)	Teamwork climate	<p>Interviewees perceived that there was an unclear responsibility between clinical staff and laboratory staff for the responsibility of collecting and sending sample. Clinical staff believed that laboratory staff were responsible for collecting and sending sample to and from the lab, and vice versa. Interviewees suggested to improve the laboratory processes hospital-wide, especially with regards to collecting and sending sample to and from the laboratory.</p>

Department	Extracted themes	Description
Nutrition (n=2)	Perceptions of hospital management	<p><i>Identification of patients needed special diet</i></p> <p>Interviewees mentioned that dieticians could not access patient information on the hospital IT system to identify patients needed specific diets such as patients with diabetes and hypertension. This limitation made dieticians had to go on ward to check which patients needed special diet, causing dieticians to lose much clinical time. In addition, dieticians expected support from clinical staff to identify these patients. However, interviewees perceived that collaboration with clinical staff usually happened only for giving care for severe diabetic patients.</p>
	Working conditions	<p><i>High workload</i></p> <p>There was only one dietician per hospital site, causing high workload for dieticians.</p>
Administration (n=4)	Teamwork climate	<p><i>Responsibility of the safety of patients</i></p> <p>Interviewees mentioned that most non-clinical staff perceived that patient safety and care were not their responsibility, but the sole responsibility of clinical staff. As a result, for example, broken equipment was not the priority for non-clinical departments.</p> <p>Interviewees said that they knew that patient safety was important. However, their understanding of it in practice was inconsistent, such as how non-clinical staff could contribute, even among senior managers.</p>
Logistics, Medical Equipment, and IT (n=8)	Teamwork climate	<p><i>Overlapping functions</i></p> <p>There were three units responsible for Medical Equipment and IT. As a result, there could be similar several equipment belonged to different departments, and no staff were keeping track which equipment belonged to which department.</p> <p><i>“Logistics responsibilities are not clearly defined so clinical staff could not get [logistical] help in time, such as access control systems are managed by different departments.”</i></p>
	Working conditions	<p><i>Medical equipment and facilities</i></p> <p>Because of the increase in patient volume, the equipment and facilities were being overused and sometimes broken due to improper use. In addition, patients often take home hospital facilities such as soap, toilet paper, and pajamas, causing increased cost for the department.</p>