

Supporting Information (SI)

Table S1. Questionnaire for patients.

Background Information	
Are you a first-time mother, or have you given birth before	<input type="radio"/> First-time mother <input type="radio"/> Have given birth before
What is the reason for your scan at the Fetal Medicine Department at Rigshospitalet?	<input type="radio"/> Scan as part of routine screening <input type="radio"/> Scan performed by a fetal medicine specialist due to suspicion of disease
Satisfaction	
How satisfied are you with the treatment you have received at the Fetal Medicine Department at Rigshospitalet?	<input type="radio"/> Very satisfied <input type="radio"/> Satisfied <input type="radio"/> Neither <input type="radio"/> Dissatisfied <input type="radio"/> Not dissatisfied
Do you feel that the issue you came up with was sufficiently addressed?	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Other (please specify)
Please specify why you are satisfied or dissatisfied. (open-ended)	
Trainees	
Is it acceptable to you that there are trainees present during the scans?	<input type="radio"/> Acceptable <input type="radio"/> Unacceptable <input type="radio"/> Other (please specify)
Is it acceptable to you that a trainee performs the scan under the supervision of an experienced person?	<input type="radio"/> Acceptable <input type="radio"/> Unacceptable <input type="radio"/> Other (please specify)
Expectations for healthcare providers	
What are your expectations for the competencies of the sonographer (midwife/nurse) who performs your scans? (possible to select more than 1)	<input type="radio"/> The individual has completed the training program prescribed in Denmark <input type="radio"/> They don't need to be fully qualified as long as they consult a colleague when in doubt <input type="radio"/> The individual feels competent to perform the task. <input type="radio"/> No expectations <input type="radio"/> Other (please specify)

What are your expectations for the physician performing the scan? (possible to select more than 1)

- I have not been scanned by a physician
- The physician should be an expert in fetal medicine or a specialist in the condition I was referred for
- It is okay if the physician is in training as long as a specialist is supervising them
- No expectations
- Other (please specify)

Midwife consultation

Would you be interested in a midwife consultation immediately after the first-trimester scan to plan the remainder of your pregnancy at Rigshospitalet and ask any further questions about your pregnancy?

- Yes, I am interested in a midwife consultation immediately after the first-trimester scan
 - No, I prefer the current solution where the midwife consultation is between the first and second trimester scans
 - I don't know
-

Table S2. Questionnaire for internal and external healthcare providers.

Profession	
Please specify which hospital you are affiliated with	
Please select the category that best describes your profession	<input type="radio"/> Obstetrician <input type="radio"/> Fetal medicine specialist <input type="radio"/> Obstetric trainee <input type="radio"/> Other (Please specify)
Diagnostics and treatment	
How do you evaluate the accessibility of diagnostics and treatment in the fetal medicine center when referring patients?	<input type="radio"/> Very accessible <input type="radio"/> Accessible <input type="radio"/> Neither <input type="radio"/> Less accessible <input type="radio"/> Not accessible
What do you consider to be the limiting factor for the accessibility of diagnostics and treatment for patients?	
Trainee program at the fetal medicine center	
How do you assess the importance of being able to stay at the fetal medicine center as a part of your trainee program?	<input type="radio"/> Very important <input type="radio"/> Important <input type="radio"/> I don't know <input type="radio"/> Not important
What do you consider to be the limiting factor for the availability of a trainee program at the fetal medicine center?	
Tasks at the fetal medicine center	
What tasks do you think the fetal medicine center should perform? (Multiple selections are allowed)	<input type="radio"/> Assistance with acute scans for the obstetrics department at Rigshospitalet <input type="radio"/> Second opinion on complex patients <input type="radio"/> Highly specialized diagnostics <input type="radio"/> Complicated invasive procedures <input type="radio"/> Training and education in fetal medicine specialists and sonographers <input type="radio"/> Research at a high national and international level <input type="radio"/> Other (Please specify)
Expectations	
To what extent do you believe the fetal medicine center meets your expectations for the examinations?	<input type="radio"/> To a very high extent <input type="radio"/> To some extent

-
- Do not know
 - To a low extent
 - To a very low extent

In your opinion, are the tasks being resolved satisfactorily?

- Yes
- No

Please justify your answer.

Which referral method do you prefer?

- Calling our emergency specialist.
- Written referral only to the clinic without prior telephone contact.
- Both calling/conferencing and a written referral thereafter.

Success at a fetal medicine center

What parameters do you think should be used to measure success at a fetal medicine center?

Please rate each of the following parameters on a scale from 1 to 5, where 5 is the most important, and 1 is the least important.

1 2 3 4 5

Patient satisfaction

Adherence to budget constraints

Waiting times

Patient outcomes

The number of patients given a second opinion

The number of invasive procedures

The number of publications

Funds raised per year

Staff satisfaction

Staff absenteeism

Table S3. Questionnaire for hospital administrators.

Performance tasks	
What tasks do you think the fetal medicine center should perform?	<input type="radio"/> Assistance with acute scans for the obstetrics department at Rigshospitalet
Please rate each of the following parameters on a scale from 1 to 5, where 5 is the most important, and 1 is the least important	<input type="radio"/> Second opinion on complex patients
	<input type="radio"/> Highly specialized diagnostics
	<input type="radio"/> Complicated invasive procedures
	<input type="radio"/> Training and education of fetal medicine specialists and sonographers
	<input type="radio"/> Research at a high national and international level
Success parameters	
What parameters do you think should be used to measure success at a fetal medicine center?	<input type="radio"/> Patient satisfaction
Please rate each of the following parameters on a scale from 1 to 5, where 5 is the most important, and 1 is the least important	<input type="radio"/> Adherence to budget constraints
	<input type="radio"/> Waiting times
	<input type="radio"/> Patient outcomes
	<input type="radio"/> The number of patients given a second opinion
	<input type="radio"/> The number of invasive procedures
	<input type="radio"/> The number of publications
	<input type="radio"/> Funds raised per year
	<input type="radio"/> Staff satisfaction
<input type="radio"/> Staff absenteeism	

Table S4. Survey responses for patients

Survey questions	Survey answers	No of responders (%)
Are you a first-time mother, or have you given birth before?	First-time mother	46 (44.2)
	Have given birth before	58 (55.8)
What is the reason for your scan at the Fetal Medicine Department at Rigshospitalet?	Scan as part of routine screening	53 (52.0)
	Scan performed by a fetal medicine specialist due to suspicion of disease	49 (48.0)
How satisfied are you with the treatment you have received at the Fetal Medicine Department at Rigshospitalet?	Very satisfied	64 (64.6)
	Satisfied	28 (28.3)
	Neutral	5 (5.1)
	Dissatisfied	1 (1.0)
	Very dissatisfied	1 (1.0)
Do you feel that the issue you came up with was sufficiently addressed?	Yes	91 (91.9)
	No	3 (3.0)
	Other	5 (5.1)
Please specify why you are satisfied or dissatisfied. (open-ended)	See table S8	
Is it acceptable to you that there are trainees present during the scans?	Acceptable	97 (99.0)
	Unacceptable	0
	Other (please specify)	1 (1.0)
Is it acceptable to you that a trainee performs the scan under the supervision of an experienced person?	Acceptable	89 (90.8)
	Unacceptable	4 (4.1)
	Other (please specify)	5 (5.1)
What are your expectations for the competencies of the sonographer (midwife/nurse) who performs your scans? (possible to select more than 1)	The individual has completed the training program prescribed in Denmark	73 (77.7)
	They don't need to be fully qualified as long as they consult a colleague when in doubt	37 (39.4)
	The individual feels competent to perform the task	32 (34.0)
	No expectations	4 (4.3)
	Other (please specify)	3 (3.2)
What are your expectations for the physician performing the scan? (possible to select more than 1)	I have not been scanned by a physician	13 (14.0)
	The physician should be an expert in fetal medicine or a specialist in the condition I was referred for	49 (52.7)
	It is okay if the physician is in training as long as a specialist is supervising them	46 (49.5)
	No expectations	4 (4.3)
	Other (please specify)	0
Would you be interested in a midwife consultation immediately after the first-trimester scan to plan the remainder of your pregnancy at Rigshospitalet and ask any further questions about your pregnancy?	Yes, I am interested in a midwife consultation immediately after the first-trimester scan	22 (24.2)
	No, I prefer the current solution where the midwife consultation is between the first and second trimester scans	33 (42.9)
	I don't know	30 (33.0)

Table S5. Survey responses for internal, national, and international healthcare providers.

Survey questions	Survey answers	No of responders (%)		
		Internal n = 12	Ext – national n = 27	Ext – international n = 20
Please select the category that best describes your profession	Obstetrician Fetal medicine specialist Obstetric trainee Other (Please specify)	11 (91.7) 1 (8.3)	2 (7.4) 25 (92.6)	1 (5.0) 19 (95.0)
How do you evaluate the accessibility of diagnostics and treatment in the fetal medicine center when referring patients?	Very accessible Accessible Neither Less accessible Not accessible	9 (75) 2 (16.7) 1 (8.3)	21 (77.8) 6 (22.2)	18 (90.0) 2 (10.0)
What do you consider to be the limiting factor for the accessibility of diagnostics and treatment for patients? (open-ended)	See Table S7			
How do you assess the importance of being able to stay at the fetal medicine center as a part of your trainee program?	Very important Important Do not know Not important	10 (83.3) 1 (8.3) 1 (8.3)	18 (69.2) 4 (15.4) 4 (15.4)	7 (36.8) 6 (31.6) 5 (26.3) 1 (5.3)
What do you consider to be the limiting factor for the availability of a trainee program at the fetal medicine center? (open-ended)	See Table S8			
What tasks do you think the fetal medicine center at Rigshospitalet should perform? (Multiple selections are allowed)	Assistance with acute scans for the obstetrics department at Rigshostpitalet Second opinion on complex cases Highly specialized diagnostics Complicated invasive procedures Training and education of fetal medicine specialists and sonographers Research at a high national and international level Other (Please specify)	10 (83.3) 12 (100) 12 (100) 12 (100) 9 (75.0) 11 (91.7) 3 (25.0)	9 (34.6) 20 (76.9) 20 (76.9) 25 (96.2) 22 (84.6) 25 (96.2) 4 (15.4)	6 (35.3) 12 (70.6) 14 (82.4) 17 (100) 11 (64.7) 14 (82.4) 1 (5.9)
To what extent do you believe the fetal medicine center meets your expectations for the examinations when referring patients?	To a very high extent To some extent Do not know To a low extent To a very low extent	10 (83.3) 1 (8.3) 1 (8.3)	24 (92.3) 1 (3.8) 1 (3.8)	17 (100)
In your opinion, are the tasks being resolved satisfactorily?	Yes No	11 (91.7) 1 (8.3)	26 (100)	16 (94.1) 1 (5.9)
Please justify your answer. (open-ended)	See Table S10			
Which referral method do you prefer?	Calling our emergency physician Written referral only to the clinic without prior telephone contact Both calling/conferencing and a written referral thereafter	11 (91.7) 1 (8.3)	19 (73.1) 7 (26.9)	8 (47.1) 9 (52.9)

Table S6. Thematic analysis of survey results. Healthcare providers were asked what they considered to be the limiting factor for the availability of a trainee program at the fetal medicine center at Rigshospitalet.

Themes	Responses		
	Internal	National	International
<i>Limited resources from own department</i>	<p>There is a lack of resources to free an educational candidate for this.</p> <p>The schedule must work for the whole department.</p> <p>Getting the proper prioritization is necessary, and setting aside enough time is also important.</p> <p>Clinical work, shifts, and other tasks take up time.</p> <p>Present resources/staffing, which limits the possibility of training introductory physicians.</p> <p>Training physicians are used in the production.</p> <p>Only a few fetal medicine departments are needed.</p>	<p>Own department's budget.</p> <p>Economy (3)</p> <p>Home department regarding salary funds.</p> <p>Buy-out from own department.</p> <p>Home department capacity.</p> <p>I cannot be spared from staffing at my regular workplace.</p> <p>Difficult to organize.</p> <p>Whether one can be released from their department.</p> <p>Lack of resources to cover where one is absent while being in fetal medicine.</p> <p>Resources in own department</p> <p>I cannot be in two places at once, so impossible to fulfill.</p> <p>Staff shortage.</p> <p>Too busy to have time for good training.</p> <p>I would prefer if it were an exchange stay, so that we wouldn't lose one.</p> <p>Possibility of freedom from own department.</p>	<p>Funding of stay.</p> <p>Number of available places within the trainee program.</p> <p>Time from my work (5)</p>
<i>Unaware of a trainee program/not in training</i>	<p>Not in training.</p> <p>There is no tradition for specialists to further train in fetal medicine.</p> <p>I am a specialist.</p>		<p>I have not heard about it before so that I would be interested.</p> <p>Not aware of a trainee program</p> <p>Unaware it exists.</p>
<i>None</i>	<p>None.</p> <p>I did not encounter any limiting factors; following a sonographer or a fetal medicine specialist is always possible.</p>	<p>None.</p> <p>I have not experienced limiting factors.</p>	
<i>Other</i>			<p>Distance.</p> <p>Access to invasive patients. I came mainly to learn IUT, but no patient needed it during this period.</p>

Table S7. Healthcare providers and hospital administrators rated parameters from 1 to 5 based on the importance of measuring success at a fetal medicine center. The data is presented as means \pm standard deviation.

	Internal (%)	National (%)	International (%)	Admins (%)
Patient satisfaction, mean \pm SD	4.4 \pm 0.67	4.6 \pm 0.58	3.9 \pm 0.93	4.4 \pm 0.55
Most important	50.0	61.5	23.5	40.0
Important	41.0	34.6	52.9	60.0
Moderately important	8.3	3.8	11.8	0
Slightly important	0	0	11.8	0
Least important	0	0	0	0
Adherence to budget constraints, mean \pm SD	2.7 \pm 0.98	2.4 \pm 1.03	2.1 \pm 1.17	3.8 \pm 0.84
Most important	0	0	5.9	20.0
Important	16.7	11.5	5.9	40.0
Moderately important	50.0	46.2	17.6	40.0
Slightly important	16.7	15.4	35.3	0
Least important	16.7	26.9	35.3	0
Waiting times, mean \pm SD	3.2 \pm 1.12	3.8 \pm 0.88	3.5 \pm 0.94	4.0 \pm 0.71
Most important	8.3	19.2	11.8	20.0
Important	33.3	46.2	41.2	60.0
Moderately important	33.3	26.9	29.4	20.0
Slightly important	16.7	7.7	17.6	0
Least important	8.3	0	0	0
Patient outcomes, mean \pm SD	4.7 \pm 0.42	4.9 \pm 0.33	4.6 \pm 1.00	4.8 \pm 0.45
Most important	66.7	88.5	82.4	80.0
Important	33.3	11.5	11.8	20.0
Moderately important	0	0	0	0
Slightly important	0	0	0	0
Least important	0	0	5.9	0
The number of patients given a second opinion, mean \pm SD	3.7 \pm 1.07	2.7 \pm 0.95	2.9 \pm 1.00	2.8 \pm 0.48
Most important	16.7	3.8	0	0
Important	50.0	11.5	29.4	0
Moderately important	25.0	53.8	41.2	80.0
Slightly important	0	19.2	17.6	20.0
Least important	8.3	11.5	11.8	0
The number of invasive procedures, mean \pm SD	3.8 \pm 1.12	3.0 \pm 1.08	3.7 \pm 1.00	3.2 \pm 0.48
Most important	25.0	3.8	17.6	0
Important	50.0	34.6	41.2	20
Moderately important	16.7	34.6	35.3	80
Slightly important	0	15.4	0	0
Least important	8.3	11.5	5.9	0
The number of publications, mean \pm SD	3.4 \pm 1.31	3.4 \pm 0.76	3.2 \pm 0.90	2.6 \pm 0.55
Most important	16.7	11.5	5.9	0
Important	41.7	19.2	23.5	0
Moderately important	25.0	65.4	58.8	60.0
Slightly important	0	3.8	5.9	40.0

Least important	16.7	0	5.9	0
Funds raised per year, mean \pm SD	2.5 \pm 0.99	2.4 \pm 1.03	2.2 \pm 0.93	2.6 \pm 0.55
Most important	0	0	0	0
Important	8.3	7.7	5.9	0
Moderately important	58.3	53.8	29.4	60.0
Slightly important	8.3	23.1	35.3	40.0
Least important	25.0	15.4	29.4	0
Staff satisfaction, mean \pm SD	4.5 \pm 0.52	4.5 \pm 0.71	3.8 \pm 0.81	4.6 \pm 0.55
Most important	50.0	57.7	17.6	60.0
Important	50.0	30.8	52.9	40.0
Moderately important	0	11.5	23.5	0
Slightly important	0	0	5.9	0
Least important	0	0	0	0
Staff absenteeism, mean \pm SD	3.8 \pm 0.72	3.6 \pm 1.06	3.1 \pm 1.00	3.6 \pm 0.89
Most important	8.3	19.2	5.9	0
Important	75.0	38.5	29.4	80
Moderately important	8.3	26.9	41.2	0
Slightly important	8.3	11.5	17.6	20
Least important	0	3.8	5.9	0

Table S8. Thematic analysis of survey results. Patients were asked to specify why they were satisfied or dissatisfied.

Themes	Responses
<i>The feeling of safety, communication, and well-informed</i>	<p>"Good information ensures a secure process."</p> <p>"Felt in safe hands, received answers to my questions, which concerned me."</p> <p>"I have been thoroughly informed every time and have felt very safe throughout the process."</p> <p>"I feel very secure with how the problem or potential problem I am being examined for is handled."</p> <p>"Created a sense of safety"</p> <p>"There is always time and care for the patients"</p> <p>"I am delighted with the information on the seated staff and the amount of monitoring."</p> <p>"Good information ensures a secure process."</p> <p>"Very nice attention, punctuality, and all the professionals were very kind and clear in their explanations."</p> <p>"Everyone has been very kind and took their time to talk with us."</p>
<i>Professionalism</i>	<p>"Extremely high professional level - to such a degree that I have a reverse white coat syndrome when my blood pressure is measured here."</p> <p>"High degree of follow-up."</p> <p>"I feel that the issue is taken very seriously and that I am receiving a thorough examination."</p> <p>"So far, I am receiving the best care possible, and the professionals are doing all the checks and tests required."</p> <p>"Very nice attention, punctual, and all the professionals were very kind and clear in their explanations."</p>
<i>Welcoming healthcare providers</i>	<p>"Accommodating physician..."</p> <p>"I met a kind and welcoming sonographer who was somewhat familiar with my history and answered my questions."</p> <p>"I always find the staff to be friendly and welcoming."</p>
<i>Waiting times and scheduling</i>	<p>"Sweet and welcoming"</p> <p>"There is a lot of waiting time when it's time to go in."</p> <p>"There has been some confusion with scheduling."</p> <p>"It's a bit exhausting that we have never experienced waiting less than an hour past the scheduled time, even in the mornings."</p> <p>"Most visits have had over 40 minutes of waiting time from the booked time."</p> <p>"Short waiting time, ample time for examination, and reassuring conversation."</p> <p>"No delays."</p>

Table S9. Thematic analysis of survey results. Healthcare providers were asked to specify why they were satisfied or dissatisfied.

Themes	Responses		
	Internal	National	International
<i>Good communication and collaboration</i>	<p>Always a professional and important discussion when decisions are made regarding the patient.</p> <p>The conversation is always good, professional, and friendly.</p> <p>Goodwill and responsibility in the fetal medicine group</p> <p>Always goodwill.</p> <p>I think you are accommodating and make things work.</p> <p>Consistently qualified and accommodating help to get.</p> <p>Good cross-functional cooperation.</p> <p>Nice feedback.</p>	<p>Always dialogue.</p> <p>Good personal communication provides reasonable individual solutions.</p> <p>Good cooperation (3)</p> <p>When we refer patients to RH, it is for clarification of a complicated diagnosis or takeover of a challenging course; I always find that RH lives up to this.</p> <p>We cooperate well with our colleagues at Rigshospitalet.</p> <p>Always encounter kindness.</p> <p>We make an effort and take the time needed.</p>	<p>Accessible communication, very service minded.</p> <p>Always good communication and discussions.</p> <p>Good communication.</p> <p>Incredibly great help for us, fantastic cooperation.</p> <p>I am happy with the work they do.</p> <p>The patients are taken care of.</p> <p>We get primarily good help.</p>
<i>Efficiency and accessibility</i>	<p>If the emergency physician is busy, you can contact another fetal medic.</p>	<p>I always get a quick appointment for the patients we either want a second opinion on or who we think should be seen for another reason.</p> <p>We always get the necessary help, even if they are busy themselves.</p> <p>Quick service means it is always possible to confer with a patient.</p>	<p>Good competence and accessibility.</p> <p>Always available.</p> <p>Available on short notice</p> <p>Quick and thorough 2nd opinion on complicated twin pregnancies.</p>
<i>High-quality service</i>		<p>High-quality</p> <p>It is always possible to get qualified advice.</p>	<p>We see good results.</p> <p>Good response time and high-quality treatment.</p> <p>Good results.</p>
<i>Other</i>	<p>Acute scans can be challenging to get a second opinion on. Scans on admitted patients during the day delay the obstetrician's work.</p>	<p>I want even more cooperation, so we don't have to transfer all the patients we transfer for control and birth at RH.</p> <p>Sometimes, I feel professionally understimulated because I don't see the most challenging patients.</p>	

Table S10. Thematic analysis of survey results. Healthcare providers were asked what they considered to be the limiting factor for the accessibility of diagnostics and treatment for patients at the fetal medicine center at Rigshospitalet.

Themes	Responses		
	Internal	National	International
<i>Time constraints</i>	<p>Busyness, i.e., many patients.</p> <p>Lack of time.</p> <p>Time with a fetal medicine specialist/sonographer in an already overbooked every day.</p> <p>The emergency physician is often busy (but always responds kindly).</p>	<p>Time pressure, but it is rare.</p> <p>Lack of time.</p> <p>I have not experienced limitations, occasionally lack of time.</p> <p>Times with fetal medicine specialists or for super-specialized examination.</p>	<p>Only during the daytime.</p> <p>Holidays.</p> <p>Weekends.</p> <p>It is sometimes difficult to get in contact.</p>
<i>Limited resources</i>	<p>Staff resources.</p> <p>I currently have too little clinical work to follow up on all patients.</p> <p>Too few sonographers' times.</p>	<p>The number of devices, rooms, and physicians.</p> <p>Staff resources.</p> <p>Absence of time with the fetal medicine specialists.</p>	<p>That there is an invasive fetal medicine specialist on call.</p>
<i>No significant limitations</i>	<p>None. Always accommodating, qualified, and meets expectations.</p>	<p>Do not experience limitations.</p> <p>None.</p>	<p>None so far, in my experience.</p> <p>Nothing.</p> <p>No specific.</p>
<i>Geographical distance</i>		<p>Geographic distance, which means a lot to some patients.</p>	<p>Travel time</p> <p>The distance from our hospital</p> <p>Distance</p>
<i>Specific challenges</i>	<p>Good accessibility. It may be limited due to a lack of space.</p>	<p>Parvovirus B19 cases can present challenges, although limitations are rare.</p> <p>Requirement for local investigation before referral. It can be difficult in certain regions.</p> <p>Gestational age.</p>	<p>Maybe language when referring Norwegian patients.</p> <p>Unable to share ultrasound pictures and clips, which could lead to fewer patients sent for 2nd opinion.</p> <p>I want more involvement in discussing available treatments on a general basis.</p>

