

TOWARDS INTEGRATED ANTENATAL CARE FOR LOW-RISK PREGNANCY



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- **The external experts were consulted about a (preliminary) version of the scientific report. Their comments were discussed during meetings. They did not co-author the scientific report and did not necessarily agree with its content.**
- **Subsequently, a (final) version was submitted to the validators. The validation of the report results from a consensus or a voting process between the validators. The validators did not co-author the scientific report and did not necessarily all three agree with its content.**
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LIST OF ABBREVIATIONS

ABBREVIATION	DEFINITION
AIM / IMA	Agence InterMutualiste / InterMutualistisch Agentschap
ANC	Antenatal Care
APR-DRG	All Patient Refined Diagnosis Related Groups
BIM / RVT	Bénéficiaire de l'Intervention Majorée / Rechthebbende Verhoogde Tegemoetkoming
BPPE	Birth Preparation and Parenthood Education
CEpiP	Centre d'Epidémiologie Périnatale
CI	Confidence Interval
CMV	Cytomegalovirus
CPAS / OCMW	Centre Public d'Action Sociale / Openbaar Centrum voor Maatschappelijk Welzijn
EBP	Evidence Based Practice
FPS	Federal Public Service
FTE	Full Time Equivalent
GP	General practitioner
ICC	Individual Counselling Consultation
IQR	Inter Quartile Range
IT	Information Technology
K&G	Kind en Gezin
KPI	Key Performance Indicator
MLCC	Midwife-Led Continuity of Care
NIHDI	National Institute for Health and Disability Insurance
NIPT	Non-Invasive Prenatal Testing
ONE	Office de la Naissance et de l'Enfance



PE	Parenthood Education
R4U	Rotterdam Reproduction Risk Reduction checklist
RHM / MZG	Résumé Hospitalier Minimum / Minimale Ziekenhuis Gegevens
RR	Relative Risk
RSW	Réseau de Santé Wallon
SOI	Severity Of Illness
SPE	Studiecentrum Perinatale Epidemiologie
TMS	Travailleur Médico-Social
UK	United Kingdom
USA	United States of America
WHO	World Health Organization



GLOSSARY

Accredited healthcare professional

Accreditation is the recognition of participation in a range of continuing education activities and peer review sessions (Glem – Groupe local d'évaluation médicale / LOK – Lokale kwaliteitsgroep). Accredited healthcare professionals receive an annual accreditation fee that covers a portion of education activities and additional fees that may vary depending on the discipline.¹

Birth preparation and parenthood education (BPPE)

Birth and parenthood preparation has for a long time been focusing on birth preparation, and more specifically on pain relief during the delivery by other means than drug-induced sedation or general anaesthesia. In 2002, WHO highlighted the need to extend birth preparation to birth and parenthood education.² To help the pregnant woman and her partner in the transition to parenthood, education and information programmes have been developed assuming that increased knowledge will have a positive impact on parental stress, parenting behaviours, parent-child relationship³ and, ultimately on children's developmental outcomes.

There is no evidence-based guideline for birth and parenthood preparation. However, the Belgian antenatal consultation guide ('Guide de consultation prénatale') detailed some useful interventions during the birth and parenthood preparation.⁴ The authors highlighted the need of consistency in the provision of information, the inclusion of the partner in the preparation and the adaptation of the content to the specific needs of future parents. Preparation to birth includes antenatal exercises, psychological adjustment to labour and birth, pain relief in labour, skin-to-skin contact with the newborn and (early) breastfeeding.^{2, 4} Parenthood education may cover the psychological adjustment, the partner's role and non-clinical interventions aiming to prepare parents to cope with mother and baby care and management of the daily life during the postpartum period. Baby care refers to (among others) feeding, hygiene, sleeping of a newborn during the first weeks of life. Mother care refers to care covering the physical health (e.g. recovery after the delivery, health problems related to breastfeeding, etc.) but also to mental health. Management of the daily life refers to the strategies set-up to cope with childcare for the siblings, household.

**Clinical follow-up of low-risk pregnancies**

In the context of low-risk pregnancies, the clinical follow-up consists of a clinical evaluation, a technical examination (foetal heart auscultation and ultrasound), a haematological assessment, an assessment of infectious diseases and a screening for maternal clinical problems (such as gestational diabetes). All interventions regarding the clinical follow-up of low-risk pregnancies and their planning during the pregnancy are described in KCE report 248.⁵

In low-risk pregnancies, all these interventions may be performed by gynaecologists, midwives (except the morphological ultrasound during the second trimester) or GPs (except ultrasounds). It should be noted that midwives are legally authorised to perform ultrasounds during the first and third trimesters but the legal framework (implementing decree) is not yet published. Meanwhile, the ultrasounds are only performed by gynaecologists. In the clinical follow-up program for women with a low-risk pregnancy, the recommended number of clinical follow-up consultations is 7 for the multiparous women and 10 for the primiparous ones.⁵ This number of consultations encompasses the consultations with gynaecologists, with midwives and with GPs involved in the antenatal follow-up.

Contracted healthcare professional

Healthcare professionals who subscribe the agreement between INAMI / RIZIV and sickness funds (called “contracted” healthcare professionals) have to adhere to the negotiated fees and receive certain benefits in return, such as a supplementary pension plan. Healthcare professionals can also be partly contracted (i.e. only during specific hours of the day or week, or when working in specific settings [private setting for example]). If not contracted, they can determine their fees freely (except in some cases mainly in hospital setting).

Co-payment

The co-payment (ticket modérateur / remgeld) is the difference between the official tariff and the amount that is reimbursed by the compulsory health insurance.

Global Medical File

The Global Medical File (Dossier médical global / Globaal medisch dossier) contains all medical data of a patient and is handled by the patient’s GP. It gathers all lab test results, imaging protocols or reports of consultations performed by specialists. For a patient having such a global medical file the co-payment is reduced when consulting his/her GP.⁶

**Low-risk pregnancy**

Defining a low-risk pregnancy requires the identification of risk factors that distinguish low-risk pregnancies from high-risk pregnancies; these latter may require additional care or management. A high-risk status is based on the presence of a distinct (single) medical or obstetric risk for adverse outcomes. Non-medical factors such as low income, lack of social support or young age are also proved to be associated with adverse birth outcomes (e.g. Small for Gestational Age, preterm birth and low APGAR-score).⁷ Listing exhaustively all risk factors is challenging. During the development of the national guideline regarding clinical assessment and screening tests during pregnancy (KCE report 248)⁵, an indicative list of risk factors was provided. Some pregnant women cumulate more than one risk factor from diverse categories. The risk status is never definitive and can evolve during pregnancy, requiring additional care or referral towards specialised services. In the absence of any of these risk factors, a pregnancy is considered as a low-risk pregnancy. This status can potentially evolve during the pregnancy and has to be considered as a temporary status that needs to be regularly monitored until the delivery.

Non-clinical interventions

Non-clinical interventions are defined as “*interventions applied independent of a clinical encounter between a healthcare provider and a patient in the context of patient care*”.⁸ They may target patients, healthcare professionals or healthcare organisations. In the context of this report, we focus on interventions aiming to support pregnant women (and their partners) during pregnancy, to prepare the delivery, the postpartum and the transition to parenthood. These interventions exclude all procedures performed in the framework of the clinical assessment including screening tests. These latter interventions are covered by a KCE guideline on antenatal care (KCE report 248).⁵ Below, the term ‘birth preparation and parenthood education’ is used to refer to non-clinical interventions carried out during the antenatal period.

Out-of-pocket payment

The out-of-pocket payment is the sum of the co-payment and the potential supplement. The supplement is the difference between the freely set fees by non-contracted providers and the negotiated fees. It falls outside the scope of the national health insurance and has to be paid by the patient.



- Preconception counselling** The medical purpose of preconception counselling is the prevention of perturbation in the organogenesis of the main vital organs of the foetus. The whole process of organogenesis ends at the 15th week of the intra-uterine life. However, during the embryo phase (eight first weeks), these organs are more vulnerable. For example, nutritional deficit (folic acid), viral attacks (rubella, varicella) and toxics (such as alcohol, drugs) may impact the development of the nervous system of the foetus. Preconception counselling encourages the adoption of healthy lifestyles (e.g. weight management, eating behaviour, tobacco use cessation, etc.). Besides the medical purpose of the preconception counselling, the psycho-social aspects of the pregnancy and the parenthood can be addressed (e.g. counselling, treating and managing depression in women planning pregnancy and other women of childbearing age). In addition, the purpose of the interconception counselling is to plan a further pregnancy under the best conditions taking into account the previous pregnancy, the circumstances and outcomes of the previous deliveries.⁴
- Postpartum preparation** Postpartum preparation refers to support for the practical aspects of the postpartum period such as the choice of maternity service, the hospital discharge and the return home, the choice of care practitioners for mother and newborn care and the administrative tasks regarding maternity/paternity leave, sickness fund, family allowance, etc.
- Vulnerable pregnant women** Vulnerable pregnant women are women presenting clinical and/or psychosocial risk factors. While clinical risk factors refer to the presence of a maternal pre-existing pathology or the presence of a maternal and/or foetal emerging pathology during the pregnancy, psychosocial vulnerability refers to personal susceptibility to adverse health outcomes due to the presence of reinforcing set of personal and environmental risk often related to deprivation⁹ or poor mental health. In this report, vulnerable women refer mainly to pregnant women with psychosocial vulnerability.



■ SCIENTIFIC REPORT

How to use this document?

This scientific report provides concrete proposals for antenatal care in Belgium and a summary of the findings of each scientific building block underpinning them. It is not intended to be read as a stand-alone document, but as a concise and transversal version of the supplement, which entails detailed description of the methods and findings. In addition, a synthesis including recommendations is available in French and in Dutch.

The synthesis and the supplement are published as separate documents on the KCE website. They can be accessed from the same referral page as the current document.

1 INTRODUCTION

1.1 Antenatal care: objectives and components

Antenatal care (ANC) can be defined as the care provided to childbearing women in order to warrant the best health conditions for both mother and baby during pregnancy to reach the best maternal and child health outcomes. ANC aims to reduce maternal and perinatal morbidity and mortality both directly, through detection and management of pregnancy-related complications, and indirectly, through the identification of women at increased risk of developing complications during labour and delivery, thus ensuring referral to an appropriate level of care.¹⁰ ANC can be delivered by different professionals according to their initial training, their level of autonomy and the initiatives they are authorised to take for the childbearing woman and her unborn baby. Traditionally, obstetricians, general practitioners and midwives look after and deliver advice and care for pregnant women. In Belgium, also physiotherapists contribute to ANC.

In 2016, Downe et al. published a scoping review revealing that what women want and expect from ANC is to have a “positive pregnancy experience” (Box 1).¹¹

Box 1 – Definition of a positive pregnancy experience

A positive pregnancy experience is defined as:

- maintaining physical and sociocultural normality
- maintaining a healthy pregnancy for mother and baby (including preventing and treating risks, illness and death)
- having an effective transition to positive labour and birth, and
- achieving positive motherhood (including maternal self-esteem, competence and autonomy)

Source: Downe et al. (2016)¹¹



The authors promoted woman-centred ANC services covering three equally important domains: 1) clinical care/therapeutic practices, 2) relevant and timely information and 3) psychosocial and emotional support. They highlighted that ANC should be available, safely accessible, affordable, and of good quality. It should offer enough time for each woman to ensure that her particular needs are met, in private spaces that facilitate social exchange between women and staff, and between pregnant women and their peers.¹¹

1.2 Scope of the report

In order to support professionals to ensure their patients a safe and satisfying transition from pregnancy to parenthood, the current report aims to describe and to improve the basic ANC organisation in Belgium. The following research questions were addressed:

1. How is ANC in Belgium organised, used, and financed?
2. What are the barriers and facilitators in the current organisation of ANC?
3. How is ANC organised in a selection of European countries, especially in UK, the Netherlands, France, Ireland, Sweden and Finland?
4. How to organise the ANC in Belgium to tackle the current observed barriers and to offer comprehensive care to all pregnant women?

The report proposes the baseline ANC services that all pregnant women have to benefit from. The baseline care are sufficient for low risk pregnancies and have to be completed with additional interventions for pregnant women who present one or more medical and/or psychosocial risk factors. These additional interventions have to be tailored in function of the particular needs engendered by their medical condition(s), personal characteristics (e.g. teenage mothers) or living conditions (e.g. victims of violence, drug users, obesity). The content of additional interventions are out-of-scope of the report.

The scope of the report focuses on care and support provided by skilled healthcare and social workers during pregnancy until start of labour and delivery. Other non-medical or non-paramedical actors in the field who may assist women before, during, or after childbirth (e.g. doulas) are out-of-scope of the present report. In the same way, interventions dedicated to common physiological symptoms (e.g. medicine use during the pregnancy) and to preventive care (e.g. vaccination) are not covered by this report.

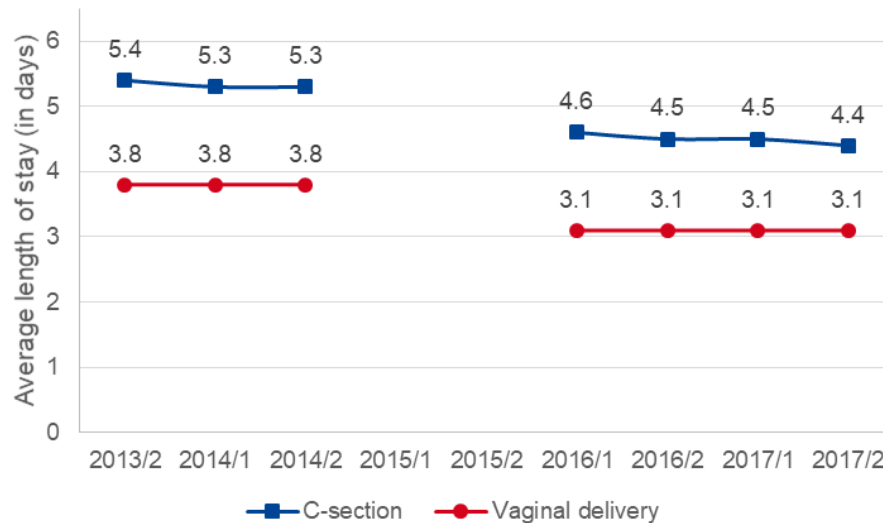
This report completes a series of KCE reports related to pregnancy and delivery.¹² From this series, two reports are closely linked to ANC organisation. Firstly, KCE report 248⁵ proposed an evidence-based guideline on recommended clinical assessment and screening tests during a low-risk pregnancy (see definition in the Glossary). Secondly, KCE report 232¹³, dedicated to the organisation of postnatal care, recommended to integrate postnatal and antenatal care by means of a comprehensive pathway. The authors argued that high quality postnatal care needs to start during pregnancy, especially in case of short hospital stays after an uncomplicated delivery. As shown in a trend analyse of RHM/MZG data (see Figure 1), a shortening of maternity stay was observed these last years for both vaginal and caesarean deliveries with a low level of severity (APR-DRG SOI 1). The KCE report 232¹³ also stressed the importance of an early screening for medical and psychosocial vulnerabilities.

The current report provides a transversal analysis of all data collected, and suggests an ANC pathway coupled with recommendations for decision-makers and ANC professionals. The report is structured as follows: the terms used throughout the report are defined in the Glossary and all methods used in the report are presented in chapter 2. Chapter 3 is dedicated to the description of the current organisation and the evolution of ANC in Belgium, including the clinical follow-up of the pregnancy and non-clinical interventions. The legal framework of ANC and all current protective measures for (vulnerable) pregnant women are depicted in chapter 4. Challenges in the organisation of ANC as perceived by parents and healthcare professionals are reported in chapter 5. Chapter 6 gives an overview of models of antenatal care and the lessons learned from abroad.

Based on the findings of these chapters, concrete proposals for the future organisation of ANC in Belgium are detailed in chapter 7.



Figure 1 – Evolution of the average length of stay (in days) for deliveries with a low level of severity (SOI 1) in Belgium (2nd semester 2013 - 2nd semester 2017 [last data available])



Source: RHM / MZG; no data were recorded in 2015

2 METHODS

2.1 A multimodal approach

A multimodal approach was followed combining literature reviews, quantitative and qualitative research methods. Firstly, literature reviews were performed to describe the ANC models and pathways adopted in other European countries, and to identify the existing non-clinical interventions preparing for childbirth and supporting the (transition to) parenthood. In addition, a narrative description of laws and Royal Decrees was performed to map the scope of each professional practice involved in ANC and the protective measures for (vulnerable) pregnant women. Secondly, data of care consumption were analysed using quantitative methods such as descriptive and multivariate statistics (e.g. logistic regression). Finally, qualitative methods (i.e. workshops and face-to-face interviews) allowed to identify on the one hand the range of non-clinical interventions used in Belgium, and on the other hand, strengths and shortcomings in the Belgian organisation of ANC, as perceived by healthcare professionals and parents. The detailed description of these methods and the results obtained can be found in the supplement.

2.2 Formulation of recommendations

To formulate relevant recommendations for the future organisation of ANC, a plan with concrete proposals and their respective action points was drafted by the KCE team and discussed with a panel of experts and stakeholders during a workshop that took place on 23rd September 2019.

An electronic voting system called Turningpoint^a was used, showing directly the results of the votes on a PowerPoint® presentation during the meeting. The objectives of this voting procedure were not to suppress proposals or action points nor to add new ones, but to amend proposals and action points regarding feasibility and wording.

^a <https://www.turningtechnologies.com/turningpoint/>



1st voting round

After a short introduction about the purpose of the exercise, each statement was voted upon by the participants. Participants were given two response options:

- a. "agree" if the respondent agreed to adopt the proposal/action point in its current form.
- b. "disagree" if the respondent asked for an amendment of the proposal/action point.

People who had no opinion on a particular statement were asked not to vote. The votes were anonymous.

We defined consensus for acceptance as "75% or more of the respondents voted "agree"". If a consensus was reached, the proposal/action point was adopted.

If no consensus was reached or there was a consensus on disagreement (>75% votes "disagree"), the proposal/action point was discussed during the plenary meeting and amendments were proposed.

2nd voting round

The proposals/action points that did not reach consensus at the first round were discussed and reformulated in order to reach a consensus. An amended formulation was submitted to a 2nd voting round according to the same rules.

3 ANTENATAL CARE IN BELGIUM

3.1 Clinical follow-up of the pregnancy: settings, actors and use of services

3.1.1 *Antenatal care settings engaged in the clinical follow-up of the pregnancy*

Different settings are available for the clinical follow-up of the pregnancy, including hospitals, private practices and other centres. Mothers-to-be may freely choose between these settings (and may modify this choice) as laid down in Patient's rights law.¹⁴

Hospitals

Hospitals with a maternity service organise antenatal consultations. Depending on the hospital, the clinical follow-up is carried out by gynaecologists, midwives or by gynaecologists and midwives alternating. The three ultrasounds reimbursed by the NIHD are always performed by gynaecologists.

Private practices

Ambulatory antenatal consultations for clinical follow-up are provided by gynaecologists, midwives or GPs. The private practice may be organised in solo or group practices. However, ultrasounds are performed by gynaecologists whose private practices are equipped for (morphological) ultrasounds. Future mothers may be referred to other private practices of gynaecologists or to hospitals when the treating gynaecologist has not the required equipment. At well-equipped hospitals and private practices, some gynaecologists focus their activities on performing (morphological) ultrasounds.



Other settings

While Kind & Gezin (K&G)^b offers clinical follow-up targeting vulnerable pregnant women, medical houses, family planning centres, and Office de la Naissance et de l'Enfance (ONE) provide clinical follow-up for all pregnant women irrespective of their personal and financial situation, but with a special attention to vulnerable ones.

Family planning centres include gynaecologists in their teams whereas the services delivered by the other centres are mainly provided by primary care providers. For ultrasounds, women are referred to gynaecologists. The interested reader can find a more complete description of these settings in the supplement (see section 2.2).

3.1.2 Antenatal care providers engaged in the clinical follow-up of the pregnancy

What you need to know before reading this section

This section is based on data coming from various sources:

- The Planning Unit for Healthcare Professions Workforce within the Federal Public Service Public Health provided statistics related to healthcare professionals on 31 December 2017 (head counts and full-time equivalents [FTE]);
- The care consumption is described using AIM/IMA administrative data related to (insured) pregnant women's characteristics (age, residence, insurance coverage...), all reimbursed healthcare services (consultations, medical procedures...), and reimbursed pharmaceuticals from public pharmacies by the National Institute for Health and Disability Insurance (NIHDI).

Only data for insured women were retrieved from this database. No data are available regarding uninsured or undocumented pregnant women (e.g. asylum seekers, non-official residents, indigent persons without mandatory health insurance). Women who reside in Belgium but benefit from a foreign insurance are also excluded from this Belgian database.

- The selection of pregnancies was based on the deliveries occurring during the period from 1 January 2010 to 31 December 2016. The antenatal period is defined as 280 days before the date of delivery. For the purpose of this report, only low-risk pregnancies were selected. The selection was based on the exclusion of pregnancies with one or more risk factors that could be identified in the available administrative databases (i.e. age <18 and age >40, women with pre-existing comorbidities, women with at least one individual midwifery session dedicated to high-risk pregnancy or necessary presence of a paediatrician at delivery). Selection and statistical methods are detailed in the section 5.2 of the supplement. The interested readers can find sociodemographic characteristics of the pregnant women in the same chapter.
- Official tariffs negotiated by the Committee on Agreements between healthcare providers and insurers, reimbursement and out-of-pocket payments by healthcare practitioner, applicable since 1 January 2019, are publicly available on the NIHDI website. Summarised information is reported in this document while more details regarding the financial framework for ANC are provided in section 2.3.1. of the supplement (remuneration of healthcare professionals, negotiated fees, reimbursement, co-payments, supplements and out-of-pocket payments).

^b In 2019, the Flemish agencies K&G, Jongerenwelzijn (youth welfare) and VAPH (Flemish agency for persons with a handicap) will be merged into one agency 'Opgroeien' (growing-up) to be able to support families even better.



3.1.2.1 Gynaecologists

Supply of gynaecologists

In Belgium, obstetricians are also gynaecologists. Therefore, in the present report, we mainly used the term 'gynaecologists'. In 2017, 1 703 gynaecologists were licensed to practice in Belgium (835 in Flanders, 582 in Wallonia and 286 in Brussels).¹⁵ Their number is expected to grow in the near future, but the workforce, expressed in FTEs, will evolve differently in each Community. In the French Community, a decrease may even occur in the coming years.

Gynaecologists combine activities in gynaecology and obstetrics, but the percentage of the workforce dedicated to obstetrics is unknown. In ANC, gynaecologists are entitled to perform medically assisted procreation and to follow both high- and low-risk pregnancies. More details can be found in section 2.1.1. of the supplement.

Use of gynaecologist consultations

As depicted in Figure 2, almost all (low-risk) pregnant women (99.5%) covered by healthcare insurance had consulted a gynaecologist at least once during their pregnancy in 2016. This pattern was quite similar in all regions and remained stable between 2010 and 2016. The median number of consultations provided by gynaecologists was also relatively comparable between regions (median number of consultations in Flanders 10 (IQR=5), Wallonia 11 (IQR=5), Brussels 10 (IQR=5) – see Figure 3).

All consultations are charged on a fee-for-service basis. Negotiated fees for a consultation with a gynaecologist (amounting to 21.44€ for non-accredited gynaecologists and 26.27€ for accredited ones) are consistent with other medical specialists' consultation fees. For each consultation with a contracted gynaecologist, the co-payment for the patient equals 12€ but lowers to 3€ for women entitled to increased reimbursement (BIM/RVT).

Because non-contracted healthcare professionals may freely set their tariffs, the out-of-pocket payment may greatly vary, rendering the amounts to be paid by the patient unpredictable. More details are provided in section 2.3.1 of the supplement.

3.1.2.2 Midwives

Supply of midwives

The professional activities of a midwife cover antenatal activities, activities related to labour and delivery and activities related to the postnatal period (Art. 62 – Law of 10/05/15).¹⁶

For low-risk pregnancies, antenatal activities of a midwife encompass^c:

- Clinical follow-up including:
 - provision of family planning information and advice,
 - diagnosis of pregnancies and monitoring low-risk pregnancies,
 - prescribing or advising on the examinations necessary for the earliest possible diagnosis of pregnancies at risk.
- Birth preparation and parenthood education including provision of parenthood preparation programmes.

From 2006, the midwifery competences were extended to drugs prescription, perineal rehabilitation and performing ultrasounds.¹⁷ The drug prescription is organised by two Royal Decrees (2013)¹⁸ but perineal rehabilitation and performing ultrasounds are awaiting the implementation decree. This means that practically the midwives may prescribe a limited list of drugs after an appropriate training but may not yet perform perineal rehabilitation, nor ultrasounds despite the legal extension of their competencies.

^c Beside low-risk pregnancies, a midwife can manage, under a physician's responsibility, the treatment of fertility problems, high-risk pregnancies, high-risk deliveries, neonates with a life-threatening condition (Law of 10/05/2015).



In 2017, 11 401 midwives were licensed to practice in Belgium (7 723 in Flanders, 2 843 in Wallonia and 835 in Brussels).¹⁵ According to the forecasting model of the Planning Unit for the Healthcare Professions Workforce, the workforce of midwives will approximately double in 25 years, from 3 762 FTE in 2014¹⁹ to 7 542 FTE in 2039.²⁰ More details can be found in section 2.1.2. of the supplement.

Use of midwife consultations

In 2016, 55% of all low-risk pregnant women had consulted a midwife at least once for a clinical follow-up (see Figure 2). This pattern was quite similar in all regions. The proportion of women with at least one midwife consultation increased from 30.7% to 55.4% during the period 2010 – 2016. This growth was more spectacular in Wallonia (from 32.8% to 60.1%) and in Flanders (from 26.4% to 53.1%) than in Brussels (from 43.2% to 55.0%). This is probably due to an earlier introduction of midwives in the clinical follow-up in Brussels (see Figure 20 in the supplement).

In 2016, for low-risk pregnant women with a midwife follow-up, the median number of midwifery consultations was 2 (IQR=3) in Belgium. While in Brussels pregnant women with a midwifery follow-up consulted 3 times their midwife (IQR=3) in 2016, this number was 2 (IQR=3) and 2 (IQR=2) respectively in Flanders and in Wallonia (see Figure 3).

The proportion of women with a mixed follow-up (combining gynaecologist and midwife consultations) increased over time from 31% in 2010 to 55% in 2016 (see Figure 27 of the supplement). Differences between regions fade over time: the proportion of pregnant women followed in 2016 by a gynaecologist and a midwife amounted to 53% in Flanders, 54% in Brussels and 60% in Wallonia. Nevertheless, these proportions hide an important intraregional variability (see mapping presented at Figure 28 in supplement).

No relationship between the use of midwives and the geographical distribution of gynaecologist density^d was observed.

Very few low-risk pregnant women (0.3%) were exclusively followed by midwives (and possibly by GPs, but not by gynaecologists) and did probably not benefit from ultrasounds; 44% had an exclusive pregnancy follow-up performed by gynaecologists (and possibly by GPs, but without midwife's intervention).

All midwife consultations are charged on a fee-for-service basis. A first consultation must last at least 60 minutes and a follow-up consultation at least 30 minutes. Negotiated fees for a clinical follow-up consultation with a contracted midwife (from 27.06€ from the 2nd session to 37.88€ for the 1st session)^e are consequently higher than fees negotiated for a gynaecologist's consultation, without minimal required duration (21.44€ for non-accredited gynaecologists and 26.27€ for accredited gynaecologists)^f:

- No co-payment is asked for contracted midwives.
- Non-contracted midwives are free to ask a higher tariff but only for women who are not entitled to the increased reimbursement scheme. However, NIHDI reimbursement is limited to 28.41€ for the first session and 20.30€ for the following ones. Therefore, for women who are not entitled to increased reimbursement, the out-of-pocket cost is at least 9.47€ for the first clinical follow-up session and 6.76€ for the following ones (for more details see section 2.3.1. of the supplement).

^d The gynaecologist density is the number of active gynaecologists by 10 000 inhabitants.²¹

^e These amounts correspond to fees negotiated for midwives on 1 January 2019

^f These amounts correspond to fees negotiated for gynaecologists on 1 April 2019



3.1.2.3 General Practitioners

Supply of GPs

Pregnancy follow-up can also be ensured by a GP. In 2017, there were 15 989 GPs in Belgium (8 982 GPs residing in Flanders, 5 425 in Wallonia and 1 582 in Brussels; 10.7 FTE/10 000 inhabitants in the Flemish Community and 8.1 FTE/10 000 inhabitants in the French Community).^{22, 23} More details can be found in section 2.1.4. of the supplement.

Use of GP consultations

The nomenclature codes do not allow to disentangle ANC activities from other medical procedures. GP consultations during pregnancy are used as a proxy for ANC provided by a GP but the reader must keep in mind that this approximation is an overestimation.

Although these results should be considered as illustrative, a fifth of all pregnant women did not consult their GP during pregnancy in 2016. Variation in the pattern of GP consultations was observed between regions. In Flanders, 9 out of 10 women consulted their GP during pregnancy, 7 out of 10 in Wallonia but only 5 out of 10 in Brussels (see Figure 2). From 2010 to 2016, the median number of GP consultations during pregnancy was stable but a higher use was observed in Flanders. In 2016, the median number of GP consultations (for pregnant women consulting their GP at least once) was 4 (IQR=4) in Flanders, 2 (IQR=3) in Brussels and 2 (IQR=3) in Wallonia. In addition, no inverse relationship between the number of GP consultations and the number of consultations provided by other healthcare professionals (gynaecologists and midwives) was found. In 2016, only 0.2% of the pregnant women attended solely GP consultations during their pregnancy. This proportion remained fairly stable across regions and during the 7-year study period. A more detailed analysis is provided in section 5.3.2.4. of the supplement.

These GP consultations are charged on a fee-for-service basis (for more details about reimbursement see section 2.3.1. of the supplement). When a contracted GP is consulted, the co-payment for the patient is 6.00€ (4.00€ for those with a Global Medical File (Globaal medisch dossier / Dossier médical global)). However, for patients entitled to an increased reimbursement, the co-payment decreases to 1.5€ (1€ for patients with a Global Medical File). Non-contracted GPs are free to ask a higher tariff.

Figure 2 – Proportion of low-risk pregnant women who attended at least one consultation during their pregnancy by healthcare professional, in 2016

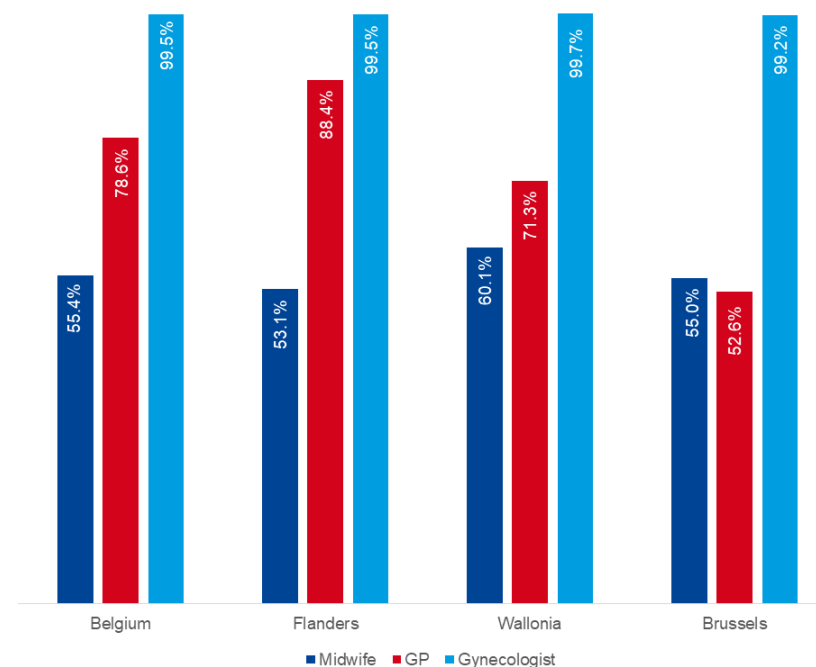
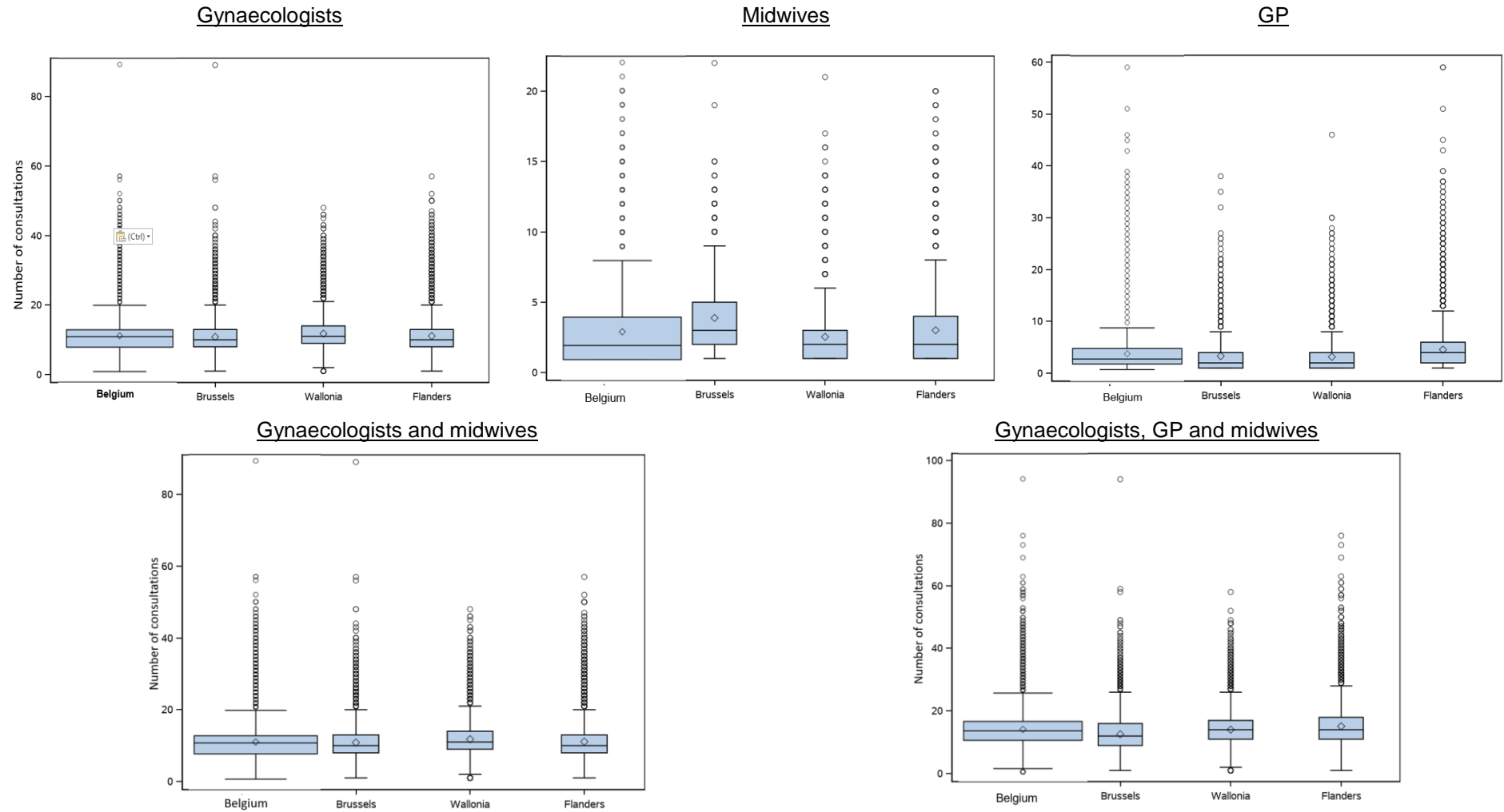




Figure 3 – Number of ANC consultations (2016) for clinical follow-up by provider per region (n= 87 436 pregnant women)



Note. Only women with at least one consultation were included



3.1.3 Adherence to the KCE guideline⁵

Overall, Belgian women met 15 times a healthcare professional (IQR=7) during their pregnancy in 2016 (detailed results by region are available in Table 10, section 5.3.2.1 of the supplement). As depicted in Figure 3, they consulted 12 times a gynaecologist and/or a midwife (IQR=5) and 3 times a GP (IQR=3).⁹ This median number of contacts with healthcare professionals is higher than those recommended in KCE guideline (i.e. 10 antenatal consultations with healthcare professionals for a primipara and 7 for a multipara).⁵ Because AIM/IMA database does not record the parity of pregnant women, it was not possible to link care consumption to parity.

Therefore, we defined high use of care when a woman used more than 10 consultations during the pregnancy period and low use for those using less than 7 consultations. This approach involves a certain number of limitations described in section 5.4.1 of the supplement. As shown in Table 1, less than one third of the women (27%) benefited from 7 to 10 consultations provided by a midwife or a gynaecologist in Belgium (more details can be found in Figure 10 and in Table 10 of the supplement describing the antenatal care consumption in 2016). This proportion is reduced to 11% when GP consultations are included.

Table 1 – Distribution of antenatal consultations by region, 2016

	Brussels (n=11 319)	Wallonia (n=25 582)	Flanders (n=49 724)	Belgium (n=87 161)
Distribution of consultations with a gynaecologist, a midwife or a GP during the pregnancy				
% of women with less than 7 consultations	6	3	3	4
% of women with 7 to 10 consultations	16	11	11	11
% of women with more than 10 consultations	78	86	86	85
Distribution of consultations with a gynaecologist or a midwife during the pregnancy				
% of women with less than 7 consultations	8	4	7	6
% of women with 7 to 10 consultations	23	20	31	27
% of women with more than 10 consultations	69	76	62	67

⁹ Median number of consultations for women who consulted the healthcare professional. When all women were taken into account, the median number of GP consultations was lower [median 2 (IQR 4)].



Some differences are observed over time and according to the region considered. Firstly, during the period 2010-2016, the proportion of women whose healthcare consumption fitted with recommended numbers dropped from 35% in 2010 to 27% in 2016 when GP consultations are excluded and from 15% in 2010 to 11% in 2016 when GP consultations are included. Women who consulted more frequently their GP during pregnancy also tended to consult more frequently gynaecologists and midwives. More details are available in section 5.3.2.3 and in Figure 30 of the supplement. Secondly, there is a regional difference due to the different pattern in healthcare system usage. As previously reported, pregnant women consulted more often a GP in Flanders compared to the other regions: in Flanders in 2016, the proportion of pregnant women using the recommended range of consultations was 31% when GP consultations were excluded and only 11% when GP consultations were included (Table 1). Such difference is lower in the other regions (Brussels from 23% to 16% and Wallonia from 20% to 11%).

Overuse of antenatal care

When using the above-mentioned definition of high use, the proportion of high users in 2016 ranged between 67% and 85% depending on the inclusion or exclusion of GP consultations. Globally the proportion of women using more than 10 antenatal consultations with a gynaecologist, a midwife or a GP has increased over time, in the three regions of the country (see Figure 17 of the supplement). This growth was observed between 2010 and 2016 in Flanders (from 81% to 86%), in Wallonia (from 82% to 86%) and in Brussels (from 74% to 78%). The lowest proportion of high users was observed in Brussels. An analysis within regions showed no important variation in 2016 (see Figure 18 and Figure 19 of the supplement).

When GP consultations were excluded from the analyses, the increase of ANC consultations was still more pronounced, suggesting a rise in the consumption of consultations provided by gynaecologists and midwives.

The proportion of pregnant women with more than 10 consultations with a midwife or a gynaecologist increased in all regions between 2010 and 2016 (in Flanders, from 50% to 62%; in Brussels, from 64% to 69%; in Wallonia, from 68% to 76%). Besides, a higher risk of using more than 10 ANC consultations was observed in older pregnant women (30-40y), in pregnant women living in a non-urban setting and in unemployed women (see section 5.3.2.3 and Table 15 in the supplement).

Figure 4 depicts the evolution between 2010 and 2016 of the average numbers of consultations during a low-risk pregnancy for Belgium and by region. We note a growing trend in the consumption of consultations in the 3 regions, whether or not GPs are included in the analyses.

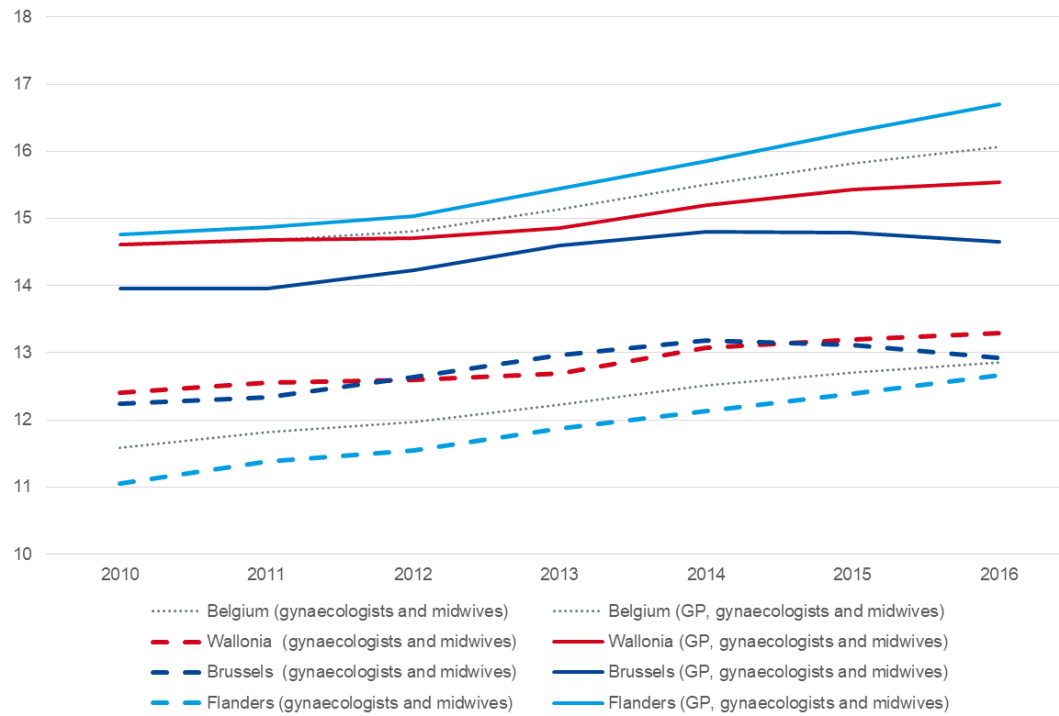
The notion of overuse must be interpreted with caution because of the limitations of the AIM/IMA data (e.g. the definition of low-risk pregnancies) and because numerous reasons may justify to deviate from the recommended number of ANC consultations:

- Post-term pregnancies requiring more intensive follow-up before delivery;²⁴
- Multiple pregnancies requiring a more intense clinical follow-up;
- Non-identified risks requiring additional consultation(s);
- Unclear imaging requiring additional echography to confirm previous results;
- Warning signs requiring additional consultation(s) (e.g. bleeding, no more baby's movement, preterm uterine contractions, hard belly, etc.);
- Various accidents at home or at work requiring additional diagnostic consultation(s).

More details can be found in the supplement (see section 5.4.).



Figure 4 – Evolution of the average numbers of consultations during low-risk pregnancies by region





Underuse of antenatal care

- Absence of follow-up

In 2016, 44 insured women did not benefit from any clinical follow-up during the pregnancy (i.e. 0.05% of the low-risk pregnant women) and 183 insured women did not attend any gynaecologist or midwifery consultation (i.e. 0.21% of the low-risk pregnant women). These numbers probably hide another reality because uninsured pregnant women were not taken into account in our analyses. We estimated that vulnerable women not captured in the AIM/IMA database in 2016 represented 2% of the women who delivered in Flanders and in Wallonia and 6% in Brussels. Among these women, the proportion of women with no, insufficient or late pregnancy follow-up is unknown. More details are available in section 5.3.2.2 of the supplement.

- Underuse

Although the number of antenatal consultations seemed to increase over time, 4% of the low-risk pregnant women in Belgium still did not reach the threshold of 7 antenatal consultations. This proportion was approximately twice as high in Brussels than in the other regions (see Table 1). Women at higher risk of underuse are the ones entitled to increased reimbursement scheme, self-employed women and women living in urban settings. Mapping shows that Brussels, Antwerp and Arlon had higher proportions of under-users.

If only gynaecologist and midwife consultations were considered, the threshold of 7 antenatal consultations was not reached by 6% of the low-risk pregnant women. Brussels and Flanders showed a higher proportion of low users than Wallonia (see Table 1). The same pregnant women characteristics were associated with higher risk of underuse. The mapping slightly differed from the previous one. Districts identified were Antwerp and Brussels but also Leuven, Ostend and Bruges. Maps and detailed statistical analyses are available in section 5.3.2.2 of the supplement.

- Late follow-up

During the first half of the pregnancy (between 280 and 140 days before the delivery), 3% of the women in Belgium had no follow-up at all in 2016 and 4% had no consultation with a gynaecologist nor a midwife. In Brussels, this proportion increased to 7% of women without antenatal consultation during the first 20 weeks of pregnancy (vs. 4% in other regions). From 2010, these proportions remained quite stable in Flanders and Wallonia and decreased in Brussels.

During the second half of the pregnancy, women consulted, on average, 4 times a gynaecologist, 2 times a GP and less than 1 time a midwife (Belgium – 2016). In Flanders, women consulted more frequently a GP while no difference was observed for midwifery and gynaecologist consultations between regions. Disabled, self-employed women and beneficiaries of increased reimbursement presented a higher risk to start late their pregnancy follow-up in comparison with other women. Detailed statistical analyses are available in section 5.3.2.2 of the supplement.

Key messages

Actors involved in ANC and financial framework

- **Gynaecologists, midwives and GPs are the main providers of clinical pregnancy follow-up. They organise their practice in several settings: hospitals, private practices and to a lesser extent in community practices.**
- **ANC services are mainly charged on a fee-for-service basis. For contracted healthcare practitioners, the co-payment for the patient (without entitlement for increased reimbursement) varies from 0€ (for midwives' consultations) to 12€ (for gynaecologists' consultations).**

Use of ANC in Belgium

- **The clinical follow-up of low-risk pregnancies is mainly performed by gynaecologists and midwives. Increasingly, pregnant women combine antenatal consultations provided by gynaecologists and midwives, without reducing ones to the benefit of the others, leading to an increasing number of antenatal consultations over time.**



- Using less than 7 antenatal consultations or having no contact with a healthcare professional during the 20 first weeks of pregnancy accounts, respectively, for 4% and 3% of the pregnant women covered by social security. The proportion is higher in Brussels than in the other regions. Women entitled to increased reimbursement, disability and self-employment are factors associated with higher risk for insufficient antenatal follow-up (i.e. no follow-up during the whole antenatal period, or during the first half, incomplete follow-up with less than 7 consultations with a healthcare professional).
- Absence of clinical follow-up is very uncommon (0.05% of insured pregnant women in 2016). However, no data are available regarding uninsured or undocumented pregnant women (asylum seekers, non-official residents, indigent persons without mandatory health insurance, etc.).
- The majority of pregnant women (from 67% to 85% in 2016 depending if GP consultations are counted in ANC or not) uses more than 10 antenatal consultations. Women living in a non-urban setting, older pregnant women (30-40y), and unemployed women have a higher probability to use more than 10 gynaecologist or midwife consultations during their pregnancy. Many reasons that cannot be captured by administrative data may justify to deviate from the recommended number of ANC consultations.
- The involvement of GPs during pregnancy remains limited. However, the pattern of GP use differs according to the region. The Flemish GPs are more often consulted by pregnant women than in the other regions. The GP consultations do not replace gynaecologist nor midwife consultations. Their role is rather complementary. Very few pregnant women (0.16%) only consult their GP. However, available data hamper to determine whether a pregnant woman consults the GP for pregnancy follow-up or for a health issue occurring during pregnancy.

3.2 Birth preparation and parenthood education (BPPE)

In the context of this report, **BPPE covers physical and psychological birth preparation and non-clinical interventions for parenthood education, provided during the antenatal period** (see Glossary). Diagnostic procedures, clinical assessment and screening tests are not considered as BPPE. These interventions are covered by a dedicated KCE guideline (KCE report 248).⁵ Non-clinical intervention programs aim to prepare parents-to-be not only for childbirth but also to tackle the specific psychological and social aspects of (the transition to) parenthood.

A large range of non-clinical interventions are already proposed to mothers-to-be in Belgium. Some of them are organised at the federal level and financed by the NIHDI, others are financed by the Communities and organised by ONE, K&G and Kaleido. In addition, private initiatives are also developed by healthcare professionals (e.g. physiotherapy group sessions at hospital, antenatal singing with a midwife) or by other professionals such as musicians or yoga trainers. These private initiatives are not recognised by health authorities and hence not financed by the NIHDI.

3.2.1 Birth preparation sessions financed by the NIHDI

3.2.1.1 Interventions provided by midwives

Midwives provide birth preparation through individual as well as group sessions. These sessions are reimbursed for birth preparation but, in practice, midwives may provide parenthood education during their birth preparation sessions or in separate sessions, which cannot be identified by nomenclature data. In addition to birth preparation sessions carried out by midwives in private practice, individual or group-based information sessions regarding breastfeeding, parenthood, administrative issues linked to birth, organisation of the postpartum period, return to work, etc. are also delivered in hospital settings.



A pregnant woman is per pregnancy entitled to a number of sessions equivalent to a maximum of 120 V-values for antenatal preparation. The 'V' is a key letter used in the nomenclature for midwives (fee schedule). For more details about key letter, the interested reader is referred to Box 3 in section 2.3.1.1. of the supplement. The coefficient associated with the key letter V varies depending on whether the session is individual (10V), in a group of 2 to 5 pregnant women (8V) or in a group of 6 to 10 pregnant women (5V). Some women receive both individual and group birth preparation, so combinations are also possible. All sessions have to last a mean of 60 minutes. Negotiated fees for birth preparation differ according to the number of participants (i.e. 18.04€ for individual sessions, 14.43€ for collective sessions with 2-5 participants, and 9.02€ for collective sessions with 6-10 participants). The out-of-pocket cost is at least 4.51€ for individual session, 3.60€ for a collective session grouping 2 to 5 pregnant women and 2.25€ for a collective session grouping 6 to 10 pregnant women (for more details see section 2.3.1. of the supplement).

3.2.1.2 *Interventions provided by physiotherapists*

All physiotherapists are entitled to perform perinatal physiotherapy^h. However from 2015, a specific professional qualification in abdomen and pelvic rehabilitation and antenatal physiotherapy has been set up.²⁵ Until now, this recognition is not mandatory to practice in the ANC field. In 2017, 341 physiotherapists had a professional competence in abdomen and pelvic rehabilitation and antenatal physiotherapy (i.e. 1% of all physiotherapists in Belgium).¹⁵ More details can be found in section 2.1.3. of the supplement.

Physiotherapists provide birth preparation as well as interventions related to musculoskeletal and pelvic floor disorders. These sessions may be provided in group or individually. However, because only individual sessions are covered by the NIHDI on a fee-for-service basis, the proportion of women who benefited from group sessions is unknown. Physiotherapists may charge 9 individual sessions during the perinatal period.

The co-payment varies according to the woman's status (entitlement to increased reimbursement or not) and the physiotherapist's status (contracted or not). More details are available in section 2.3.1. of the supplement.

3.2.1.3 *Consumption of birth preparation sessions financed by the NIHDI*

Dedicated nomenclature codes set the negotiated fees and the reimbursement rates for individual and group midwifery sessions and for perinatal activities performed by physiotherapists. Nevertheless, non-dedicated codes of physiotherapy are also used during pregnancy, for diverse activities including birth preparation by physiotherapists. Therefore, in the following analyses, the '**narrow definition**' refers to birth preparation by physiotherapists and midwives when midwifery codes and perinatal codes of physiotherapy were used while the '**broad definition**' encompasses midwifery codes, perinatal codes and general codes of physiotherapy. More details can be found in section 5.3.3. of the supplement.

Globally, birth preparation, whatever the type of provider (physiotherapist or midwife), was increasingly used over time, irrespective of the definition (narrow definition: from 30% in 2010 to 38% in 2016 – broad definition: from 36% in 2010 to 44% in 2016). The proportion of pregnant women benefiting from such a preparation in 2016 was quite similar in all regions (narrow definition: Brussels 36%, Flanders 38%, and Wallonia 37% – broad definition: Brussels 39%, Flanders 46%, and Wallonia 42%). Birth preparation was mostly delivered by only one type of provider and was increasingly led by midwives. However, large intraregional disparities were observed at the district level: using narrow definition, birth preparation was very uncommon (less than 25% of the women) in Ieper, Mouscron, Veurne and Arlon while it was much more frequent (more than 50% of the women) in Nivelles and Leuven. More details are available in Figure 33 of the supplement.

^h 'perinatal' has to be understood as 'before, during and after' the delivery



Pregnant women older than 30 years, disadvantaged women, self-employed women, and unemployed women showed a higher risk of absence of birth preparation. Detailed results are presented in the supplement.

While a greater proportion of pregnant women followed midwifery sessions, the number of sessions remained stable between 2010 and 2016 (Table 2). The number of physiotherapy sessions also remained stable between 2010 and 2016 in Belgium irrespective of the definition used (Table 2). Using the narrow definition, no difference between regions was observed but using the broad definition, pregnant women in Flanders used more consultations than elsewhere in Belgium (Table 2).

Table 2 – Number of birth preparation sessions in low-risk pregnant women by type of provider (2010 – 2016)

Providers	Year	Belgium Median (IQR)	Brussels Median (IQR)	Flanders Median (IQR)	Wallonia Median (IQR)
Midwives	2010	2 (5)	3 (3)	2 (3)	2 (4)
	2016	2 (3)	3 (3)	2 (2)	4 (5)
Physiotherapists (narrow definition)	2010	4 (3)	4 (4)	4 (3)	4 (3)
	2016	4 (4)	4 (4)	4 (2)	4 (4)
Physiotherapists (broad definition)	2010	5 (6)	4 (5)	6 (6)	5 (5)
	2016	5 (6)	4 (5)	6 (6)	5 (5)

Note. Only women with at least one consultation were included

3.2.2 Antenatal interventions financed by the Communities

K&G, ONE and Kaleido offer parenthood education and pregnancy support to pregnant women and their partner in their community of residence. The services differ from one community to another but they all provide advice in health promotion and education for pregnant women and their partner. More information can be found in the section 2.2.4. of the supplement.



Kind en Gezin (K&G)

In the Flemish Community, K&G uses several channels to disseminate information to parents-to-be: pregnancy booklet, K&G newsletters, K&G website, K&G-leaflets, K&G information sessions. Information sessions are organised in maternity services, together with doctors and midwives and deliver information on topics such as services of K&G, the development of the foetus, support during pregnancy, pregnancy related physical difficulties, antenatal testing, becoming a parent, delivery, breastfeeding, etc. Moreover, K&G offers future parents an introductory meeting (for example by home visit) aiming to discuss parenthood issues and K&G services. K&G also organises ANC consultations in 4 antenatal support centres (Prenataal steunpunt) in Ghent and Anwerpen (more details are available in section 2.2.4.1. of the supplement).

In addition, K&G organises free antenatal consultations during pregnancy in antenatal support centres. K&G organise also social consultations in some hospitals with vulnerable patient groups (e.g. Aquarelle - Brussels, UZ Brussel, UZ Gent).

Office de la Naissance et de l'Enfance (ONE)

In the French Community, ONE organises clinical follow-up and provides non-clinical interventions. The medico-social workers (travailleurs médico-sociaux – TMS) are the main providers for non-clinical interventions. They are supported in their task by a birth pathway (*Le chemin de naissance*). All information given by the TMS and all medical data are stored in “My pregnancy notebook” (*Mon carnet de grossesse*) that also contains the medical file (*Dossier Médical*).

TMS offer a psycho-social anamnesis including the socio-economic situation, parenthood project or information related to the mother that may influence the pregnancy such as diet, addictions, diabetes, stress, emotions. TMS' services are delivered in hospitals, in community practices or by antenatal platforms (e.g. Liège and Verviers). In addition, TMS offer an antenatal home visit and information sessions.

During the antenatal visit, TMS provide information adapted to the daily life of pregnant women while information sessions, organised in close collaboration with midwives in some hospitals, deal with issues regarding birth preparation and parenthood education. Finally, support is given to construct the birth plan via the pregnancy notebook and discussions with the gynaecologist, the midwife or the TMS according to the mother's preference. The birth plan may be reported in the medical file or the ONE booklet.

Kaleido

Kaleido is the office for children of the German-speaking Community (Ostbelgien). It is a more recent institution than K&G and ONE. Therefore, the panel of services proposed is evolving. Kaleido proposes parenthood education sessions and information regarding birth preparation organised by hospitals. In a near future, information sessions regarding administrative issues will be organised. Special attention is dedicated to vulnerable women. Monthly financial support, medical costs not covered by welfare services (CPAS/OCMW), home visits, fruits and vegetables are offered to pregnant women in distress (i.e. 50 to 80 women per year). Interested readers can find more details in the supplement.

3.2.3 Additional actors engaged in non-clinical interventions

The sickness funds play a role in supporting parents-to-be regarding their rights and obligations during pregnancy and after delivery. In addition, some sickness funds offer information related to health issues during pregnancy or for the choice of ANC providers and maternity units (e.g. they inform pregnant women about contracted healthcare practitioners and about costs related to the management of pregnancy and delivery).

In Flanders, expert centres for maternity care (Expertisecentra Kraamzorg) provide evidence-based information, welfare- and health promotion and education to future parents and professionals. They also facilitate the networking and the collaboration between ANC professionals. Detailed descriptions can be found in section 2.2. of the supplement.



3.2.4 How to improve BPPE: Literature review and stakeholders consultation

We conducted a literature review in peer-reviewed journals and grey literature focused on the impact of birth preparation or parenthood education interventions on health outcomes or health related behaviours to identify which non-clinical interventions could have a positive impact on maternal and neonatal health outcomes. Interested readers can find more details in chapter 4 in the supplement.

While there is a strong belief in birth preparation and parenthood education programmes among caregivers²⁶ the effect of non-clinical interventions varies widely according to the maternal or neonatal health outcome considered. In the literature, non-clinical interventions may have a positive effect in reducing caesarean section rates, false labour admissions, anxiety, and urinary incontinence and in enhancing childbirth self-efficacy. However, the added-value of non-clinical interventions is unclear regarding induction of labour, pain management, breastfeeding, depression, partner postnatal mental health, couple relationship, health related behaviours and weight gain. Finally, no effect of non-clinical interventions was found on stress, psychological wellbeing and self-perceived general health of pregnant women. Based on the included studies, it is not possible to recommend one type of non-clinical interventions against another. Current evidence is scarce and mainly of low quality. Therefore, further high quality research is needed to test, not only the effects of non-clinical interventions on health outcomes but also the consistency between the content of birth preparation and parenthood education interventions and the needs of parents and their newborns.

Non-clinical interventions are widely used and recommended in European countries, such as France, the UK, the Netherlands and Sweden. Moreover, programs adopted in these countries are very similar both regarding the content of the interventions as well as the sequence of all interventions (see section 4.4. of the supplement).

A brainstorm with the key stakeholders organised as a part of this KCE project led to the development of a structured list of BPPE activities to take place by trimester; this list is non-exhaustive and may be adapted according

to the personal situation of each pregnant woman (see Table 3). Interested readers can find more details in section 7.3.3. of the supplement.

Table 3 – Non-exhaustive list of BPPE activities per pregnancy trimester proposed by Belgian stakeholders

First trimester

Information related to the pregnancy:

- Relevance of clinical follow-up during the whole antenatal period (e.g. ultrasound)
- Useful vaccination during the pregnancy
- Screening tests and informed choice
- Warning signs [information tailored to the pregnancy stage]
- Support health literacy of the pregnant woman (and her partner) [information tailored to the pregnancy stage]

Information about everyday life:

- Lifestyle: nutrition, weight gain, medication, smoking, alcohol, sports, physical exercises and activities
- Information about sexuality during pregnancy and after delivery

Information about administrative procedures:

- Support offered by sickness funds
- Maternity/paternity leave and motherhood support, protection at work and issues regarding employment
- Social support
- Childcare/nursery

Information regarding the baby:

- Development of the baby and evolution of the pregnancy
- Feeding choice (breastfeeding versus bottle feeding) [information tailored to the pregnancy stage]



Second trimester

Information related to the pregnancy:

- Pelvic floor muscle training and education including pelvic floor massage
- Oedema, posture exercises and proprioception
- Awareness of the body transformations during the pregnancy, the delivery and the postpartum including the functional consequences (e.g. related to working conditions)
- Identification of pain related to foetal position, posture pain, neck pain, biomechanical pain
- Psychological support during pregnancy
- Warning signs [information tailored to the pregnancy stage]
- Support health literacy of the pregnant woman (and her partner) [information tailored to the pregnancy stage]

Information about administrative procedures:

- Birth grant
- Child allowances

Information related to the baby:

- Attachment bond including the foetal movement experience
- Newborn's needs
- Feeding choice (breastfeeding, bottle preparation) [information tailored to the pregnancy stage]

Information about postpartum:

- Preparing the return at home (including availability of a midwife for home visits, home environment, childcare equipment, actors and possibility of postnatal support) [information tailored to the pregnancy stage]
- Postnatal care including K&G/ONE, physiotherapist and maternity care [information tailored to the pregnancy stage]

Third trimester

Pregnancy and labour:

- Birth plan
- Exercises to deal with pain
- Identification of pain related to foetal position, posture pain, neck pain, biomechanical pain
- Information about:
 - Warning signs [information tailored to the pregnancy stage]
 - Psychological support during pregnancy [information tailored to the pregnancy stage]
- Support health literacy of the pregnant woman (and her partner) [information tailored to the pregnancy stage]

Delivery:

- Explanations related to the process of a physiological delivery (including when to go to the maternity ward, birthing position, pain management, introduction at the maternity ward, role of hormones during labour, importance of skin-to-skin contact...)
- Information about:
 - Medical interventions during the delivery and their potential consequences/risks
 - Psychological support during delivery

Information about postpartum:

- Preparing the return at home (including availability of a midwife for home visits, home environment, childcare equipment, baby's sleep rhythm, self-care)
- Postpartum care (recovery, mood variation...)



- Vaccination and screening tests for the baby during the postnatal period (e.g. deafness, bilirubin test, Guthrie test)
- Recovery of the pelvic floor, starting postnatal physiotherapy sessions and restarting of physical activities (exercises) and sports
- Anticonception

Information regarding the baby:

- Newborn's needs [information tailored to the pregnancy stage]
- Information about the feeding choice (breastfeeding, positions to breastfeed, bottle preparation, breastfeeding at work) [information tailored to the pregnancy stage]

Transition to parenthood:

- Analysis of parental empowerment (including fear of delivery) and social (family) support
- Adaptation to the new family structure (place of the pregnancy, place of the baby within the family)
- Information about:
 - Bonding with the neonate
 - Mental health impact or the emotional transformations during pregnancy, delivery and postnatal and possible care needs
 - Healthy motherhood (parenthood) and well-being

Key messages

- **In Belgium there is a range of antenatal non-clinical interventions proposed to pregnant women. They are provided by social workers, midwives and physiotherapists. In addition some private initiatives are organised by healthcare professionals and by non-healthcare professionals.**
- **Birth preparation sessions are mostly carried out by only one type of provider and are increasingly led by midwives. In 2016, half of the low-risk pregnant women benefited from reimbursed birth preparation sessions provided by a midwife or a physiotherapist.**
- **When women attend birth preparation sessions with a midwife, the median number of sessions is 2; when they attend birth preparation sessions with a physiotherapist, this median is 4 (2016).**
- **K&G, ONE and Kaleido offer parenthood education and pregnancy support. The services differ from one community to another but they all provide advice in health promotion and education for pregnant women and their partner.**
- **While there is a strong belief in birth preparation and parenthood education programmes among caregivers, the effect of non-clinical interventions varies widely according to the maternal or neonatal health outcome considered. Based on the studies included in our review, it is not possible to recommend one type of non-clinical interventions against another.**



3.3 ICT innovations for information exchange

These last years, many e-health initiatives were developed to facilitate the sharing and secure access to health information by patients and professionals. In the future, the exchange of information will be based on structured and standardized data sets known as Care Sets.

These Care Sets will focus on predefined themes (e.g. allergies, vaccination, glycemia, weight assessment, medical history, patient wishes, electronic drug prescriptions, electronic dietetic prescriptions, electronic physiotherapy prescriptions, etc.).

Administrative Care Sets are also provided to allow the identification of the patient and information providers via the Identification Social Security Number (ISSN). Each Care Set operates as a structured, independent and dynamic module allowing for standardized multidisciplinary information exchange between healthcare providers who have a therapeutic relationship with the patient and for whom the patient has given informed consent for data sharing.

The construction of the information exchange in different modules (Care Sets) will allow:

- to avoid multiple entries by providers,
- to avoid duplication of interventions through data sharing among all healthcare providers,
- to standardize and unify the content and wording of the information using a coding based on the international clinical terminology system SNOMED CTⁱ,

- to secure and select access to data (via Fast Healthcare Interoperability Resources (FHIR) standardization),
- to consult the content history,
- to trace the provider of the content.

The Care Sets will be available via hubs (Vitalink, Abrumet, and the Réseau de Santé Wallon). The information contained in the Care Sets will be accessible by professionals through their approved software and by patients through the Personal Health Viewer (online portal "MaSanté" / "MijnGezondheid").

K&G and ONE are working on the development of Care Sets for early childhood and a Care Set for childbirth is being developed. In addition to 'Care Sets' K&G launched in May 2019 an App 'MyPregnancy / MijnZwangerschap'. With this online application future parents receive tailored information, including weekly information, tips and advice based on the due date and parity, K&G brochures and checklists (e.g. when to search for child care), and an overview of childbirth related services and activities in their neighbourhood (e.g. antenatal lessons, baby massage).

To support the uptake of e-services by healthcare professionals, the NIHDI offers an annual lump sum to midwives, physiotherapists and GPs who meet certain conditions such as reaching a minimum level of activities and using an approved software that is compatible with the whole ICT structure (all conditions are detailed by type of healthcare practitioner in section 2.4.1. of the supplement).

ⁱ SNOMED CT is a comprehensive multilingual healthcare terminology which enables machine-processable representation of clinical content in electronic health records. SNOMED CT provides controlled terms, including synonyms and translations in different languages.



Sickness funds also play a special role in informing and guiding their members in their administrative and social procedures. In addition to facilitating access to the required documents on their website, some sickness funds have developed user-friendly applications that allow pregnant women to obtain useful information. Moreover, plenty of websites and apps provide useful information. Apart from websites such as those of K&G/ONE, Fédération Wallonie-Bruxelles, the Flemish government, and the sickness funds, the quality of the presented information is variable.

Key messages

- **The eHealth platform aims to facilitate secured data exchange between professionals.**
- **In the next future, the exchange of information will be facilitated by the creation of structured and standardized data sets known as Care Sets shared via hubs (Vitalink, Abrumet, and the Réseau de Santé Wallon).**
- **The information contained in the Care Sets will be accessible by professionals through their approved software and by patients through the Personal Health Viewer.**
- **Plenty of websites and apps provide information for pregnancy follow-up, including administrative and financial advice. However, the quality of the information is variable.**

4 LEGAL FRAMEWORK OF ANC AND PROTECTIVE MEASURES FOR PREGNANT WOMEN IN BELGIUM

4.1 Legal framework of ANC in Belgium

The legal framework of the ANC organisation is based on:

The law on patient's rights¹⁴ that confers to patients the right to provision of qualitative healthcare, the right to choose freely their care providers (and to modify this choice), the right to receive all information to understand their health status, its likely evolution, and to freely consent to any intervention, the right to privacy, the right to benefit from a carefully updated and safely recorded patient's file.

The legislative provisions on healthcare professions and practice are the following ones:

The law of 10 May 2015 related to the exercise of healthcare professions organises the healthcare professions.¹⁶ Amongst others, the law details the access to the professions of physician, midwife and physiotherapist (general competences, licence to practise, recognition of professional titles/specialisations, and mandatory registration with a deontological body).

In addition, some specific older provisions organise the midwifery training and specific competencies. The Royal Decree of 1 February 1991²⁷ related to the profession of midwife describes which care midwives are allowed to perform and under which conditions. In 2006, midwives' competencies were extended to drugs prescription, perineal rehabilitation and performing ultrasounds. An implementing decree followed the publication of the law but only for drug prescription.¹⁸ Therefore, the agreement to perform perineal rehabilitation and ultrasounds is not yet implemented into practice. Finally, from 2018, new licensed midwives have to restrict their nursing activities to technical procedures related to fertility, maternity, neonatology and gynaecology (Art.149 – Law 10/04/2014).²⁸



New licensed midwives can no longer provide other technical nursing procedures. In practice, this means that hospital midwives are only allowed to work in services where their competencies apply (maternity and neonatal services).

Recognition criteria to perinatal physiotherapy and perineal rehabilitation provided by physiotherapists are also defined by the law of 10 May 2015 related to the exercise of healthcare professions and implementing decrees (Art. 42 and 43 – Law 10/05/2015¹⁶ and implementing decree²⁵).

The law on Quality of the healthcare practice²⁹ (applicable from July 2021) provides that healthcare practitioners must base their medical decisions on relevant scientific evidence and their own professional expertise, and take into account the patient's preferences. The law limits the delivery of care to those for which healthcare practitioners are competent i.e. their competences recorded in their personal portfolio. When the healthcare practitioner is not competent or when the patient's health status requires so, the law imposes the healthcare practitioners to refer the patient to a colleague and to register the referral in the patient's record. Before treating a patient in an appropriate and qualitative context, the law also obliges all healthcare practitioners to proceed with the anamnesis of the patient and to register the relevant information in the patient's record. The record must be completed during the treatment course with detailed information within the scope of its competencies (for more details on patient's record see Box 2 of the supplement). Finally, the law organises the continuity of care by forcing the healthcare practitioners to participate in on-duty services when they are organised, by making it compulsory to share actively and systematically all necessary medical information between all healthcare practitioners in a therapeutic relation with a specific patient and by imposing the development of an efficient emergency transfer procedure when healthcare practitioners perform high risk interventions.

Medical ethics code covers the principles and rules of behaviour that every physician acts in the interest of the individual and of the professional community and on which he draws in his/her professional practice.

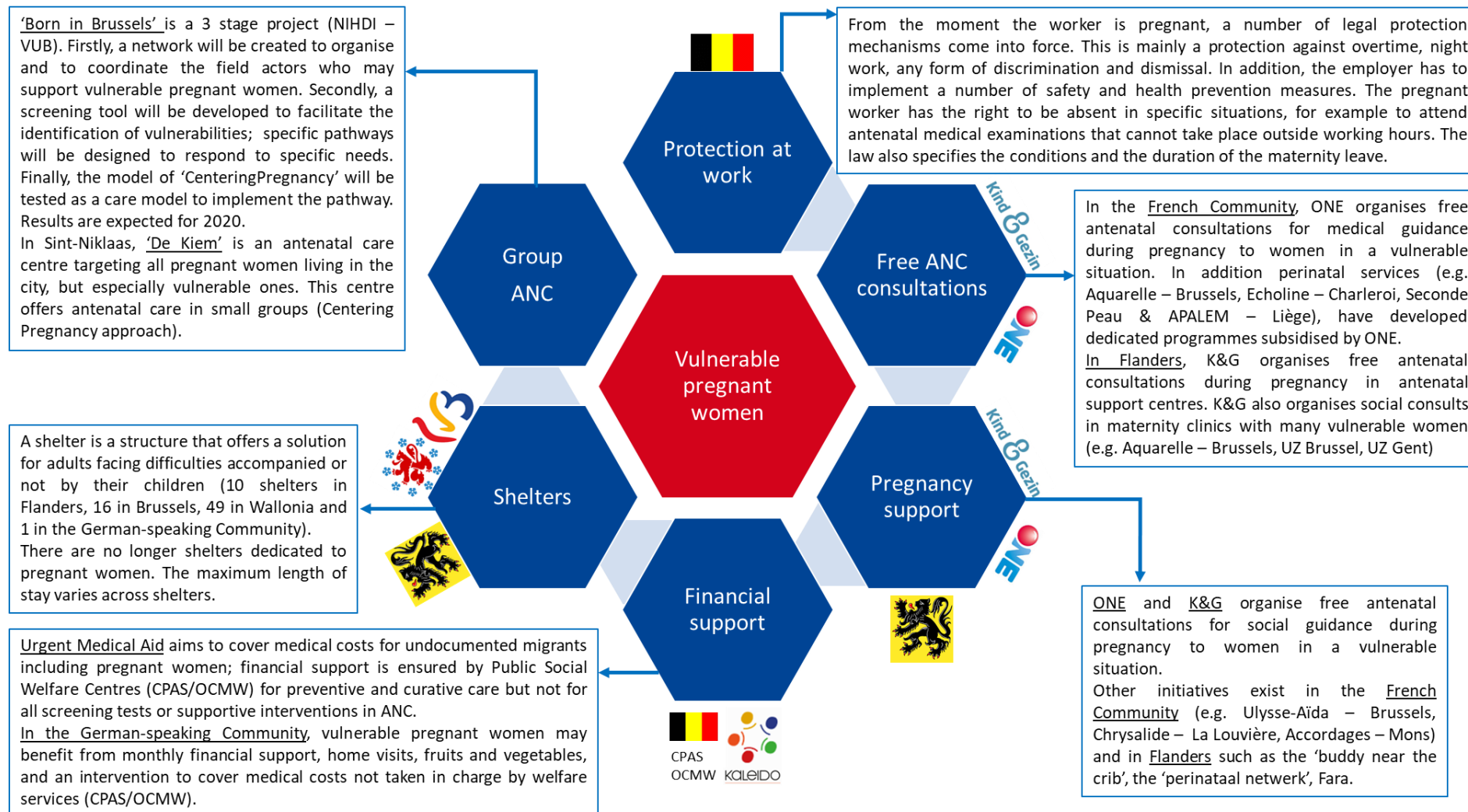
Violations to the above mentioned legal provisions may lead to civilian obligations for compensation purposes, criminal sanctions, deontological measures and withdrawal or suspension of the licence to practice. More details about the liabilities in ANC are available in section 2.3.2 of the supplement.

4.2 Protective measures for (vulnerable) pregnant women

In Belgium, protective measures were progressively implemented for pregnant women, including the more vulnerable ones. While the protection measures for pregnant women at work are applicable to all pregnant women whether they are socioeconomically vulnerable or not, all other interventions are especially dedicated to vulnerable women. Some interventions apply for the whole country (e.g. protective measures at workplace regulated by the Code of Wellbeing at work, Urgent Medical Aid organised and covered by the CPAS/OCMW), while others are specifically developed by reference institutions for birth and childhood financed by the Communities (ONE, K&G and Kaleido). Finally, some very recent initiatives are financed by the NIHDI as pilot projects to support the coordination of field actors involved in the management of vulnerable pregnant women (e.g. project 'Born in Brussels'). These protective measures are summarised in Figure 5. Interested readers can find the details of each intervention in the section 2.3.3. of the supplement.



Figure 5 – Summary of the protective measures for (vulnerable) women





5 PROVISION AND UPTAKE OF ROUTINE ANC: PARENTS' AND HEALTHCARE PROFESSIONALS' PERSPECTIVES

To recognise and capture the challenges in ANC we interviewed both healthcare professionals and parents. Their issues and concerns are complementary, since their perspectives show little overlap. Therefore we will report them separately in the following paragraphs.

5.1 Parents' perspective

5.1.1 Design, sampling and recruitment

To retrieve the parents' perspectives regarding the ANC, a qualitative approach was used, by means of in-depth face-to-face semi-structured interviews. The methodology is extensively described in the supplement (section 6.2) and is more briefly reported in this document.

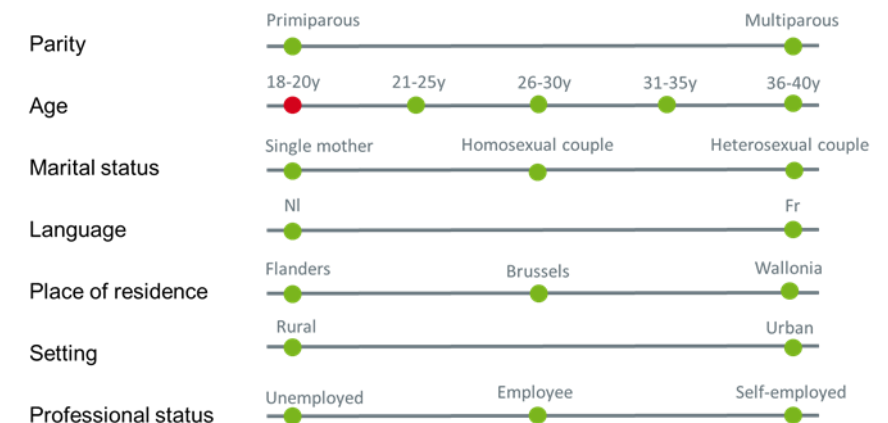
Parents were recruited via healthcare professionals (gynaecologists and midwives). The objective was to invite women and their partners to participate in the study in a short timeframe after childbirth. To enhance the recruitment strategy, a random selection of gynaecologists and midwives to cover all Belgian provinces was followed by other strategies (such as snowballing). Healthcare providers received all documents needed (informed consent forms, information regarding the aim of the research project and what participation entails). Those who were willing to participate, identified one or more pregnant women within their practice which fulfilled predefined selection criteria (see Table 4 and Figure 6).

Women and their partner were interviewed 4 to 12 weeks after delivery, at home or in a place of their choice.

Table 4 – Inclusion and exclusion criteria

Criteria	
Inclusion	18 y < mother's age < 40y 4 weeks < delivery date < 12 weeks Uncomplicated pregnancy and birth Singleton pregnancy Primiparous or multiparous mother Place of residence in Belgium
Exclusion	Mother's age < 18y or > 40y Delivery date < 4 weeks or > 12 weeks High risk pregnancy as defined in the KCE guideline ⁵ High risk delivery Multiple pregnancy ANC fully performed outside of Belgium

Figure 6 – Fulfilment of the selection matrix for parents





5.1.2 Data analysis

All interviews were audio recorded. After the interview, the audio files have been verbatim transcribed. These transcripts were used as data source and were loaded in NVIVO® software (version 11) to facilitate coding and analysis of the data.

An inductive approach was used to generate results using coding of the verbatim transcripts. Further, codes were clustered into categories that were then grouped in themes. Details on codes, categories and themes can be found in the supplement.

The description of findings is built around parents' expectations, parents' experiences and their evaluation of their ANC trajectory. These three variables are presented in Figure 7.

Figure 7 – Parents' perspectives regarding ANC: framework of analysis



5.1.3 Results

What you need to know before reading this section

This section is based on the interviews with parents, having experienced a low-risk pregnancy and a delivery that occurred from 4 to 12 weeks before the interview. A total of 26 interviews, 11 in Dutch, one in English and 14 in French were performed. Most interviews were with the mother only, but especially the French speaking mothers were often accompanied by their partner (Dutch: n=2; French: n=8).

The findings summarised in this section represent their own perception, opinion, or point of view. More details about the methodology (design, recruitment, informed consent and sampling) and the results obtained in this section can be found in Chapter 6 of the supplement.

5.1.3.1 Parents' needs regarding clinical follow-up, birth and postpartum preparation

Parents seek reassurance in clinical follow-up

Up to now, gynaecologists are the main ANC professionals in Belgium, since the role of midwives in providing clinical follow-up during pregnancy is less well known by the public. This situation is however changing. As a consequence of shortened maternity stay, mothers discover midwife services during their postpartum, which encourages them to ask a midwife for antenatal care during a subsequent pregnancy.

GPs play a distinctive role in ANC. Parents-to-be consulted a GP for preconception advice, to confirm pregnancy, to be reassured, and to obtain answers to general questions. GPs are often the first contact point in case of worries or health concerns during pregnancy.

“Mama: De verwachting was toen vooral zo: Stel mij gerust dat het oké is, want de vorige was dan fout gelopen.” (Multipara)

“Papa: C’est comme vous dites, je pense que dans ces moments-là, c’est plus quelque chose de psychologique dont on a besoin. On a besoin d’être rassuré, on a besoin de se sentir bien parce que quand la femme n’est pas



bien avec sa grossesse et qu'elle se sent...qu'elle est parfois mal et qu'elle ne se sent pas bien, on aimerait savoir si ça va, si le bébé va bien. Nous aussi, nous avons ce manque d'assurance, de se dire qu'elle n'est pas bien ça fait qu'on n'est pas bien non-plus." (Multipara)

Throughout pregnancy parents-to-be are searching for reassurance and answers to their questions. Consultations with ANC professionals are experienced by parents as crucial moments to discuss their questions and doubts and to be reassured about the normality of pregnancy and baby's development. Screening tests for infectious diseases (e. g. toxoplasmosis and cytomegalovirus (CMV)) or other diseases (e. g. diabetes) and ultrasounds help to reassure them. Some parents would like to have more frequent tests than the current recommended number (e.g. they like having an ultrasound at each consultation) to relieve their worries. Some parents reported receiving the Non Invasive Prenatal Testing (NIPT) outside the presence of particular risk factors and considered this test as a way to discover or confirm the sex of the baby. Moreover, they reported not receiving information in advance about what to do in case of positive results but felt ok with that.

"Maman : Oui, toutes les choses comme ça, chaque fois elle nous expliquait les conséquences que ça pouvait avoir si c'était positif, ce qu'on pouvait faire, par exemple pour la toxo, elle nous avait dit : « normalement, c'est trois prises de sang au cours de la grossesse ». Moi, j'ai posé la question pour savoir si on pouvait en faire plus et alors, du coup elle me dit : « si vous le souhaitez, on peut faire une prise de sang par mois, mais ce n'est pas remboursé, etc. ». Enfin, elle nous a vraiment tout expliqué. Moi, j'ai décidé de faire une prise de sang par mois. Donc à chaque fois quand même quand on lui disait un petit peu nos inquiétudes, etc., elle nous réexpliquait, elle prenait vraiment le temps." (Primipara)

"En dan... Allee, ergens was ik ook wel denk ik blij dat we toch al gegoogeld hadden om zo een beetje de... de uitkomsten te weten omdat, en dat had ik niet verwacht dat we ook effectief de volgende dag de vraag kregen: Wil je de zwangerschap afbreken? En daar was ik ook wel een beetje van verschoten van: Oei, nee. Is dat fout als wij nu nee zeggen zo? Efkes om... omdat die vraag zo... Ja, dat is hard hé, als die vraag zo direct gesteld wordt. Dus dan was ik wel blij dat we zo bepaalde [dingen] hadden opgezocht en dan al wist van: Ja, eigenlijk is er een grote kans dat het zelfs niet eens doorgaat naar het kindje. Maar ja, ze had ons dan ook uitgelegd van: Kijk, als het echt heel

slecht blijkt, dan kun je ook op een later moment nog afbreken, dus we hadden zoiets van: Kijk, we wachten." (Primipara)

Birth preparation is not generalised but very much appreciated

Interviewees reported that the multiplicity of antenatal activities offered either by healthcare professionals (midwives and physiotherapists), or external actors (yoga teachers or musicians), both within and outside hospital structures, creates confusion about what is needed during pregnancy and what differentiates clinical follow-up from birth preparation.

"Maman: Et je trouve qu'aujourd'hui il y a quand-même une mode, on est fort « Mindfulness », pleine conscience, autonomie, machin. Moi, ça ne me parle pas des masses. J'ai fait le cycle de « Mindfulness », donc c'est vrai qu'au niveau visualisation, gestion de la douleur, c'est peut-être un peu plus facile et encore. Parce que tu crèves de mal quand même comme tout le monde, mais c'est vrai que je trouve que par contre, c'est une critique globale, c'est qu'il y a un business autour de la maternité. Ce n'est pas à vous que je dois le dire, mais de l'accouchement à la maternité... C'est trop. Complètement. Complètement trop, quoi. Et ça, je trouve qu'on n'en sort pas. Rien que quand on va à la maternité [...], il y a des fascicules de 10 000 personnes qui proposent ça, ça, ça, ça, ça. Et ça, moi, ça me gonfle." (Primipara)

Although physiotherapists were mentioned, birth preparation sessions were mostly offered by midwives, both inside and outside hospital settings. Interviewees positively assessed birth preparation sessions, especially when a personalised approach in small groups was proposed. Birth preparation was experienced as reassuring, increasing trust in own and healthcare professionals' capabilities, it facilitated the emergence of an informal support network and finding time to focus on the unborn baby. It allows fathers to be more involved and informed. Primiparae (and their partner) learned what to expect from labour and delivery. Multiparae were not always convinced of the usefulness of birth preparation sessions.

"Mama: Ik wil dat allemaal zo op mij laten afkomen, ik had ook geen geboortepan of van die dingen, want ik denk het kan alleen maar misgaan als het anders is dan wat je denkt. (...) Ik snap dat mensen daar wel iets aan kunnen hebben, maar ik liet het nogal graag op mij afkomen." (Primipara)



In addition to birth preparation sessions parents expressed the need for psychological and practical support. This need for psychological support refers for example to preparing the transition to parenthood, the introduction of a newborn in the family, changes in the partner relationship, fertility problems, or difficult pregnancy-related decisions.

Practical support includes administrative issues such as requesting maternity leave or child allowances.

Importance of postpartum preparation in the light of the shortened maternity stay

Preparation of the postpartum during pregnancy is not yet a default part of antenatal care for all future parents. A number of interviewees did not have any follow-up at home after discharge. An organised postnatal follow-up at home is a prerequisite for discharge only in some hospitals.

“Maman : Et quand je suis arrivée à la maison, là ça a été le comble puisque je n’ai vu personne pendant 3 jours.”

Interviewer : Est-ce qu’il y avait le passage d’une sage-femme qui avait été organisé avant ?

Maman : Alors oui, à l’hôpital ils m’avaient dit qu’il y avait une sage-femme qui allait passer. Alors, [la première sage-femme qui me suivait] m’avait dit que elle, si on sortait le matin, elle passait l’après-midi. Si on sortait l’après-midi, elle passait le lendemain matin. Et là pourtant, j’avais spécifié à l’hôpital : « je suis seule, ne me laissez pas toute seule ». Enfin, je suis sortie le dimanche, et je n’ai vu personne avant le mercredi. Et le mercredi, ils étaient 5 ici. Donc, il y a eu la travailleuse sociale de l’ONE, il y a eu une sage-femme parce que moi, entre temps je cherchais quelqu’un, donc, il y a eu une sage-femme externe qui est passée et il y a eu deux autres sages-femmes de l’hôpital qui sont venues. Donc non, ils étaient 4.” (Multipara, single)

“Mama: Ja zo een ding en heb ik wel gemist. Wat als je kindje geboren is éh? Op wat moet je letten in huis? Temperatuur? Wat kan je doen om hem dat gevoel te laten hebben van in de baarmoeder éh. Zo die kleine tips heb ik wel gemist.” (Primipara)

5.1.3.2 Parents’ opinions about ANC content and organisation

Informing parents is not systematic, nor structurally embedded

Pregnancy, as well as the period in which a couple tries to conceive, is a quest for information. Parents reported a lack of systematic and structurally embedded information transfer. They felt that key pieces of information with a strong impact on their antenatal trajectory reached them coincidentally (e.g. because they heard a colleague/friend talk about it). The topics that were mentioned as not sufficiently covered were the types of ANC professionals and which services they offer, labour and delivery, breastfeeding and daily care for a newborn, as well as information related to preconception.

Parents, especially first-time parents, missed an overview of possible ANC trajectories (both clinical follow-up and birth preparation) and which ANC services they can expect from which professional. They struggle to identify and compare specific roles and services rendered respectively by gynaecologists and midwives. Moreover, they do not differentiate between clinical follow-up and birth preparation, both regarding the content and the professionals offering these two complementary activities. For example, some interviewees expected to receive information on labour and delivery from their gynaecologist (e.g. what would be possible scenarios, what would be their own role, which analgesia will be available (pros and cons), the inevitability of the episiotomy, the presence of the gynaecologist during delivery), and were disappointed when these topics were not discussed during gynaecologists’ consultations.

“Mama: ik was nog nooit bij ne gynaecoloog geweest. Dus ja, je kiest die dan een beetje op basis van de huisarts waar we toen gingen die had dan gezegd: ik ga bij die gynaecoloog, ik ben daar wel content van. Daar vertrouwd je dan wel wat op. Zo zijn we daar dan terechtgekomen.” (Multipara)

“Maman : Mon sentiment par rapport à mon parcours en général, je pense qu’on n’est pas assez informé sur les sages-femmes. Parce que si j’avais été informée dès le départ, même depuis l’adolescence, si on m’en avait parlé au sein de la famille, etc. Je me serais directement tournée vers une sage-femme.” (Primipara)



Although women who want to become pregnant have plenty of questions, they remain reticent to consult a healthcare professional in function of getting pregnant. If they do consult before pregnancy, this is mostly in function of routine check-up or ceasing contraception (e.g. removal of an intra uterine device). Women evaluated these consultations as insufficient or dissatisfying in terms of the information they received about fertility, conception and pregnancy. Women learned a lot (e.g. about the use of folic acid) from their peers in *tempore non suspecto* (i.e. at a time when they do not yet have the intention to conceive). However after they decided to get pregnant they tend not to fall back on peers in order not to disclose their intention to get pregnant. Consequently they search for information online, in books or through apps. Some women in our sample said they didn't know anything about fertility and pregnancy before they started trying to get pregnant.

ANC professionals' communication is not always spontaneous nor structured

Asking questions during consultations was experienced by many interviewees as difficult. Some gynaecologists were perceived as not accessible, nor open to questions. Parents reported they did not dare to ask questions, they felt as they were spoiling the gynaecologists' precious time, and that the time for questions was very limited. They sought ways to force their questions into the short consultations (e.g. by asking them at the start of a consultation, by preparing lists in advance). They felt disappointed about brief answers and missed information initiated spontaneously by the gynaecologist.

"Maman : Ben, encore une fois est-ce qu'elle répondait à tous mes besoins ? Non. Parce que s'il y avait une question à laquelle je n'avais pas pensé, ce n'est pas elle qui allait m'en parler. Encore une fois, je ne sais pas, les gynécologues sont aux abonnés absents, je n'en sais rien." (Primipara)

Parents expressed the need for objective information enabling them to make their own choices. Also timely and proactive information was valued. This means information is given not only in case a problem occurs, but up front, enabling parents to prepare and not be surprised at the event of a problem.

We did not notice different information needs between primiparae and multiparae, while the latter reported lacking and contradicting information more frequently.

"Maman: Déjà un accouchement provoqué, je ne me suis jamais posé la question, je ne savais pas que ça faisait partie des possibilités. Quel type de questions à cette étape là... Des informations de base sur le bien-être de la maman, les nausées, l'état de fatigue, les changements hormonaux que ça provoque." (Primipara)

Availability and accessibility of ANC professionals is highly valued

Parents preferred a follow-up by the same healthcare professional throughout pregnancy. This way they felt more at ease and could build a trusting relationship. Availability of ANC professionals has been addressed in the context of a problem or worry during pregnancy, test results, and attendance of the delivery. For non-critical problems or worries, pregnant women rather turned to their GP, midwife or maternity service. For more serious problems they reported to prefer their gynaecologist. Parents were generally helped quickly. Obtaining test results was reported to be sometimes cumbersome with long waiting times, occupied telephone lines, and difficulties to reach the gynaecologist in person.

"Ik ben eigenlijk heel goed begeleid geweest en (...) voor een stukje had dat voor mij te maken met het feit dat ik mijn vroedvrouw ondertussen wel bijvoorbeeld goed ken, dat ik daar een hele fijne band mee heb omdat wij meer kindjes hebben en zij is altijd degene geweest die ons begeleid heeft. Maar de gynaecologe ook. Ik vind dat een hele fijne persoon, dat is een heel correct iemand, dus dat zorgt er ook voor dat je jezelf al meer op je gemak voelt, vind ik." (Multipara)

More than from a physician, parents expect midwives to take time for them. Midwives are perceived as highly accessible and available, meaning that parents can call or sms at any time.

*"Maman : Donc, mais sinon s'il y avait un problème, je pouvais vraiment la [la sage-femme] contacter. Elle, elle était toujours disponible, ça elle me le disait toujours. Que ce soit à 3 heures du matin, elle était toujours disponible par message.
Interviewer : Et elle répondait ?
Maman : Ah oui, oui, elle répondait. » (Primipara)*



Time spent to consultations

Parents greatly appreciated healthcare professionals who took time to answer their questions. Parents who described consultation time as being (too) short, told us about all kinds of strategies to squeeze their questions into the limited time window of a consultation (e.g. list them beforehand, asking them at the start of a consultation).

“Maman : Et la gynécologue, même en dehors du rendez-vous, elle a des heures de consultation durant la journée où on peut lui téléphoner. Elle a une ou deux heures par jour où on peut lui téléphoner où elle répond ou pas mais on peut lui laisser un message et elle répond dans la journée. Donc, ça c'était bien et la sage-femme aussi.” (Primipara)

*“Interviewer: En had je het gevoel dat je met vragen terecht kon?
Mama: Ja, dat wel. Maar je moet wel voorbereid zijn. Allé, als je echt een vraag hebt moet je ze wel opschrijven of gewoon zeggen van hé, ik moet nog dit of dit of dit vragen want als je niet [Respondent lacht] op uw hoede bent, dan sta je al weer buiten.” (Primipara)*

“Maman: la sage-femme a toujours été disponible, elle pouvait répondre. A titre d'exemple, la visite chez le gynécologue c'est sept minutes dans le cabinet. La visite chez la sage-femme, c'est une heure et demie.” (Primipara)

Moreover they are tolerant for inconveniences such as long waiting times. They have a lot of understanding for the workload, the unpredictability and time pressure a gynaecologist faces. Others saw the long waiting time as the price they had to pay for a popular gynaecologist who takes time to listen. However, long waiting times occurring at each consultation evoked irritation, particularly if the time devoted to the consultation was experienced as too short (imbalance perception). Parents appreciated a display in the waiting room informing parents about the delay.

“Papa: Ja 't is ook de tijd hé. [...] Ge hebt veel werk en ge zit daar dan zo uw tijd te passeren. Er kan altijd een keer iets gebeuren of iets tussenkomen, maar 't was iedere keer hetzelfde jong.” (Primipara)

In advance planning of consultation

Some parents appreciated the in advance planning of consultations. This way they could plan other activities such as work. Others did not have this advance planning and explained that their gynaecologist spread consultations in function of their needs.

“Maman : Oui et c'est vrai que moi, je trouve ça bien de programmer à l'avance parce qu'avec le travail c'est pas évident. Donc moi, j'étais très contente que tout soit programmé dès le début. Elle nous avait expliqué que sur la fin de grossesse, à partir du moment où le bébé vient, c'est bien de faire des monitorings, voilà des rendez-vous un peu plus rapprochés. On ne s'est pas posé de questions.” (Primipara)

5.1.4 Parents' expectations, choices and involvement in ANC

No matter which healthcare professional sat in front of them, parents searched for reassurance and answers to their many questions. They appreciated empathic professionals who were sensitive to their needs and preferences and who could create realistic expectations, who were available and highly accessible, and who were attentive to other than medical aspects of pregnancy. They valued neutrality and objective information. Parents wanted to be involved and empowered in their new parenting role.

“Mama: Maar ge hoort da altijd dat de mensen da zeggen: ja je moet toch zeggen dat je geen knip wil tenzij het echt, echt nodig is éh, want ze zetten da anders zo standaard. Ik heb da nooit kunnen zeggen tegen iemand of allé da is daar gelijk nooit van gekomen. Terwijl ze wel in 't ziekenhuis éh, ge krijgt dan ook zo infobrochures over bevallen en pakt da op in uw geboorteplan en pakt da mee. Maar als 't puntje bij 't paaltje komt dan heb ik zo ni den indruk da da echt. Aléé ik denk da je da heel actief moet aanbieden van ik wil da en da en da.” (Primipara)

Parents choose a healthcare professional through referral by the following strategies: referral by a GP, positive feedback from peers, medical shopping, or in function of a certain hospital. Elements in the choice of the type of healthcare professional were the access to ultrasounds, a previous positive or negative experience or recommendations of peers. A gynaecologist as main care provider seemed a self-evident choice. A midwife was rather a deliberate choice in function of a quest for a less technical approach.



Criteria for the choice of a healthcare professional were habit, trust, familiarity, appreciation of a certain (personality) characteristic or approach, recommendations by GP or peers, coincidence, feeling at ease, availability, proximity and the linkage to a hospital.

Parents gave examples of decisions, routines or procedures beyond their control. This feeling of control loss did not so much occur in the context of personal face-to-face communication with ANC professionals, but rather in larger institutional settings. In addition, parents felt they lack the knowledge and/or experience to judge and decide about the adequacy of a (medical) act or decision. Parents want to be informed about all the options to identify their own preferences and make the choices that suits their preferences best.

“Mama: En dan kwam daar al direct zo van alles bij van: En ja, erfelijkheids-ziekten en we gaan dat onderzoeken en dat, en ik dacht: Dat is onze vraag helemaal niet, maar ik durfde dat dan ook niet aangeven. Ik dacht: Ja, dat zal dan wel zo zijn, en dan, ja, ondergaat ge dat maar, maar dat is zo... zo dat er eigenlijk zo toch nog veel boven uw hoofd wordt beslist terwijl dat het eigenlijk over u gaat en over uw kindje.” (Primipara)

“Mama: Allee, als ze u zo'n bad tonen om in te bevallen en een bal voor op te gaan zitten en een krukske... Allee en dan de bevallingstafel zelf. Als ze u dat allemaal tonen, kunt ge misschien evengoed zeggen: Wat is ons beleid na de bevalling, hoe doen wij dat... Dat lijkt mij nog wel iets dat alleszins niet overal hetzelfde is en dat ik dan bedenkt: Dat kun jij als mama gewoon maar ondergaan wat dat uw ziekenhuis standaard doet en daar ben je niet zo op voorbereid, denk ik.” (Multipara)

Parents' disappointments were related to healthcare providers' attitudes and reactions, too much or too little care, defective material, organisational issues or medical interventions. Appreciations referred mostly to the availability of healthcare professionals. Healthcare professionals' attitudes and reactions should reflect availability, empathy, respect for parents' preferences, objectivity and transparency. Parents' expectations regarding intensity and frequency of interventions and procedures are really individual, what is evaluated as too intensive for one couple can be satisfying for another (e.g. the number of ultrasounds).

“Maman : Je n'ai pas eu d'échographies morphologiques malheureusement, par ce qu'il n'y a pas assez de personnel ici, dans la région du Luxembourg. Je n'ai pas eu d'écho morpho. Donc il m'a dit, je verrai bien à l'écho s'il y a quelque chose ou pas.” (Multipara)

“Mama: Euhm, en ik ben blij dat ik dat gekozen heb, dus dat, dat maakte bijvoorbeeld het aantal verplaatsingen, ja, gewoon veel minder was of veel korter kon zijn, dus dat vond ik wel positief. Euhm, als ik daar een kanttekening bij mag maken, dan denk ik sommige dingen lijken mij zo nog... Worden zo wat dubbel gedaan precies dan. Als je daarvoor kiest, dan is het voor mij precies nog niet zo duidelijk wie dat wat wanneer dan doet. En ja... Waren er soms afspraken heel kort op mekaar, dan dacht ik: Ja, is dat nu nodig? (...) Die duo opvolging is... Leek mij soms precies mij meer afspraken te hebben opgeleverd dan minder” (Multipara)

5.2 Healthcare professionals' perspective

This section is dedicated to healthcare professionals' perspectives regarding the current organisation of ANC in Belgium. The objective is to learn about what can be improved in the Belgian ANC.

5.2.1 Methods

A multimodal approach was developed combining face-to-face interviews, and workshops guided by human design thinking and the nominal group technique. The methodology is extensively described in the supplement (section 7.2) and is more briefly reported in this document.

5.2.1.1 Interviews with ANC professionals

The aim of the interview round was to identify how the provision of antenatal care can be improved from the perspective of the main healthcare professionals involved in antenatal care. Therefore, 29 Belgian healthcare professionals have been interviewed (Table 5). The researchers summarised each interview in personal notes that were analysed in a thematic way.

**Table 5 – Number of interviewees per profession**

	Dutch speaking professionals	French speaking professionals
Midwife	5	5
Paediatrician	1	1
General Practitioner	1	0
Gynaecologist	5	4
K&G/ONE	2	1
Psychologist	1	0
Physiotherapist	1	2
Total	16	13

5.2.1.2 Brainstorm sessions with ANC stakeholders

A face-to-face brainstorm session was organised in June 2018 to understand the needs and the problems of ANC professionals and (future) parents, to propose appropriate solution(s).

This diagnostic phase included the core principles of ANC, a description of the stumbling blocks in the current organisation of ANC, the means to address the identified sticking points by adapting the organisation of ANC, the foreseen improvements if the organisation of ANC is adapted, and finally the key performance indicators (KPIs) that should be measured to evaluate the improvement after the implementation of a new organisational model (see Figure 48 in the appendix of the supplement). The data collection took the form of an individual brainstorm to reflect on different issues of the diagnostic stage. The results were then discussed to reach consensus on the diagnosis of the current situation. A group of 7 stakeholders was involved in this exercise: 2 representatives from 2 professional midwives' organisations, 1 representative of a professional organisation of obstetricians, 1 physiotherapist, 1 member of a midwifery practice, 1 representative of K&G and, 1 representative of an organisation supporting couples facing difficult pregnancy choices.

During the meeting, the same group was involved in a second brainstorm exercise related to the values that the ANC organisation should ideally achieve for people, organisations and society, from an economical, psychological, sociological, and medical perspective (see Figure 49 in the appendix of the supplement).

In addition, a second brainstorm session was organised by means of the nominal group technique. Midwives, physiotherapists, medico-social workers ONE, K&G were represented in order to identify interventions related to birth preparation and parenthood education needed during a low-risk pregnancy.

5.2.2 Results

What you need to know before reading this section

This section is based on the interviews, focus groups and brainstorm sessions with healthcare professionals involved in ANC (including midwives, paediatricians, gynaecologists, psychologists, physiotherapists and GPs), either one-to-one or in groups. This latter approach was followed for employees of K&G, ONE and Kaleido, the three organisations involved in child welfare in Belgium.

The findings summarised in this section represent their own perception, opinion, or point of view.

More details about the results obtained in this section can be found in Chapter 7 of the supplement.



5.2.3 Professionals' opinions regarding clinical follow-up, birth and postpartum preparation

Clinical follow-up during pregnancy can take the form of different care trajectories

Different models coexist, including:

- consultations exclusively provided by a gynaecologist;
- the majority of consultations are performed by a gynaecologist and one or two consultations are performed by a midwife (24th and 28th week);
- an alternation of consultations provided sometimes by a gynaecologist and sometimes by a midwife;
- a majority of consultations provided by a midwife supplemented by three consultations with a gynaecologist (corresponding to the number of ultrasounds).

While most consultations are one-to-one, some consultations are provided to groups of pregnant women (CenteringPregnancy-like groups), meaning that a small group of women receives health education, preceded or followed by an individual medical consultation. ANC professionals recognise that future parents use consultations by different providers in a cumulative way instead of alternating them.

Birth preparation takes many forms, but does not cover all future parents

Plenty of initiatives are taken providing birth preparation. They are accessible by internet (e-learning webpages and leaflets) or implemented by healthcare professionals (thematic sessions provided individually or in groups by a midwife or a physiotherapist in private practices or in hospital) or organisations involved in child welfare (ONE, K&G). Content and coverage differ between professionals and organisations. For example, ONE delivers birth preparation and parenthood education information during consultations provided by medico-social workers (TMS, 'travailleur medico-social') and offers home visits on request.

K&G does not offer a similar antenatal follow-up, but visits mothers-to-be at home in the last trimester or has an introductory meeting in the consultation office or by phone.

"Sur le terrain, il y a beaucoup d'initiatives mais il est difficile de savoir qui fait quoi." (Midwife)

Coordination and continuity of antenatal care are crucial but remain underdeveloped

In the course of the transition to parenthood, (future) parents consult different healthcare professionals. After each milestone (e.g. birth, discharge), these professionals change, but even within pregnancy, during birth, within the postnatal period at the maternity clinic and afterwards at home, they are cared for by several healthcare professionals.

"En effet, les futures mamans voient un ou plusieurs intervenants en prénatal puis elles voient d'autres intervenants à la maternité et encore d'autres intervenants à domicile. Il y a clairement un grand morcellement de la prise en charge. Il faudrait un lien plus fort entre le prénatal et le postnatal." (Midwife)

The shortening of maternity stays impacts needs and expectations towards antenatal care

The shortening of maternity stay has a major impact on the workload of hospital nurses and midwives who felt overloaded, because the intra-hospital postnatal period (after uncomplicated vaginal deliveries) is often reduced to a maximum of 72 hours. This implies that care, support and information previously provided on a time range of 4 days have to be provided in a shorter timeframe when the mother is not necessarily receptive to a big amount of information and advice.

Our interviewees signalled that currently postnatal follow-up at home by a midwife, even after a short maternity stay, is not well organised and the continuity of care is not guaranteed, especially in the southern part of the country where only few independent midwives are available. One interviewee reported that in that area women are discharged as early as in the rest of the country, but receive no follow-up at home.



5.2.4 Professionals' opinions regarding preconception care

Preconception care is not well-developed, although it optimises the chances of a healthy pregnancy. The general message we received from interviewees is that the relevance of preconception care should not be underestimated.

1. Some risk factors can be identified and corrected before pregnancy by health-promoting interventions (e.g. folic acid supplementation, food hygiene, lifestyle advice (including smoking cessation, the implications of recreational drug use and alcohol consumption in pregnancy), vaccination, obesity and overweight, change of medications, adaptations of working conditions).

“Een preconceptie consult is heel waardevol en ontbreekt nu vaak. Het mag zich niet beperken tot het stopzetten van anticonceptie en een bloedonderzoek. Het is het uitgelezen moment om vrouwen te informeren over waar ze zoal moeten/kunnen op letten voor en tijdens de zwangerschap.” (Psychologist)

2. Preconception care has the potential to prevent further pregnancy-related problems owing to the investigation of specific parameters related to chronic diseases (e.g. blood pressure and test for proteinuria, glucose levels).

“Met preconceptiezorg maximaliseer je de kans om gezond door de zwangerschap te komen.” (Gynaecologist)

3. Preconception care allows reducing stress during pregnancy. If well informed about the do's and don'ts before pregnancy, women are less worried about recommended and inadequate health behaviours (e.g. alcohol use, medication use, sport activities) during pregnancy, especially in the time period in which they are still ignorant about being pregnant.
4. Preconception care is time gained during pregnancy. The time gain relates to health education, for example how to be adequately prepared for pregnancy (e.g. intake of folic acid), how to recognise first signs of pregnancy, which healthy behaviours to adopt during pregnancy, which medical issues to correct or to follow.

“Le préconceptionnel prend du temps, et a peu d'impact au niveau des gynécologues, qui ont l'impression de perdre leur temps.” (Gynaecologist)

“Vroedvrouwen kunnen een belangrijke rol spelen in de preconceptiezorg, maar kan evengoed door de huisarts gebeuren. Eender wie het doet, als het maar gebeurt.” (Gynaecologist)

5. Preconception care allows an early anamnesis, hence identification of social (e.g. employment, family situation, social support), psychological (e.g. history of mental health problems, addictions), obstetrical and medical risks (e.g. diabetes, history of abortion or gynaecological interventions).

Despite the potential benefits of preconception care, healthcare professionals recognise it is often limited to for example the prescription of folic acid when a woman announces the discontinuation of contraception during a routine check-up. Some professionals also mentioned a blood sample and the identification of lifestyle risks. Our interviewees perceived the lack of a well-developed preconception care as a missed opportunity. It is clear that the potential gain could be the largest for vulnerable groups. Moreover, preconception care should be provided to couples, not only to the future mother, as partners have an important role to play in healthy pregnancies (e.g. partners' smoking behaviour is also harmful).

Ideally, preconception care should be more systematically offered, in a uniform way. Not only women and men at reproductive age should be targeted. Information could for example be integrated in health education programs at primary and secondary schools. The argument is that attitudes (e.g. towards breastfeeding) and health behaviours (e.g. healthy eating habits) are being formed at young age. Also targeted awareness campaigns have been suggested.



5.2.5 Professionals' opinions about quality of ANC

Absence of specific quality indicators hampers the evaluation of the quality of antenatal and postnatal care

Several interviewees suggested that maternal and foetal mortality are insufficient to assess the quality of all dimensions and components of antenatal care. Such indicators could be supplemented by other indicators capturing maternal satisfaction at hospital discharge, the number of breastfeeding mothers one week and one month after discharge, etc. Table 6 shows the Key Performance Indicators proposed by the participants.

There is currently no mechanism in place to monitor the quality of antenatal and postnatal care provided by independent midwives. However, Flemish midwives may, on a voluntary basis, sign an agreement in which they undertake to meet quality criteria (for example, to comply with clinical guidelines, not to discourage the use of vaccination, to transfer their data files to K&G, to guarantee a home visit within 24 hours of discharge, to carry out a Guthrie test of the newborn, to inform the hospital about the follow-up provided at home). This "good practice label" for midwives is supported by ANC partners such as K&G. However, national deployment has been hampered by opposing arguments, such as all midwives are trained to the required quality standards and have obtained a licence to practice, making the creation of an additional quality label superfluous.

Table 6 – Key Performance Indicators

KPIs	Example of potential data sources	Note
Proportion of women receiving adequate ANC	AIM/IMA data	
Proportion of pregnant women who use more ANC procedures and services than recommended	AIM/IMA data	Thanks to a centralised database that is accessible for every caregiver a considerable decrease in the overconsumption of antenatal care can be expected. Need to get baseline data to compare the current situation with the future one.
Proportion of pregnant women who use less ANC procedures and services than recommended	AIM/IMA data	Need to get baseline data to compare the current situation with the future one.
Proportion of pregnant women receiving holistic management in antenatal care (e.g. preconception, psychosocial aspects)		
Proportion of preterm births	SPE, CEpiP	Baseline data available in SPE, CEpiP
Rate of maternal and foetal mortality and morbidity	SPE, CEpiP	Baseline data available in SPE, CEpiP
Proportion of satisfied parents	Qualitative interviews	
Proportion of HCP who capture electronic data Proportion of HCP who share information about patients electronically		On the one hand there will be more women having access to antenatal care, on the other hand, there will be less overconsumption since it can be carefully registered and easier to keep track of.



The uptake of antenatal clinical guidelines is not generalised among gynaecologists

Antenatal clinical guidelines for low-risk pregnancies are not accepted nor implemented by all gynaecologists. This leads to the overuse of screening tests. For example, the KCE guideline states that a single serological test prior to or at the beginning of pregnancy can be useful as it may encourage (non-immune) women to take preventive measures or as it may reassure those who are immune. Although there is insufficient evidence to support a routine screening in all pregnant women for toxoplasmosis infection, repeated at different periods of pregnancy, such test is often reiterated several times throughout pregnancy.

Arguments to deviate from clinical guidelines are diverse: habits, impression of clinical effectiveness, perception of infringement of their professional freedom, professional identity and image, conflicts of interest or outdated scientific knowledge of court experts. One interviewee reported better adherence to the guidelines by new graduates who are familiar with evidence-based practice throughout their medical training.

5.2.6 Professionals' opinions about collaboration, communication and interprofessional tensions

Throughout the entire process from pregnancy to childbirth, from the antenatal to the postnatal period, (future) parents are managed and advised by various health professionals, in hospital and at home. Professionals reported that care is often fragmented and insufficiently coordinated and that some parents experience a break in the continuity of care while others receive overlapping care.

While health professionals recognise the added value of multidisciplinary collaboration and wish to engage in strong multidisciplinary networks, efforts in this direction are highly variable and are weakened by many barriers, which are discussed below.

Available communication tools

Interviewees need a communication tool for information transfer between the actors involved in a network. Without clear communication of relevant information on pregnancy follow-up, ANC professionals repeat investigations as a precautionary measure. A care provider illustrated this as follows: *“Often it is unclear what has been done during previous consultation. Because you do not know whether e.g. a blood sample has been taken or not, you decide to take one yourself, to be sure not to miss anything. And you recommend the mother: next time come to me straight away”*.

The only tool currently used for the transfer of information between care providers is the maternal booklet in which each caregiver can report on the actions taken and their results. However a forgotten booklet or an illegible handwriting hinders communication.

Interviewees report that the software programs supporting the electronic medical record used in hospitals and in private practices are up to now incompatible. The call for a unified electronic medical record accessible to all healthcare professionals involved has been repeated several times. There are some promising initiatives, such as Vitalink, Réseau de Santé Bruxellois, Réseau de Santé Wallon and the digitalisation of the mother booklet.

In parallel, parents should benefit from information received on time, complete and free of contradictions, useful to guide their decision-making and supported by a written document, fed by the various providers:

- Parents receive a lot of information. Especially during maternity stay, which sometimes takes only 72 hours, mothers are overwhelmed by information. Combined with fatigue, the overload of information is not effective. Therefore it is important to prepare the early postnatal period as much as possible before birth. Parents should get the right information at the right time, which means when they are the most receptive. However, if provided too early, information can also be lost (e.g. information about breastfeeding, care for the newborn, red flags).



- An electronic medical record could be useful to remind parents of relevant information throughout pregnancy, progressively adding details.
- Based on the information received, all parents should be able to make informed choices regarding antenatal, intrapartum and postnatal care. Currently, they do not receive sufficient information about the possible care trajectories and possible (medical) interventions during birth (e.g. birthing position, but also obstetric interventions, when are they needed and what are the pros and cons).

Division of tasks between ANC professionals

The division of tasks between antenatal care providers is unclear and overlapping, resulting in interprofessional tensions.

- In Flanders, it seems that gynaecologists were hesitant in integrating midwife consultations in the ANC trajectory, fearing a kind of substitution effect. Due to an abundant supply of midwives, many midwives remain unemployed or perform jobs beyond the scope of their training.

“Initieel was het de bedoeling om twee vroedvrouwen consultaties te hebben prenataal, maar dat was niet bespreekbaar voor de gynaecologen en is niet ingevoerd. In andere ziekenhuizen is dat wel gelukt. Twee vroedvrouwen-consultaties is geen overbodige luxe, gezien de grote hoeveelheid aan informatie die moet doorgegeven worden aan de toekomstige ouders.” (Midwife)

- Interviewees report a perceived shortage of gynaecologists in Brussels and Wallonia, offering a wide range of activities for midwives. Collaboration between gynaecologists and midwives seems to be less tensed. However, physiotherapists who formerly played an important role in antenatal and postnatal care are increasingly replaced by midwives. Additional tensions exist between midwives and ONE collaborators (including midwives and medico-social workers) due to an overlapping activity.

Some services and activities are not the exclusive domain of one profession, although each profession has its own framework and puts its own emphases. The grey zones between gynaecologists and midwives, midwives and physiotherapists, midwives and TMS, however bring about a certain rivalry between these professions, which is detrimental to collaboration. Joined care would be a way to learn about each other's activities and expertise, and build trusting relationships.

Professional developments and hospital landscape reforms have led professionals to discover their complementarity, but so far, this multidisciplinary work has been limited to certain local initiatives. For example, many hospitals have implemented antenatal midwifery consultations to address the problems caused by the maternity stay shortening. Although there are wide variations between hospitals, we found that gynaecologists needed time to integrate these consultations and to recognise their added value in the management of pregnant women. However, some gynaecologists are reluctant to accept midwives who are perceived as gradually expanding their scope of practice to the detriment of other professionals (e.g. preconception care, ultrasound, perineal rehabilitation, antenatal consultations).

In the same way, some practitioners criticise gynaecologists for not considering the back referral of pregnant women to the GP or midwife after a referral during pregnancy or to follow inconsistent not always evidence-based approaches. A lack of information transfer between gynaecologists and paediatricians was also mentioned.

Plenty of players in the field of ANC

Some respondents believe that competition between care providers is developing not only because of the diversity of providers (different professional profiles) but also because of the surplus of professionals with the same profile. In particular, surpluses of midwives and gynaecologists (current or potential for the future) were mentioned.



Alternative funding mechanisms to encourage multidisciplinary care pathways

Interviewees formulated suggestions for new financial mechanisms to stimulate multidisciplinary collaboration. For example the introduction of a perinatal care budget for each future mother to pay the care trajectory (or combination of healthcare professionals) of her choice. Another example was to finance multidisciplinary practices of gynaecologists and midwives working together to provide antenatal follow-up and birth preparation, possibly extended with other professionals such as physiotherapists or psychologists.

5.2.7 Challenges and issues expressed by healthcare professionals

Gynaecologists

Gynaecologists feel financially disadvantaged compared to midwives: midwives benefit from a more favourable reimbursement scheme for their antenatal consultations than gynaecologists (full reimbursement for contracted midwives vs. partial reimbursement for contracted gynaecologists. For more details on reimbursements see section 2.3.1 in the supplement).

Gynaecologists are suspicious of independent midwives whose role in antenatal care and delivery seems to be growing: for example, gynaecologists do not want to be held accountable for adverse birth outcomes if they were not involved from the onset of labour, such as in case independent midwives refer to gynaecologists when things go wrong during labour. For hospital midwives the situation is different, since they collaborate daily with gynaecologists at the maternity service and the delivery unit. In this joined care model gynaecologists can anticipate potential problems. In addition, when gynaecologists and midwives work together in a team, they know each other, which facilitates trusting relationships.

In Flanders, gynaecologists are concerned about the inflow of newly graduated gynaecologists. If the number of graduated gynaecologists is not more restricted, gynaecologists fear an oversupply in the near future, hampering next graduated gynaecologists to find a practice in Flanders.

Midwives

The role of midwives evolves due to shorter hospital stays; in hospitals, the workload of midwives has increased, especially the intensity of care provided during the first postpartum days, while a part of later postnatal care shifted towards home, where competences, quality criteria and lack of collaborative networks are deplored. The impact of these changes on the antenatal period is clear, particularly in terms of time devoted to information provision. Unfortunately, not all midwifery training programmes have yet made the changes to adapt the skills of midwives to an outpatient environment. A mismatch between the available midwifery profiles and those required is perceived as an acute problem.

“De 3-jarige BA vroedkunde is absoluut niet voldoende om goeie vroedvrouwen af te leveren. Vroedvrouwen hebben grote verantwoordelijkheden (bijv. ze mogen voorschrijven) en deze nemen alleen maar toe. Momenteel heeft niet elke vroedvrouw die afstudeert ervaring met eerste lijn.” (Midwife)

“Sage-femme à domicile est une porte de sortie pour celles qui ne trouvent pas de job en hospitalier. Or, pour le moment les études ne sont pas faites pour que les sages-femmes soient opérationnelles à domicile à la sortie de l'école.” (Midwife)

Il faudrait trouver une solution pour pallier ce problème comme par exemple, l'obligation de compagnonnage par une sage-femme plus expérimentée ou l'obligation d'avoir une expérience hospitalière avant de pouvoir faire du domicile.” (Gynaecologist)

Large numbers of newly graduated midwives do not find a job in midwifery. The number of midwifery students is steadily increasing, but midwifery practices still have vacancies that they cannot fill with experienced primary care midwives. In contrast, in hospitals, the number of midwives is perceived to be decreasing due to shorter hospital stays, when in fact there is more work to be done in less time.



Starting an independent practice allows newly graduated midwives to practice, but without any experience (in primary care). In addition, midwives (graduated after 1/10/2018) are no longer licensed to practise nursing activities outside the obstetrical areas (neonatology, fertility and gynaecology).^j As a result, the range of employment opportunities is more limited.

Independent midwives complain of insufficient income to lead a decent life, especially when they choose to contract with the NIHDI where their fees are capped. Some midwives decide to no longer work under a contract with the NIHDI in order to set their fees more freely.

Midwives deplore a lack of knowledge among other professionals and the general public about the role and specificities of midwifery. The services of midwives are little known both by healthcare professionals and the public. Midwives note that pregnant women use their antenatal services, not because other professionals have referred them, but after a previous experience or experiences of relatives.

“Cependant, le premier point d'accès aux soins obstétricaux reste le gynécologue. Il constatera la grossesse par une prise de sang et une échographie. La sage-femme ne peut faire de confirmation de la grossesse que par une prise de sang. Le recours à une sage-femme ne se fait, dans ce cadre, que lorsque la patiente a déjà eu l'expérience d'un suivi par sage-femme ou a eu connaissance des services de maïeutique par des proches.”
(Midwife)

General practitioners

General practitioners believe that their role is to ensure continuity of care throughout the life of family members. During pregnancy, the involvement of general practitioners is variable and depends on the place given by other professionals and local initiatives, such as the availability of a midwifery

practice or a centre of expertise in maternity care (Expertisecentra Kraamzorg).

Interviewees stated that general practitioners can contribute to the support provided to pregnant women during pregnancy, especially when they are familiar with the woman, couple or family, and have established a trusting relationship. In addition, general practitioners can monitor and treat health problems not related to pregnancy.

Physiotherapists

Physiotherapists feel disadvantaged compared to midwives because physiotherapy is only available on medical prescription, physiotherapists have a lower range of nomenclature codes (e.g. no code for group sessions nor for home visits), the total number of ante- and postnatal sessions (taken together) is limited to nine, the co-payment due for physiotherapists' consultations is always higher than for midwives (also for contracted professionals). Although antenatal preparation consultations offered by physiotherapists and midwives are complementary rather than competitive, pregnant women do not tend to invest in both (see also our analysis of AIM/IMA data in section 5.3.3 of the supplement). Physiotherapists feel that their added value in antenatal (and postnatal) care is unknown or unrecognised both by other healthcare professionals and the population. For example, physiotherapists criticised gynaecologists or midwives for referring pregnant women only in case of serious complaints, while a much broader group – if not every pregnant woman – would benefit from the antenatal physiotherapy.

“Er is veel onwetendheid over wat kinesitherapeuten te bieden hebben tijdens de zwangerschap, zowel bij het publiek als bij andere zorgverleners.”
(Physiotherapist)

^j Interested readers who wish to learn more about midwifery workforce and its potential evolution are referred to KCE report 312.³⁰



“Gynaecologen geven de boodschap dat kiné niet nodig is. ‘Ga sporten, dat is evengoed’. Dus er is een soort van miskennen van het nut van pre- en postnatale kiné, vanuit een gebrek aan kennis.” (Physiotherapist)

Physiotherapists stated that their involvement is required in early (or before) pregnancy. They consider that their interventions could be more effective if started during or even before pregnancy, particularly education regarding birthing positions, the treatment of postural problems and the preparation of the pelvic floor muscles during the final weeks of pregnancy. One interviewee suggested that the ideal physiotherapeutic care path should start before pregnancy as part of preconception care (one or two consultations), should be integrated to ANC for all women, including women with a low-risk pregnancy (e.g. two to three consultations between 15 and 30 weeks of pregnancy, weekly after 30 weeks).

Similarly to midwives, physiotherapists expressed dissatisfaction about their income leading some of them to resign from the conventions setting a fixed fee for their services. Choosing for a free consultation fee is coupled with disadvantages such as no telematics bonus, and lower reimbursement for their patients. From 2015, a specific professional qualification in abdomen and pelvic rehabilitation and antenatal physiotherapy is set up. This specific accreditation requires the maintenance and update of knowledge about abdomen and pelvic rehabilitation and antenatal physiotherapy and a minimum of 1200-hour practice or scientific research;²⁵ however this accreditation is not valued in terms of a higher income, nor is it mandatory for providers of ante- and postnatal physiotherapy. By consequence, although this qualification is an investment for the physiotherapist, the advantages obtained by this additional training are limited so far.

“Par rapport aux sages-femmes, nous avons moins de codes INAMI et nous n’avons pas de code INAMI pour la présence en salle d’accouchement. Par contre au niveau de la rééducation périnéale, la kinésithérapie est vraiment un plus par rapport aux sages-femmes.” (Physiotherapist)

Paediatricians

The interviewed paediatricians considered their role in ANC as limited. However, they ask ANC professionals to announce, explain and organise with future parents the paediatric consultation at day 5 of postpartum^k. This will increase the chances of the newborn to be adequately followed by a paediatrician who can rapidly assess the health status and diagnose some particular problems.

5.3 Qualitative evidence: key messages

Table 7 provides an overview of parents’ and healthcare professionals’ perspectives regarding the provision and uptake of routine ANC.

These results are in line with findings of a Cochrane review that identified key barriers and facilitators to the uptake (or not) of ANC services by pregnant women, and in the provision (or not) of good-quality ANC by healthcare providers.³¹ This review concluded that initial or continued use of ANC depends on a perception that it will be a positive experience. The delivery of high-quality services include continuity of care that is personalised, kind, caring, supportive, culturally sensitive, flexible, and respectful of women’s needs, and that allow staff to take sufficient time to provide relevant support, information and clinical safety for the woman and the baby. The capacity of healthcare providers to provide the kind of high-quality, relationship-based, accessible ANC depends on the amount of resources and staffing as well as the time to provide flexible personalised, private appointments that are not overloaded with organisational tasks. Healthcare providers also require sufficient training and education to do their job well.

^k In Flanders, the adopted terminology is ‘het zevendedagsonderzoek van de pasgeborene’.



Table 7 – Provision and uptake of routine ANC - Parents’ and healthcare professionals’ perspectives: Key messages

	Parents’ perspective	Healthcare professionals’ perspective
Preconception care	<ul style="list-style-type: none"> Women search for as much information as possible from the moment they wish to become pregnant, but are reluctant to consult a healthcare professional (except in the context of stopping contraception). 	<ul style="list-style-type: none"> Preconception care is not well-developed, despite its potential benefits. Preconception care takes time but healthcare professionals perceived the lack of well-developed preconception care as a missed opportunity for improving health behaviours before and during pregnancy.
Clinical follow-up	<ul style="list-style-type: none"> Consultations with ANC professionals are experienced by parents as crucial moments to discuss their questions and doubts and to be reassured about the normality of pregnancy and baby’s development. 	<ul style="list-style-type: none"> ANC professionals recognise that future parents use consultations of different providers in a cumulative way instead of alternating them. While most consultations are one-to-one, some consultations are provided to groups of pregnant women (CenteringPregnancy-like groups).
Birth & postpartum preparation	<ul style="list-style-type: none"> The multiplicity of antenatal activities offered either by healthcare professionals or external actors, both within and outside hospital structures, creates confusion about what is needed during pregnancy and what differentiates clinical follow-up from birth preparation. Parents are satisfied about different formats of birth preparation, especially small groups’ sessions and formats stimulating fathers’ involvement. Additional psychological and administrative support is desirable. Postpartum preparation is not yet systematic for all parents. 	<ul style="list-style-type: none"> Plenty of initiatives exist, accessible by internet or implemented by healthcare professionals or organisations involved in child welfare. Content and coverage differ between professionals and organisations. All these initiatives are not coordinated nor offered to all pregnant women.
Time issue	<ul style="list-style-type: none"> In advance planning of consultations is appreciated because it help to plan other activities such as work. Parents estimated that the duration of consultation must be tailored to allow to answer their questions although it means more waiting time in the waiting room. However, they have a lot of understanding for the workload and time pressure a gynaecologist faces. More than from a physician, parents expect midwives to take time for them. Midwives are perceived as highly accessible and available, meaning that parents can call or sms at any time. 	<ul style="list-style-type: none"> Preconception care is time gained during pregnancy. Information must be timely provided.
Quality of care	<ul style="list-style-type: none"> Information transfer between ANC providers and parents is not systematic nor structurally embedded (e.g. parents missed an overview of ANC services and trajectories). Parents did not receive sufficient information to take informed-decisions. 	<ul style="list-style-type: none"> No mechanism in place to monitor the quality of antenatal (and postnatal) care and inadequate quality indicators to capture the quality of antenatal care management.



	<ul style="list-style-type: none"> ANC professionals' communication with parents is not always smooth (e.g. short consultations without supportive tools). Availability and accessibility of ANC professionals is highly valued. 	<ul style="list-style-type: none"> Uptake of ANC clinical guidelines is not generalised among gynaecologists leading to potential overuse of screening tests and procedures.
Multidisciplinary collaboration and communication	<ul style="list-style-type: none"> Parents preferred a follow-up by the same healthcare professional throughout pregnancy. For non-critical problems or worries, pregnant women rather turned to their GP, midwife or maternity service. For more serious problems they reported to prefer their gynaecologist. 	<ul style="list-style-type: none"> Multidisciplinary networks are insufficiently developed. Inadequate communication tools hamper trust, transfer of relevant information and collaboration. In particular, the software programs supporting the electronic medical record used in hospitals and in private practices are incompatible. Many healthcare actors with both a specific expertise and shared competences create role ambiguity and overlap resulting in interprofessional tensions. Suggestions for new financial mechanisms to stimulate multidisciplinary collaboration were formulated by the interviewees.
Expectations and satisfaction items	<ul style="list-style-type: none"> Criteria for the choice of an healthcare professional were habit, trust, familiarity, appreciation of a certain (personality) characteristic or approach, recommendations by GP or peers, coincidence, feeling at ease, availability, proximity and the linkage to a hospital. They appreciated empathic professionals who were sensitive to their needs and preferences and who could create realistic expectations, who were available and highly accessible, and who were attentive to other than medical aspects of pregnancy. They valued neutrality and objective information. Parents wanted to be involved and empowered in their new parenting role. Parents' disappointments were related to healthcare providers' attitudes and reactions, too much or too little care, defective material, organisational issues or medical interventions. Appreciations referred mostly to the availability of healthcare professionals. 	<ul style="list-style-type: none"> Gynaecologists feel (financially) disadvantaged compared to midwives; are suspicious of the growing role of independent midwives and are concerned about the number of newly graduated gynaecologists. Midwives experience an evolving role in hospitals and in outpatient settings for which they are insufficiently prepared by their training. They regret a lack of knowledge among other professionals and the general public about the role and specificities of midwifery. Large numbers of newly graduated midwives do not find a job in midwifery. Independent midwives perceive their income as insufficient to make a living. General Practitioners can contribute to the support provided to pregnant women during pregnancy; not only to monitor and treat health problems not related to pregnancy, but also as a family doctor offering support and guidance during important life events affecting all family members. Physiotherapists feel (financially) disadvantaged compared to midwives and undervalued as ANC professionals. Their role could be expanded beyond relieving pain and complaints, including education relative to birthing positions, breathing, treatment of postural problems and the preparation of the pelvic floor muscles, starting by preference before pregnancy. Paediatricians ask ANC professionals to announce, explain and organise with future parents the paediatric consultation at day 5 of postpartum.



6 ANTENATAL CARE: MODELS AND PATHWAYS ADOPTED ABROAD

Among a multitude of interventions that can be initiated to improve the utilisation and quality of ANC, the WHO guideline¹⁰ supports two organisational models for antenatal care, i.e. midwife-led continuity of care models (MLCC) and group antenatal care.

6.1 Midwife-led continuity models compared to doctor-led models of antenatal care

6.1.1 Midwife-led continuity models of care (MLCC)

According to this model, the midwife is, in partnership with the woman, the lead professional in the planning, organisation and delivery of care starting from the initial booking appointment, up to and including the early days of parenting.³² The midwife is accountable for the assessment of the woman's needs, the planning of her care, the referral to other professionals as appropriate, and for ensuring the provision of maternity services. MLCC aim to provide care in either community or hospital settings, usually to healthy women with uncomplicated or 'low risk' pregnancies. In some models, midwives provide continuity of midwifery care to all women from a defined geographical location, acting as lead professional for women whose pregnancy and birth is uncomplicated, and continuing to provide midwifery care to women who experience medical and obstetric complications in partnership with other professionals.

Some MLCC aimed to a defined group of women through a team of midwives sharing a caseload, are often called 'team' midwifery. Thus, a woman receives her care from several midwives in the team, the size of which can vary. Other models, often termed 'caseload midwifery', aim to offer greater relationship continuity, by ensuring that childbearing women receive their ante-, intra- and postnatal care from one single or maximum two midwives.³²

6.1.2 Doctor-led and shared models of care

Other models of care include the following:³²

- a. **Obstetrician-provided care.** This is common in Belgium, in France but also in North America, where obstetricians are the primary providers of antenatal care for most childbearing women. An obstetrician (not necessarily the one who provided antenatal care) attends the birth, and midwives provide intrapartum and postnatal care.
- b. **Family doctor-provided care,** with referral to specialist obstetric care if needed. Obstetric nurses or midwives provide intrapartum and immediate postnatal care but not at a decision-making level, and a medical doctor (i.e. GP) attends the birth.
- c. **Shared models of care,** where responsibility for the organisation and delivery of care, throughout initial booking to the postnatal period, is shared between different healthcare professionals. At various points during pregnancy, childbirth, and the postnatal period, responsibility for care can shift to a different provider or group of providers. Care is often shared by family doctors and midwives, by obstetricians and midwives, or by providers from all three groups.

In some countries (e.g. Canada and the Netherlands), the midwifery scope of practice is limited to the care of women experiencing uncomplicated pregnancies, while in other countries (e.g. the United Kingdom, France, Australia and New Zealand), midwives provide care to women who experience medical and obstetric complications in collaboration with physicians (including GPs and obstetricians). In addition, maternity care in some countries (e.g. Republic of Ireland, Iran and Lebanon), is predominantly provided by a midwife but is obstetrician-led, in that the midwife might provide the actual care, but the obstetrician assumes overall responsibility for the care provided to the woman throughout her ante-, intra- and postpartum periods.



6.1.3 Comparison between models of care

A Cochrane systematic review and meta-analysis was conducted aiming to compare MLCC with other models of care for childbearing women and their infants.³² Authors identified 15 studies involving 17 674 mothers and babies. Included studies were conducted in the public health systems in Australia, Canada, Ireland and the United Kingdom with variations in models of care, risk status of participating women and practice settings. All trials included licensed midwives, and none included lay or traditional midwives (e.g. Doulas). All the details regarding methodology and all reported (critical and secondary) outcomes can be found in the supplement (section 3.2.3.). Women who received midwife-led continuity of care were less likely to have an epidural (RR 0.85; 95% CI 0.78 to 0.92; participants = 17 674; studies = 14; high quality), fewer women had instrumental vaginal births (RR 0.90, 95% CI 0.83 to 0.97; participants = 17 501; studies = 13; high quality), women were more likely to have a spontaneous vaginal birth (RR 1.05, 95% CI 1.03 to 1.07; participants = 16 687; studies = 12; high quality), women were less likely to experience preterm birth (RR 0.76, 95% CI 0.64 to 0.91; participants = 13 238; studies = 8; high quality), and they were also at a lower risk of losing their babies before and after 24 weeks or during birth (RR 0.84, 95% CI 0.71 to 0.99; participants = 17 561; studies = 13; high quality). However, there was no difference in the number of caesarean sections or intact perineum reported in both care models.³²

Important results of this study are the absence of differences between groups for foetal loss before or after 24 weeks and neonatal death, induction of labour, antenatal hospitalisation, antepartum haemorrhage, augmentation/artificial oxytocin during labour, opiate analgesia, perineal laceration requiring suturing, postpartum haemorrhage, breastfeeding initiation, low birthweight infant, five-minute Apgar score less than or equal to seven, neonatal convulsions, admission of infant to special care or neonatal intensive care unit(s) or in mean length of neonatal hospital stay (days).³²

The majority of included studies reported narratively a higher rate of maternal satisfaction in MLCC.³² Similarly, there was a trend towards a cost-saving effect for midwife-led continuity care compared to other care models.

Unfortunately, no additional outcomes were measured to evaluate the antenatal management of the childbearing women.³²

Bernitz et al. (2016) published a recent randomised controlled trial comparing low-risk women' satisfaction with intrapartum care in a midwifery unit and an obstetric unit within the same hospital in Norway.³³ Midwifery units intend to present an alternative setting to women with low risk of complications during labour. The design of the low-risk birth care units is often a homelike environment with medical and technical equipment at a low or a moderate level. The midwifery unit is dedicated to healthy women with low risk of complications who want a normal labour without interventions. The unit does not offer epidural analgesia nor augmentation with oxytocin. Obstetricians are not present, but will come when called for. Women who need extended surveillance or medical pain relief are transferred to the obstetric unit that offers extended surveillance, epidural analgesia and instrumental vaginal deliveries. Antenatal care is provided by midwives in primary care; however no continuity of care by a unique practitioner is offered at the midwifery unit nor at the obstetric unit. More details are reported in section 3.2.5 of the supplement.

Midwife-led continuity models versus other models of care for childbearing women: Key messages of the Cochrane's review³²

- **Women who received midwife-led continuity models of care were less likely to experience interventions (epidural, episiotomies and instrumental vaginal births) and were more likely to be satisfied with their care than women who received other models of care.**
- **Midwife-led continuity models of care and medical-led models of care are equally safe for healthy women with uncomplicated pregnancies; both models are equivalent in terms of quality of care delivered. Authors did not find any increased likelihood for any adverse outcome for women or their infants associated with having been randomised to a midwife-led continuity model of care.**



- **Less technical and instrumental management coupled with positive outcomes are observed when midwives provide intrapartum care in hospital settings and also where midwives provide continuity through pregnancy and childbirth.**
- **Practice settings such as midwife-led units can be a confounding influence on outcomes of midwife-led continuity of care, although home birth was not offered in any of the trials.**
- **The generalizability of these observations and conclusions to women with existing serious pregnancy or health complications cannot be assumed, since they were mainly excluded from studies.**
- **Non-physical outcomes such as satisfaction and breastfeeding initiation are understudied.**
- **Midwife-led continuity of care is a complex intervention, and it is impossible to unpick the relative importance of underlying philosophy (normality and the natural ability of women to experience birth without routine intervention) and continuity of care.**
- **The adoption of midwife-led continuity of care requires settings with well-functioning midwifery programmes (sufficient numbers of well-trained midwives, shift in roles and responsibilities between midwives and other care providers for the management of antenatal and postnatal care), and adequate financing of midwife-led services.**

6.2 Group antenatal care model compared to individual antenatal care (one-to-one)

In most Western countries, the predominant model of antenatal care involves a schedule of one-to-one visits with a midwife, an obstetrician or a general practitioner (GP) in a hospital or in another clinical setting. An alternative way of providing antenatal care involves the use of a group model rather than a one-to-one approach. Group antenatal care is provided by a midwife or an obstetrician to groups of eight to 12 women of similar gestational age. Groups meet eight to 10 times during pregnancy at the usual scheduled visits, with sessions running for 90 to 120 minutes.³⁴

6.2.1 Traditional individual antenatal care

Traditionally the model of antenatal care involves a longer first visit including a complete history and examination, followed by an average of six to nine short, private visits with a clinician, most often an obstetrician, less frequently a midwife. Antenatal care providers are experiencing pressure to consult an increasing number of women, who are receiving shorter appointments but longer waiting times. Due to the limited time devoted to every individual patient, answering questions and providing counselling on health behaviours is often limited.³⁵

6.2.2 Group antenatal care

Group antenatal care is based on some intuitive principles, which assert that care is most effectively and efficiently provided in groups and that learning and support are enhanced. Indeed, group antenatal care provides significantly more contact with providers (from two hours across pregnancy in individual care to 20 hours in group), provides support services, and answers to the complex needs of pregnant women. Advantages of group interventions include, but are not limited to: enhanced learning and development of parenting skills, attitude change and motivation, higher insight through sharing common experiences, and peer support. In turn, groups facilitate development of new community norms for health enhancing behaviours.



Usually in the group practices, antenatal care is provided by a midwife, an obstetrician or another maternity care provider. Physical assessments such as fundal height and foetal heart rate do not take place in the group room but are an individual assessment alongside the group to maintain privacy. Groups integrate the usual antenatal assessment with information, education and peer support. Emphasis is placed on engaging women more fully in their own health assessments. Women with issues of high risk during pregnancy receive concurrent care provided by a specialist obstetrician or physician, in addition to attending group sessions.

Group antenatal care has been developed in the USA in a model known as CenteringPregnancy, developed by Sharon Schindler Rising. CenteringPregnancy, as one model of group antenatal care, allows increased time in antenatal care, with women receiving between 12 and 20 hours of care in a group setting compared with an estimated two to three hours (eight to 10 visits of 15 to 20 minutes' duration) during conventional antenatal care. This would be likely to result in increased education about pregnancy, childbirth and early parenting, which in turn may affect perinatal outcomes.³⁴

Group antenatal care is currently implemented in over 300 settings in the United States, Canada, the United Kingdom, and Sweden.³⁶ Since 2012, CenteringPregnancy has also been offered in the Netherlands in eight different midwifery practices. A recent study³⁷ comparing 597 pregnant women receiving CenteringPregnancy and 1 610 women receiving individual care in the same practices showed that CenteringPregnancy led to better pregnancy processes and better experiences among pregnant women and care providers (less frequent use of pain relief and oxytocin, more frequent breastfeeding, better feeling of being supported and active participation to care and greater enthusiasm of health care providers). No statistical differences were reported for neonatal outcomes between individual and group follow-up. The bottlenecks for the wider implementation of this model of group antenatal care are the greater time investment of care providers (99 minutes per meeting) and the lack of structural financial compensation for this.³⁷

In Belgium, group consultations based on CenteringPregnancy principles are proposed in Sint-Niklaas (*de Kiem*) and in Brussels (pilot project 'Born in Brussels' for vulnerable pregnant women only). As in other countries, this form of antenatal care implies a large time investment of the care providers and an adapted financing.³⁸

6.2.3 Comparison between models of care

A Cochrane systematic review and meta-analysis was conducted aiming to compare the effects of group versus conventional individual antenatal care on psychosocial, physiological, labour and birth outcomes for women and their babies as well as on care provider satisfaction.³⁴ Four randomised controlled trials (involving 2 350 women) were included. No differences were observed between women who received group antenatal care and those given one-to-one care in terms of important pregnancy outcomes such as preterm birth, low birthweight or perinatal mortality. Women who attended group antenatal care were no more likely to initiate breastfeeding than those receiving individual care. All the details regarding methodology and all reported outcomes can be found in the supplement (section 3.3.3.).

In the United States, a transdisciplinary team of researchers at Yale University, representatives from United Health Group, and health care providers at Vanderbilt University Medical Center developed an innovative model of group antenatal care with a novel information technology (IT) platform, called *Expect With Me*.³⁹ More details are reported in section 3.3.5 of the supplement.



Key messages

- **In the Cochrane systematic review compared to one-to-one care, group antenatal care was not associated with a lower rate of preterm birth nor with higher rates of adverse outcomes, although additional studies are needed to confirm this finding.**
- **In the Netherlands and Belgium, innovative pilot projects were recently launched to offer group antenatal care to socially vulnerable women. The objective is to reduce the health gap in this population group. These projects were financed by private or public financial means and organised at a local level.**
- **Future research is required to consider whether benefits are derived for specific groups of women (e.g. obese women) and to determine the best model for group antenatal care (should partners be encouraged to attend? Or are women-only groups more beneficial?).**

6.3 Lessons from abroad: antenatal care organisation, pathways and financing

6.3.1 Common challenges

In many European countries, various factors, including demographic, lifestyle and medical co-morbidities, contribute to an increasing complexity of maternity care: the proportion of complex pregnancies and caesarean section rates are increasing, the proportion of low birth weight babies and preterm births is growing and breastfeeding rates stay low. Moreover, pregnant women with low health literacy skills are not always optimally reached by birth care professionals, due to several factors, including: lack of knowledge of the pregnant woman and care providers, limited resources (including financial, such as out-of-pocket payments), culturally determined habits regarding care, communication problems. All of these factors influence the maternity service provision. The maternity services need to respond to the gradually complex population needs in order to provide safe, evidence-based, accessible care to all mothers, babies and their families.

In an effort to compare antenatal care services provided in different European countries, we have described the antenatal care systems and pathways provided in the following countries: the Netherlands, the United Kingdom, Ireland, France, Sweden and Finland. After having extensively described each country separately (see chapter 8 in the supplement), we propose here to synthesise the peculiarities of the ANC organisations in a transversal way. Unfortunately, the description of the ANC organisation in Finland was too superficial to be compared with those of the other countries, leading us to focus on five countries.

6.3.2 An Integrated Birth Care

Most countries have developed a strategy at the national or at a regional level, providing a clear vision and direction as to how maternity services have to be developed, improved and made safer. The common aims pursued are to ensure that every woman will be able to access the right level of care, from the right professional, at the right time and in the right place, based on her personal needs. These countries adopted models of integrated care comprising adapted care pathways to the situation of pregnant women. This required a major change: whereas maternity care were mainly specialist led and hospital based, such vision envisages another approach that is woman-centred, and provides integrated, team based care, with women seeing the most appropriate professional, based on her personal needs. In this model, every woman has a dedicated lead healthcare professional who endorses the clinical responsibility for her care. This implies that an integrated care model allows for the use of the lowest level of complexity, while having the ability and capacity to provide specialized and complex care, quickly, need based, while ensuring patient safety at each stage. Such model is already implemented in the Netherlands, the UK and Sweden. In Ireland, a strategy was recently set up to radically change the ANC provision and the maternity services according to this vision for the next decennia.⁴⁰ In France, such a vision is not really formulated. However, the Haute Autorité de Santé published in 2016 clinical recommendations for a better management of pregnant women that are based on the UK vision's building blocks.



The main components of an Integrated Birth Care are:

- **A central position for the pregnant woman**, her partner and (unborn) child: to ensure the pregnant woman freedom for and respect for her own decisions, needs and concerns but also comfort and confidence in all healthcare providers with whom she will have a contact.
- **An adequate information and counselling:** based on Evidence-Based Practice, sufficient time devoted to these activities, and supporting material (e.g. user friendly leaflets or identification of (validated) interactive websites and pregnancy apps; attention given to people with sensory or learning disabilities and who do not speak the national language). Questions that are outside the care provider's field of knowledge or competences (for example regarding the reimbursement of certain types of care, insurances, home furnishings, financial and formal responsibilities in parenting) are referred to relevant authorities or services.
- **One fixed point of contact** during the pregnancy, i.e. the coordinating care provider or dedicated lead healthcare practitioner (midwife, obstetrician, GP...). This healthcare professional ensures the interests of the pregnant woman, supports her self-management and ensures that integrated birth care is provided according to the individual birth care plan.
- **An individual birth care plan** according to the principles of joint-decision making, including all important aspects related to supervision and care for a future mother from the preconception phase up to and including the first six weeks after birth. In all phases of the birth care process, there are many preferential decisions to be made, for example about whether or not a preconception consultation is needed, choices concerning antenatal diagnosis, manner and place of birth, type of pain relieving treatment. These decisions are made in a shared dialogue between the pregnant woman and the care provider. The plan is set up according to the identified risks and describes all important steps and appointments that have to be scheduled during the pregnancy (information, laboratory and other clinical tests, division of responsibilities between care providers, etc.). The plan is the property of the pregnant woman.

- **The informed consent:** on the basis of complete information, the woman makes informed choices regarding her pregnancy, delivery and maternity period. An inseparable part of informed consent is informed refusal: the right to refuse proposed screening tests and treatments.

Integrated care involves a coordinated and coherent set of services, which are planned, managed and delivered to individual service users through defined organisations and cooperating professionals. In order to ensure that care for (future) pregnancy and birth in the future is as good and as coordinated as possible, a network approach has to be adopted. A network of birth care is a coherent set of actors or organisations that pursue a common goal with ever-changing efforts, namely the realisation of the best achievable quality of birth care from the patient's perspective.

Integrated care aims to provide a continuum of care for service users that crosses the boundaries of public health, primary, secondary, and tertiary care. The collaboration of all actors involved is ideally supported by means of one digital file. In the Netherlands as in France, the antenatal care services cover a larger period than in the other countries, starting from the preconception phase. In the Netherlands, a set of quality indicators is drawn up and monitored for the entire birth care (e.g. percentage of pregnant women who can reach the nearest midwifery practice within 10 minutes, percentage of women who started pregnancy counselling in primary care and where the first consultation took place before the 10th week of pregnancy, percentage of women who smoke during the pregnancy).⁴¹

The adoption of such Integrated Birth Care may require an adaptation of the maternity care system. In the Netherlands for example, from 2017, the payment system for maternity care allows bundled payment for both primary and secondary maternity care providers, an adjustment that requires more cooperation or even integration between both levels. In this country, the current system is characterised by two complementary but also sometimes contradictory themes: 1) risk selection of pregnant women for specialist care and 2) collaboration between primary and secondary caregivers. While the first theme outlines the domains and responsibilities necessary for determining the indications for specialist care, the second theme emphasises the importance of cooperation between healthcare professionals. Also, interprofessional and inter-organisational collaboration asks for the development of new clinical practices.⁴²



6.3.3 Care pathways to answer specific risks

Whatever the model adopted, three factors are sovereign:

- Patient safety is the first and the overriding principle to be respected.
- The continuity of care(r) has to be guaranteed.
- Proximity, accessibility of care and privacy should be ensured.

Because routine involvement of obstetricians in the care of women with an uncomplicated pregnancy at scheduled times does not appear to improve perinatal outcomes compared with involving obstetricians when complications arise, many countries adopt care pathways for different levels of risk with a system of clear referral paths. Three levels of care provision need to coexist, including primary care (GPs and midwives preferred for uncomplicated pregnancies (gatekeepers)), secondary care (specialists working in private practices or general hospitals) and tertiary care (perinatology centres or university medical centres).

Pregnant women/babies are generally classified into risk groups: normal-risk, medium-risk and high-risk. Although this classification is common to several countries, risk factors may differ within categories or adopt different thresholds (e.g. maternal age is one of commonly accepted risk factors, but in some countries first-time pregnancy after age 35 is interpreted as a risk factor while in others, the threshold is set at 38 years or 40 years).

Referring pregnant women from the lowest level of care to another level requires levers for action. In particular, the risk selection and referral have to be based on a list of pre-existing, pregnancy and perinatal related disorders. The presence of a distinct (single) medical or obstetric risk factor for adverse outcomes leads to define a high risk status. Additionally, non-medical factors are taken into account (domestic violence, poor education, single parenthood, low income and serious debts, psycho-social problems, having a migrant background, or being a teenager with an unplanned pregnancy). In order to define the levels of risk and to determine which actor has to intervene in which setting, healthcare professionals refer to predefined lists of risk situations (see chapter 8 of the supplement).

Moreover, distinct follow-up pathways and referral procedures coexist to guide healthcare practitioners facing specific medical situations; healthcare professionals and settings to be involved are clearly identified (see chapter 8 of the supplement).

6.3.4 Particular attention for vulnerable women (dedicated pathways)

The guidance of pregnant women with low health literacy skills requires more specific attention and also potential additional care. The coordinating care provider fulfils an even more important role for this target group.

In most countries, a screening of all pregnant women is foreseen in order to detect the vulnerable ones and to offer them a structured supportive organisation: psychosocial pathology, psychosocial problems or use of substances, preferably with the aid of a screening instrument (Mind2Care, R4U or other instrument), as soon as possible (preferably before the 15th week of amenorrhoea). Furthermore, the identification of vulnerable women is followed by a referral to adequate services:

- Women with simple problems are referred to relevant professionals or organisations with specific expertise;
- Women with complex or recurrent problems (psychosocial pathology, psychosocial problems or use of substances in combination with a lack of resources; direct danger for children; current substance abuse and/or maltreatment; and/or lack of permission to contact current support services) will be referred to professionals or organisations specialised in supporting vulnerable women;
- When use of drugs, alcohol and tobacco is identified: encourage cessation of their consumption and refer the woman to a specialised consultation aiming the cessation and the social support as a whole;
- Faced with a situation of precariousness or social risk: a support needs to be offered to women (or couples) both for care and accommodation: "adults relay", "women relays", support network, interpreter, shelter houses for parent-child dyad, social workers, free hotline for legal advice;



- In situations of domestic violence: a networking of professionals needs to be activated around the woman and the couple: midwife and paediatric nurse, family doctor, psychologist, etc.

In the Netherlands, the agreement of the woman is essential to organise the referrals. A blueprint offers a flowchart to identify and support care to vulnerable pregnant women, in which the structuring of care for pregnant women with psychosocial problems is central. In the UK, The National Institute for Health and Care Excellence developed a specific pathway to guide healthcare practitioners handling with pregnant women with complex social factors such as domestic abuse; recent migrants, asylum seekers or refugees; pregnant teenagers and substance misuse.

6.3.5 *Preparation for birth and parenthood*

In all countries, an attention is paid to an early start to preparation for birth and parenthood, and a broader approach to parent support and to improving the skills of women and their partners in health issues. The declared objectives are to guide health professionals:

- To prepare couples for their child birth and return back home, through educational sessions adapted to the needs and expectations of the future parents;
- To support parents-to-be, especially those who are vulnerable, to increase parent-child bonding;
- To provide information and coaching on parenting: building family relationships; the material, educational and emotional needs of the growing child;
- To encourage an adequate coordination among the relevant professionals and with the pregnant woman, from the antenatal to the postnatal period.

In general, four key time points are foreseen:

1. An early interview for individuals or couples offered as soon as pregnancy is confirmed: it aims to identify information needs, define parenting skills to be developed, assess the pregnant woman's general health, screen for vulnerability, and give all required information regarding local available healthcare facilities, role of professionals, alternative local antenatal and parenthood classes, in order to finalise the birth plan;
2. Antenatal classes composed of pregnant women at the same gestational stage and organised between the initial interview and the birth, using a structured program offered to individuals or groups, encouraging an active participation;
3. Support in the maternity unit between birth and hospital discharge, in order to give information and identifying any need for further support at home; this guidance can be provided individually or in group (thematic sessions);
4. Postnatal support (if mother and baby have left the clinic early, if specific needs were identified during pregnancy or recognised after the birth, or at the parents' request): to provide support for baby care and breastfeeding, to check for postnatal depression, and to perform specific postnatal tests.

6.3.6 *Antenatal consultations: schedule of appointments and content*

Except in the Netherlands and France, where a preconception consultation is advisable (particularly if specific risk factors are identified or for women with chronic disease(s)), other countries start ANC when pregnancy is confirmed, but certainly before 10 weeks of amenorrhoea.

While some countries make no difference between nulliparous and multiparous (average number of consultations is 10 to 12 in one pregnancy), others opt for 10 appointments for nulliparous with an uncomplicated pregnancy and 7 appointments for a multiparous with an uncomplicated pregnancy.



Though in all cases, the timing and the frequency of consultations are adjusted to the needs of the pregnant woman and the course of the pregnancy. If necessary, the healthcare practitioner may suggest fewer but longer consultations.

In all countries, it is recommended that:

- Early in pregnancy, all women receive appropriate written information about the likely number, timing and content of antenatal appointments associated with different options of care and be given an opportunity to discuss this schedule with their midwife or doctor.
- During each appointment, a combination of clinical tests, prophylaxis, interventions, information and support is offered.
- Evidence-based clinical guidelines are available, including recommendations relative to screening and diagnostic tests, prophylaxis and specific interventions to perform (e.g. external cephalic version for babies in transversal or breech presentation).
- Each antenatal appointment is structured and has focused content. Besides the clinical follow-up, the emphasis is placed on information and support, covering the exploration of the care demand, the (family) anamnesis, the health education and health-promoting interventions (e.g. folic acid supplementation, food hygiene, lifestyle advice (including smoking cessation, nutrition, diet, physical exercises and the implications of recreational drug use and alcohol consumption in pregnancy), vaccinations against infections, obesity and overweight, change of medications, change in work conditions. Relevant information regarding screening tests has also to be delivered timely and repeated during the pregnancy.

In some countries, home visits are planned before 32 weeks and around the 34th week in order to assess the environment in which the baby will arrive and to advise the future parents. The home visit offers the obstetric care provider the opportunity to get a good picture of the pregnant woman and her home situation (including psychosocial risks for mother and child).

6.3.7 Free choice of birth place (discussed during ANC)

After an assessment of medical conditions or situations in which there is increased risk for the woman or baby during or shortly after labour, a discussion with the pregnant woman is required about these risks and the additional care that can be provided in the obstetric unit so that she can make an informed choice about planned place of birth.

In countries under study, different settings coexist among which obstetric hospital units, birth centres alongside or on-site an obstetric ward, outpatient clinic and at home. Birth centres combine a home-like environment but the safety of a controlled service. When different settings are available (including home), advantages and disadvantages of all birth settings should be clearly explained (contra-indications, access to midwives and medical staff, access to pain relief, the likelihood of being transferred to another birth setting).

Where home birth is offered, the possibility to refer a woman to second care if needed is foreseen (e.g. for pharmacological pain relief and/or slow progress of the first stage, meconium stained liquor or prelabour rupture of membranes without contractions for more than 24 hours). However, despite the focus on primary care and renowned preference for home births in the Netherlands, the rate of home births decreased over time, from 30.3% of all births in 2000 to 13.1% in 2015. This decrease was related to a change in attitudes of Dutch women, who opt increasingly for a hospital environment, the availability of different healthcare professionals and an easy access to pain relief (epidural).⁴² Additionally, there is an increasing tendency to induce births (pregnancies of over 41 weeks, or women with high blood pressure) in order to prevent complications.⁴¹

6.3.8 Antenatal care financing

Financing alternatives for ANC are out of the scope of this report and have not been thoroughly studied. Nevertheless, it is worth mentioning that the interest for bundle payment financing scheme for maternity care, as an alternative to fee-for-service systems, is growing abroad, in particular in England⁴³ and the USA.⁴⁴



Main characteristics of ANC described abroad: Key messages

Integrated birth care

Vision

- Central position for the pregnant woman, her partner and (unborn) child
- Adequate information and counselling: based on EBP, sufficient time devoted to these activities, and supporting material
- One fixed point of contact during pregnancy, i.e. the coordinating care provider or dedicated lead healthcare professional (midwife, obstetrician, GP...)
- An individual birth care plan according to the principles of joint-decision making
- Informed consent coupled with informed refusal (the right to refuse proposed treatments)

The integrated care model allows for the use of the lowest level of complexity, while ensuring patient safety at each stage

- Main principles of integrated birth care are: patient safety, continuity of care(r), proximity, accessibility of care and privacy
- A coordinated and coherent set of services, which are planned, managed and delivered through defined organisations and cooperating professionals (network approach)
- Interprofessional birth care team whose collaboration is supported by means of one digital file

Care pathways for different levels of risks with a system of clear referral paths

Three levels of care provision

- Primary care for uncomplicated pregnancies; general hospitals; and perinatology centres or university medical centres, with a seamless transfer between settings and professionals

Classification according to risk

- Pregnant women/babies are classified into risk groups from low-risk to high-risk

Referral

- The risk selection and referral is based on a list of pre-existing, pregnancy and perinatal related disorders including medical or obstetric risk factors and non-medical factors

Particular attention for vulnerable women (dedicated pathways)

- Screening of all pregnant women in order to detect vulnerabilities, preferably with the aid of a screening instrument, before the 13rd week of pregnancy and referral to adequate services
- Target group-specific information given during group sessions (CenteringPregnancy)
- Creation of specific pathways by type of vulnerabilities (drugs consumption, mental incapacity, teenagers, insured, asylum seekers, STIs...)

Characteristics and content of ANC

Preconception visit

- General consultation: exploration of the care demand and anamnesis, health education and health-promoting interventions
- Specialist preconception consultation: if specific risk factors are identified or for women presenting chronic disease(s)

Antenatal consultations: schedule of appointments and content

- Different models exist: fixed number of consultations or timing and frequency adjusted to the needs; different or same number of consultations between nulliparous and multiparous, consultations delivered either individually or in groups, etc.
- Early in pregnancy, all women receive appropriate written information about the likely number, timing and content of antenatal appointments associated with different options of care. They have the opportunity to discuss this schedule with their midwife or doctor



7 CONCRETE PROPOSALS FOR INTEGRATED ANTENATAL CARE

7.1 Introduction

The purpose of ANC is to ensure the best health outcomes for mother and child using clinical assessments and screening tests during pregnancy. Although patients' safety is the first and overriding principle, ANC should also create positive pregnancy experiences for women and their partner laying the foundations for healthy parenthood as mentioned by WHO.¹⁰ In addition, pregnancy offers a window of opportunity for health education, increasing health literacy and long-term positive maternal and infant health outcomes.

The current ANC system in Belgium offers clinical follow-up and BPPE for pregnant women provided by skilled healthcare professionals (gynaecologists, midwives, GPs, physiotherapists) and, to a lesser extent, by K&G/ONE/Kaleido workers. Healthcare professionals organise their practice in several settings (hospitals, private practices and to a lesser extent in community practice), mainly on a fee-for-service basis, according to a well-defined legal framework. Nevertheless, the current organisation is not optimal and some pregnant women do not receive antenatal care from the onset of pregnancy. Sub-optimal use of ANC is associated with geographical availability and accessibility of services, status of employment, and status of insurability of the pregnant woman. The next chapter describes the shortcomings of the current system and is followed by recommendations directed to decision-makers, healthcare professionals, their representative associations, K&G/ONE/Kaleido and researchers.

The proposals are based on the findings from the literature review (including international comparison), perspectives of stakeholders (see colophon) and ANC users. They were carefully weighed by KCE experts against the backdrop of the current ANC organisation in Belgium. While ANC is the focus of the concrete proposals we adopted an extended perspective with antenatal care as part of the continuum from preconception to postnatal follow-up. These proposals and the specific action points were discussed during a meeting with experts and stakeholders (see colophon).

7.2 Shortcomings in the organisation of antenatal care

Several shortcomings in the organisation of ANC have been identified:

Lack of vision

The international comparison emphasised the usefulness of developing an ANC vision that refers to the central position of pregnant women, adequate counselling, care coordination and the creation of a birth plan. As previously mentioned, adequate counselling and care coordination are stumbling blocks in the current ANC system. According to interviewed parents, healthcare providers already offer women centred care but some parents would have preferred parent centred care involving the partner more intensively. Finally the birth plan is underused and focuses on the delivery only. The development of a vision is also supported in the framework for quality maternal and newborn care proposed by Renfrew et al.⁴⁵

Unequal care supply

Literature showed that different models of care (e.g. group antenatal care or midwife-led continuity models of care) may lead to equivalent maternal and neonatal health outcomes in comparison to doctor-led and one-to-one ANC. On the other hand, midwives reported that their training is still inpatient oriented. Therefore, they feel less well prepared for outpatient consultations. This may hamper the instalment of midwife practices, in particular in less densely populated regions.

The unequal distribution on the territory of gynaecologist supply (especially in Wallonia), of midwifery-led care initiatives and of supply for BPPE sessions contributes to some parents' disappointment with the lack of existing structures and support.

In contrast, although they remain a reference for many citizens, GPs seem to be less involved in the clinical pregnancy follow-up in comparison with several decades ago. The implication of physiotherapists in birth preparation shows large disparities within regions.



Lack of coordination

A multidisciplinary approach of pregnancy needs coordination by a care coordinator using adequate tools. Up to now, there is no care coordinator for each pregnancy as it was recommended in KCE report 232 on postnatal care.¹³ In addition, the only available information that can be shared among practitioners is reported in the mother booklet. This booklet allows a rapid overview of the mother's parameters but does not facilitate communication between professionals involved in ANC or does not give access to imaging or lab tests. Supporting tools for secured communication channels are proposed by eHealth but they are not well known and underused by both healthcare professionals and patients. In addition, these tools are not specifically designed for ANC. Therefore, so far parents still remain the key channel for information transfer between healthcare professionals.

This lack of coordination could be one of the reasons explaining the low adherence to the recommended number of antenatal consultations (KCE guideline)⁵ as shown by our analysis of AIM/IMA data.

Lack of cooperation

The lack of cooperation stems partially from the financing system based on the nomenclature. Healthcare professionals reported a variability in reimbursement rules which creates a feeling of imbalance in favour of midwives in particular (e.g. variation in the reimbursement level of a consultation, variation in the number of reimbursed sessions, variation in the access to reimbursement for group sessions). Nevertheless, for the clinical follow-up of pregnancy, rules differ from one healthcare practitioner to another (e.g. a minimal duration is imposed to all sessions delivered by midwives (30 to 60 minutes) while this is not the case for medical doctors (gynaecologists or GPs)). However, the feeling of imbalance leads to competition instead of collaboration. The lack of a clear referral system between different healthcare professionals contributes to confusion regarding the respective professional responsibilities.

More attention has to be given to vulnerable pregnant women

Among professionals, there is a real concern regarding the detection of vulnerable situations and the management of such situations. They highlighted the need to be supported by specific networks for psychosocial vulnerabilities. The analysis of care consumption during pregnancy also showed that women entitled to an increased reimbursement scheme had a higher risk of antenatal consultation underuse.

Parents need more support and information

Not all parents did find their way in the healthcare system and in the administrative maze. They often mixed up clinical follow-up and BPPE and they did not make the difference between the recommended interventions and the 'nice to have' interventions. They were also often overwhelmed by administrative tasks (mainly to prepare the postpartum period) without receiving customized support. Support can take several forms (e.g. coaching, etc.) to empower the pregnant woman, to enhance self-efficacy or resilience or to cope with previous traumatic birth, etc.

Pregnancy period, as well as the period in which a couple tries to conceive, trigger a quest for information. During the preconception period and pregnancy, parents experienced difficulties to find answers to their worries and questions from healthcare professionals or from trusted information sources.



7.3 Concrete proposals for integrated ANC

7.3.1 Main achievement of ANC

In Belgium, although there is currently no official text formalizing the vision of optimal maternity care, all existing initiatives allow to formulate a vision as follows: all women and their babies should have access to safe and high-quality care, provided by professionals in a setting adapted to their needs. In addition, women and families should be placed at the centre of services provided and treated with due attention to their needs and demands, respecting their beliefs and preferences and with empathy. Finally, parents should be supported before, during and after pregnancy to enable them to give their child the best possible start in life.

To achieve this vision, it is important to maintain the richness of the current system, while addressing its weaknesses and gaps. For the part of the care devoted to the prenatal period, the general principle presented in Box 2 applies.

Box 2 – Core principle of ANC for Belgium

ANC should include *universal*, and *integrated* healthcare services so as to ensure optimal health and safety for all pregnant women throughout Belgium. ANC should be tailored in size and intensity according the pregnant women needs (proportionate universalism⁴⁶). It should ensure seamless transitions from pre-conception to postpartum, from one health professional to another, and from primary to specialized care. This should be supported by an appropriate funding system.

The objective is therefore to ensure comprehensive, structured and coordinated care for all pregnant women, regardless of the level of risk of pregnancy, and to develop special efforts to reach vulnerable women who are at greater risk of not receiving follow-up or of receiving it too late.

This system is therefore based on essential elements:

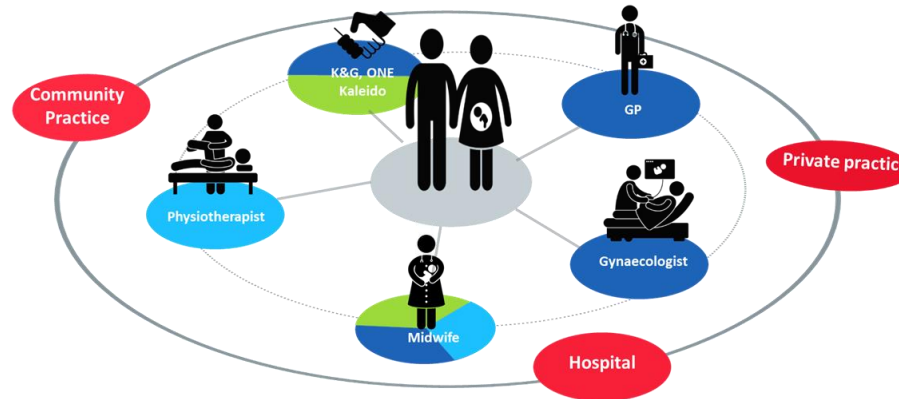
1. the provision of a complete prenatal care programme for each pregnant woman,
2. the activation of a multidisciplinary mesh:
 - a) its composition (actors)
 - b) its coordination
 - c) its polymorphism
3. the implementation of a care plan.

Figure 8 illustrates this required evolution for prenatal care in Belgium.

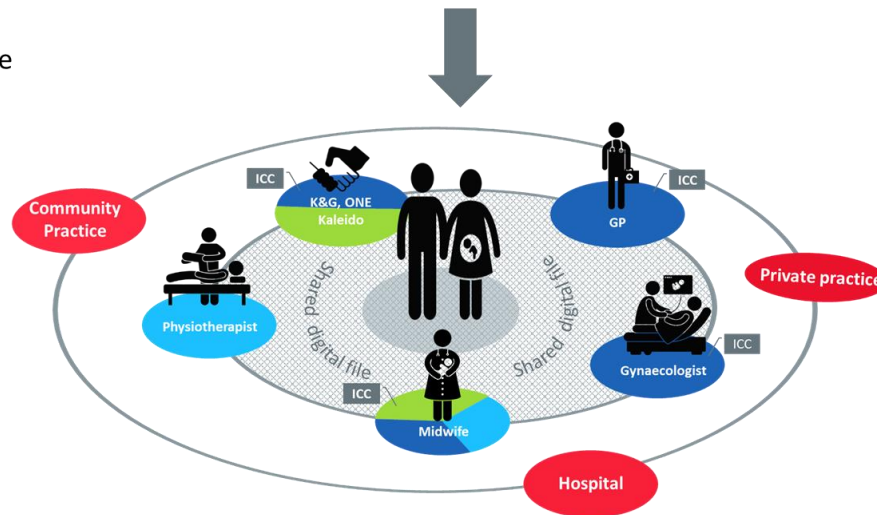


Figure 8 – Current organisation of the Belgian ANC system and proposal for the future

Current ANC system



ANC system for the future



■ Clinical follow-up
 ■ Birth preparation
 ■ Parenthood education
 ■ Individual Counselling Consultation
 Icons created by Noun project®



7.3.2 Universal ANC

Ensure that every woman throughout the country has access to comprehensive ANC.

The ideal ANC ensures universal and proportional care. This means that every woman can access the right level of care, the right professional, at the right time and in the right place, based on her specific needs. A corollary objective is to ensure comprehensive, structured and coordinated care for all pregnant women, regardless of their level of risk; in particular, special efforts must be made to reach vulnerable women who are at greater risk of not receiving any follow-up or starting their follow-up too late. Although absence of clinical follow-up is very uncommon in Belgium (less than 1% of the pregnant women), 4% of insured pregnant women still did not reach the recommended number of 7 ANC consultations and 3% had no follow-up during the first half of their pregnancy. Because these proportions relate only to pregnant women covered by the national social security, these figures are probably underestimated.

During pregnancy follow-up, specific attention should be paid to partners of pregnant women. Both future parents need to be considered as key actors, involved in the smooth progression of pregnancy, labour and delivery, and postnatal care. This requires putting the future parents at the centre of decision-making, to ensure the parents-to-be freedom of choice, respect for their decisions, needs and concerns but also confidence in all healthcare providers with whom they will have a contact.

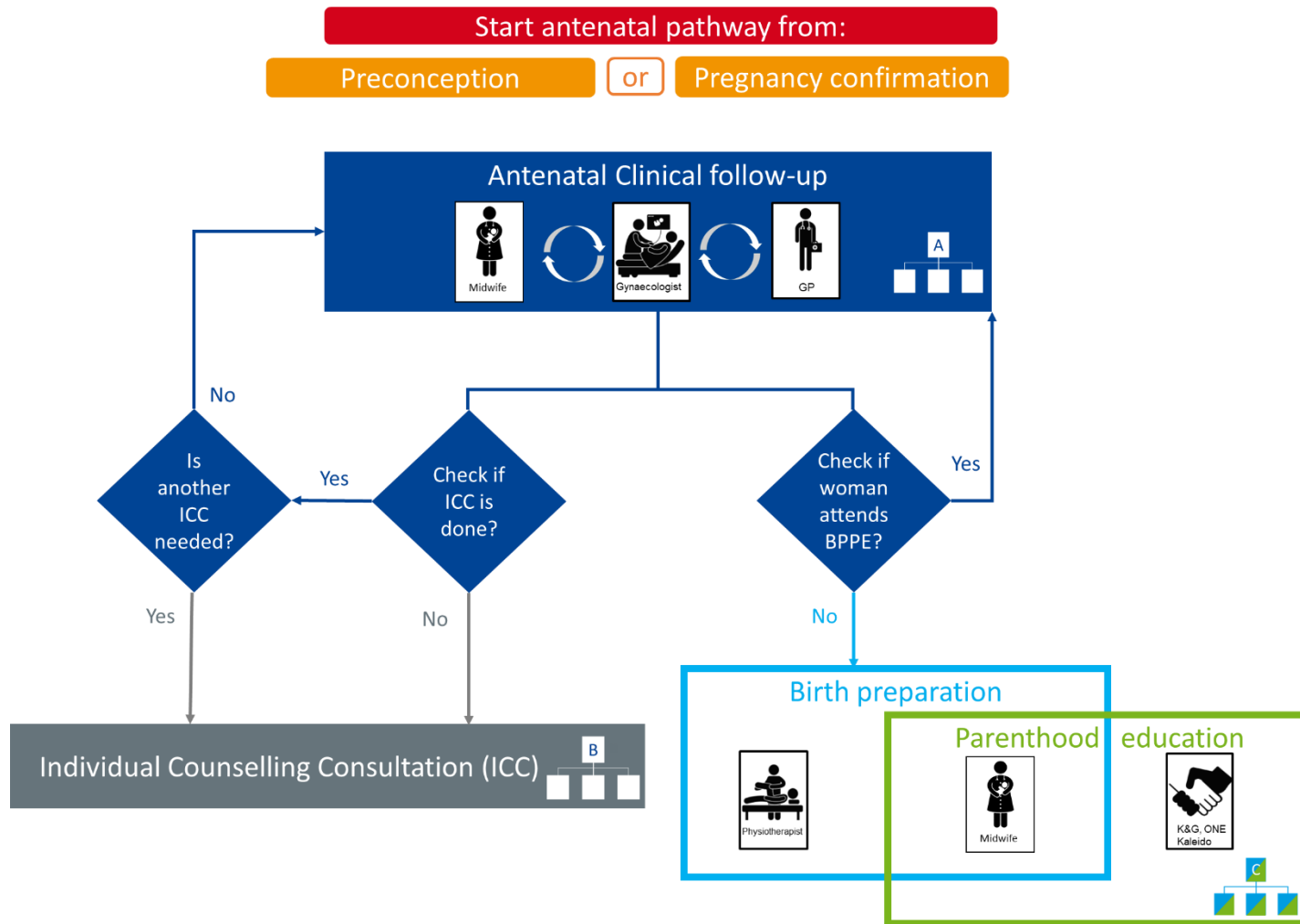
Action point: Whatever the level of pregnancy risk, propose comprehensive ANC to every woman, organised according to the pathway described below. Comprehensive ANC includes clinical follow-up, individual counselling consultations (ICC), and birth preparation and parenthood education (BPPE).

The purpose of the ANC pathway presented in Figure 9 is to offer all pregnant women a standard care pathway whatever their level of pregnancy risk. Additional interventions should be considered in function of psychosocial vulnerabilities or medical risks. This pathway is designed for all professionals involved in ANC (i.e. gynaecologists, midwives, GPs, physiotherapists, psychologists and social workers) working in hospitals or outpatient settings.

The pathway should start as soon as possible, ideally during the preconception period when the wish to have a child or intention to conceive is expressed or immediately after pregnancy confirmation and preferably before the 14th week. Preconception (and interconception) care fosters healthy pregnancies and allows a smooth transition to pregnancy through the provision of evidence-based information regarding lifestyles and health behaviours (e.g. drug or alcohol use), and the identification of medical, psychological and social risks. Medically assisted procreation makes the preconception period more challenging and requires additional support during a longer time period.



Figure 9 – Proposal for a pathway for antenatal care in Belgium



Icons created by Noun project®



The pathway encompasses three components: Clinical follow-up, Individual Counselling Consultation (ICC), and Birth Preparation and Parenthood Education (BPPE). Besides the clinical follow-up (Figure 10), healthcare professionals collaborate to implement the two other components namely ICC (Figure 11) and BPPE (Figure 12). Depending on the pregnant woman's preferred care model, gynaecologists, midwives, GPs, physiotherapists and workers of K&G, ONE and Kaleido will be involved. All steps need to be adequately coordinated between involved professionals. The training of these professionals should enable them to acquire the necessary skills to ensure the clinical follow-up in different settings (including ambulatory settings), the ICC and the BPPE interventions based on the last available evidence. Training may be reinforced by interprofessional education to enhance multidisciplinary approach.

Clinical follow-up consultations

Action point: Offer all pregnant women a clinical follow-up according to the evidence-based guidelines. The clinical follow-up includes an ongoing risk assessment and a referral to healthcare professionals specifically trained for ICC and BPPE.

Clinical follow-up aims to ensure the best health outcomes for the pregnant woman and the unborn child. To reach this goal, the adherence to the clinical guideline has to be strengthened and a continuous monitoring of medical risks has to be encouraged, leading to referrals when appropriate. Without risks identified before or during the pregnancy (low-risk pregnancy), the number of recommended ANC consultations for clinical follow-up is 10 for primiparae and 7 for multiparae. This number of consultations encompasses all clinical follow-up consultations whoever the healthcare professional who provided them. The consultations for clinical follow-up are also an opportunity to evaluate if ICC consultations took place and BPPE sessions are planned and received.

Figure 10 displays all interventions recommended for clinical assessment and screening tests⁵ by trimester (part A of the ANC pathway). Moreover, the ongoing risk assessment throughout pregnancy aims to consider referral and back referral when appropriate. According to the risk assessment results, additional pathways should be considered. These interventions are completed by the following elements:

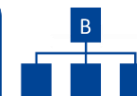
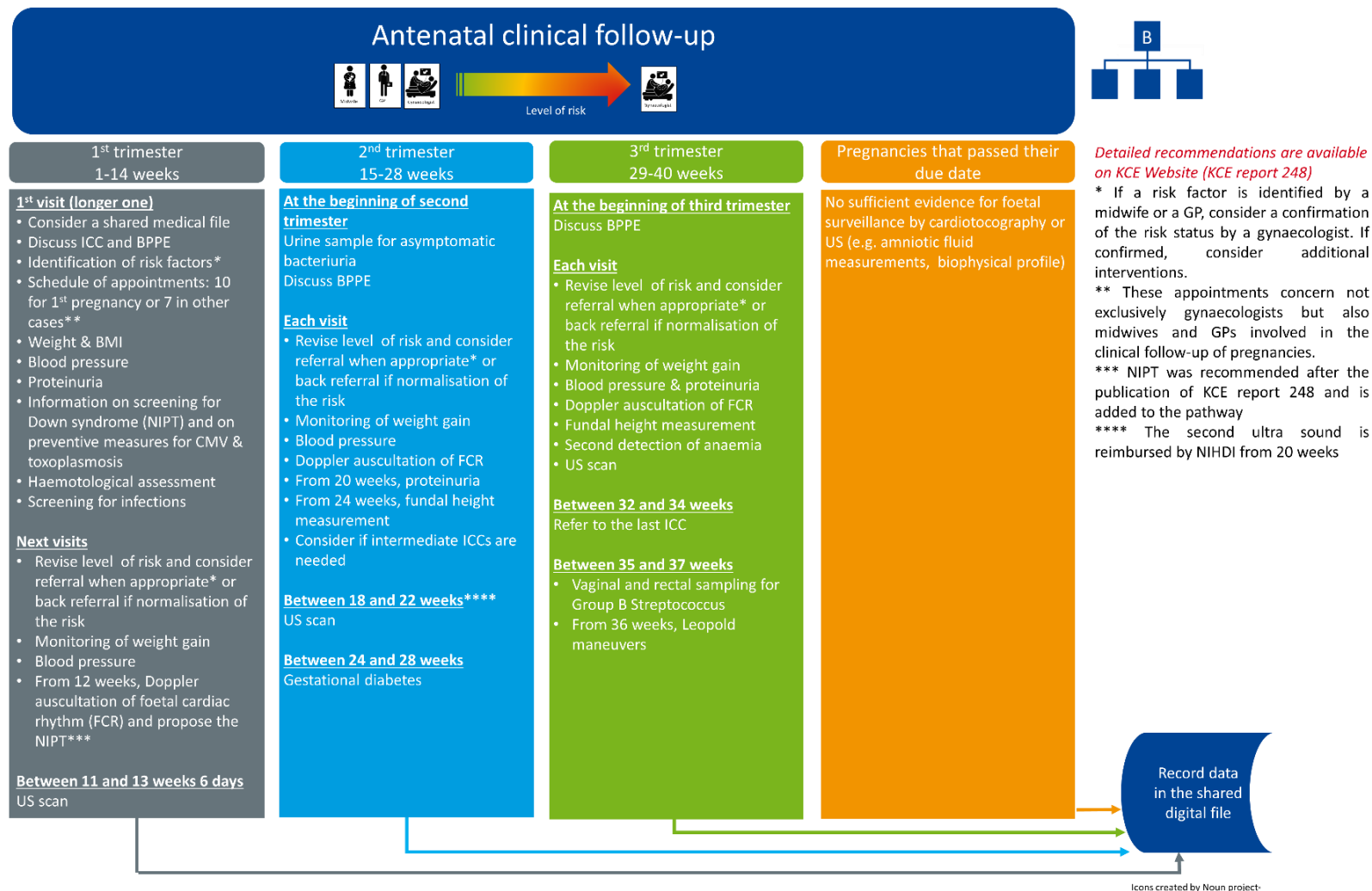
- During the first trimester, the first ICC should be advised to all pregnant women.
- At the beginning of each trimester the BPPE should be discussed.
- During the second trimester, healthcare professionals should consider whether a new ICC is needed to cope with pre-existing or emergent psychosocial vulnerabilities including lifestyle issues (e.g. addictions, weight management).
- During the third trimester, the last ICC should be advised to all pregnant women between 32nd and 35th week of pregnancy.

All data should be recorded in the shared digital file.

Different ANC models coexist and scientific literature confirmed that midwife-led continuity care models and physician-led models of care were equally safe for healthy women with uncomplicated pregnancies. In Belgium, the clinical follow-up can be provided by gynaecologists, midwives or GPs at hospital, in private practices or in community practices according to the availability of services and women's preferences. Pregnant women are free to opt for consultations exclusively provided by a gynaecologist or to prefer an alternation of consultations provided by a gynaecologist and by a midwife (including three consultations with a gynaecologist to perform ultrasound scans). Today pregnancy follow-up exclusively performed by a GP is uncommon.



Figure 10 – Pathway for antenatal care in Belgium – clinical follow-up, referral system and linkage with other parts of the pathway





Individual counselling consultations (ICC)

Action point: Offer all pregnant women at least 2 individual counselling consultations (ICCs). However, the number of ICCs should be tailored to the specific needs of each pregnant woman.

The first ICC aims:

1. to enable future parents to make informed decisions regarding the ANC professional(s) and trajectory
2. to provide evidence-based information regarding pregnancy
3. to assess the potential psychosocial vulnerabilities and when appropriate, to set up a larger network (see below)
4. to inform the pregnant woman that she has to assign a care coordinator
5. to set up the Care Plan
6. to create (or update) the shared digital file

The last ICC aims to finalise the Care Plan before delivery and to organise the postpartum.

The ICCs are not intended to replace consultations for the clinical follow-up of the pregnancy.

The ICC aims to answer the parents' information needs and to adequately prepare the postpartum in the context of short maternity stay after an uncomplicated delivery. The ICC is a window of opportunity for health promotion by providing tailored lifestyle guidance or coaching when appropriate. This could also allow an efficient use of resources by avoiding under- and overconsumption of clinical follow-up consultations:

- As reported in KCE report 232¹³, the shortening of hospital stay after an uncomplicated delivery creates a need to prepare the postpartum during the antenatal period. The last ICC should fulfil this specific need.

- Under consumption is observed at least in 4% of the insured low-risk pregnant women in Belgium. The ICC should help to identify the potential under-users and support them to engage themselves in an adequate clinical follow-up. When appropriate, an enlarged network will be set-up.
- Overconsumption is observed in a majority of pregnant women. Additional consultations may be justified in specific situations such as post-term pregnancies, multiple pregnancies, medical risks (e.g. placenta praevia, high blood pressure). These situations cannot not be identified in the AIM/IMA database and may partially explain the observed overconsumption. In other cases the overconsumption should be avoided by informing parents and by enhancing professional collaboration. On the one hand, ICC should empower the future parents by evidence-based information allowing to avoid unnecessary consultations (e.g. information on warning signs, symptoms, and medicine use during the pregnancy). On the other hand, ICC should avoid the repetition of procedures due to a lack of information share (what exam has already been carried out and what are the results). Finally, dealing with the psychosocial issues can lead to additional consultations currently often performed in the context of the clinical follow-up which is not necessarily ideal. By setting-up an extended network around the pregnant women when appropriate, additional clinical consultations could be avoided.

Figure 9 illustrates the part B of the pathway where activities of the ICC are detailed.

The first ICC

The first ICC should ideally be organised at the latest before the 14th week of pregnancy; the partner is encouraged to participate. This first consultation aims to identify information needs, demands regarding birth preparation and parenthood education interventions, unhealthy behaviours, screen for psychosocial vulnerabilities, and provide all required information regarding locally available healthcare facilities, the role of professionals, local antenatal and parenthood classes, in order to set up the Care Plan.



The first ICC is a long consultation to reach four main goals:

- Enabling future parents to make informed decisions regarding the ANC professional(s) and trajectory

Parents want to be informed about all care options to express their own preferences and make the choices that suit best their preferences and the pregnancy's risk level as assessed during the clinical follow-up (see part A of the pathway). Therefore, future parents should get objective and evidence-based information, covering all available ANC models, pros and cons, as well as financial consequences of each option in function of their own situation. Information regarding contracted and non-contracted healthcare professionals and local availability of services is part of the information package.

- Providing evidence-based information

Parents described pregnancy as a constant quest for information. Ideally, the first ICC will anticipate this information need, not only by providing evidence regarding risk prevention, but also by orienting future parents to the reliable sources of information dedicated to pregnancy and corollary issues (including foetus development, transformation of the pregnant woman's body, administrative issues, parenthood transition, lifestyle behaviours etc.). A lot of sources already provide updated generalised and contextualised information to answer many questions (organisations for child welfare, sickness funds, hospitals, etc.). A plan detailing information transfer has to be formalised in a reference document. Moreover, the ICC is the ideal time to assess the range of needs to which the BPPE can respond. The availability of BPPE in the neighbourhood of the pregnant woman's residence should be discussed. The objectives of the BPPE should be explained to allow the identification of future parents' preferences (e.g. individual or group sessions, choice of a healthcare professional or a combination of healthcare professionals).

- Performing a psychosocial anamnesis

Referral to appropriate services and actions taken will be recorded in the shared digital file.

- Setting-up (or updating) a shared digital file with the patient's consent

A shared digital file needs to be created, if not yet available.

- Informing pregnant women about the identification of a care coordinator

The choice of the care coordinator will be documented in the shared digital file. The financing system of ANC should take into account such coordination tasks.

- Preparing a Care Plan

The purpose is to provide a model of Care Plan to guide future parents through the period from preconception to postpartum. The information necessary to complete the Care Plan is provided at the first ICC meeting. A Care Plan is a living document that parents take ownership of.

Additional intermediate ICCs

Additional ICCs could be planned when vulnerabilities were detected or occurred between the first and the last scheduled ICC. Additional intermediate ICCs aim:

- To perform or implement specific interventions that were proposed during the first ICC but did not take place yet.
- To repeat psychosocial vulnerability assessment for borderline situations or if the pregnant woman's situation is susceptible to evolve during the antenatal period.
- To set up (additional) supportive measures (including nutrition and diet)
- To monitor the success of suggested supportive measures and to reassess their adequacy, their sufficiency and their effectiveness to resolve the identified problems.

The intermediate ICCs may be integrated in or coupled with BPPE.



The last ICC

The last ICC should be scheduled between the 32nd and 35th week of pregnancy and could be integrated in the preadmission appointment when delivery is planned at hospital.

While expectations and preferences of the pregnant woman regarding labour, delivery and birth place (including the availability of specific infrastructure and material e.g. a tub allowing delivery in water) were already discussed during the previous ICC and recorded in the shared digital file within the framework of the Care Plan, they sometimes evolve during the pregnancy and need to be discussed and revised during the last ICC. According to the pregnant woman's preferences, the Care Plan can also include additional elements (e.g. a birth plan). The last ICC is the ideal moment to discuss (and eventually revise) the available options and to record final decisions in the shared digital file.

In addition, healthcare professionals who will be contacted for home visits during the first days after discharge have to be designated. Hospital stay should be discussed and all information regarding administrative procedures, costs, hospital stay duration and criteria for discharge needs to be provided. All decisions are recorded in the shared digital file.

The international comparison indicates that the components of ICC (with variants) are part of the prenatal pathway in all countries under study.

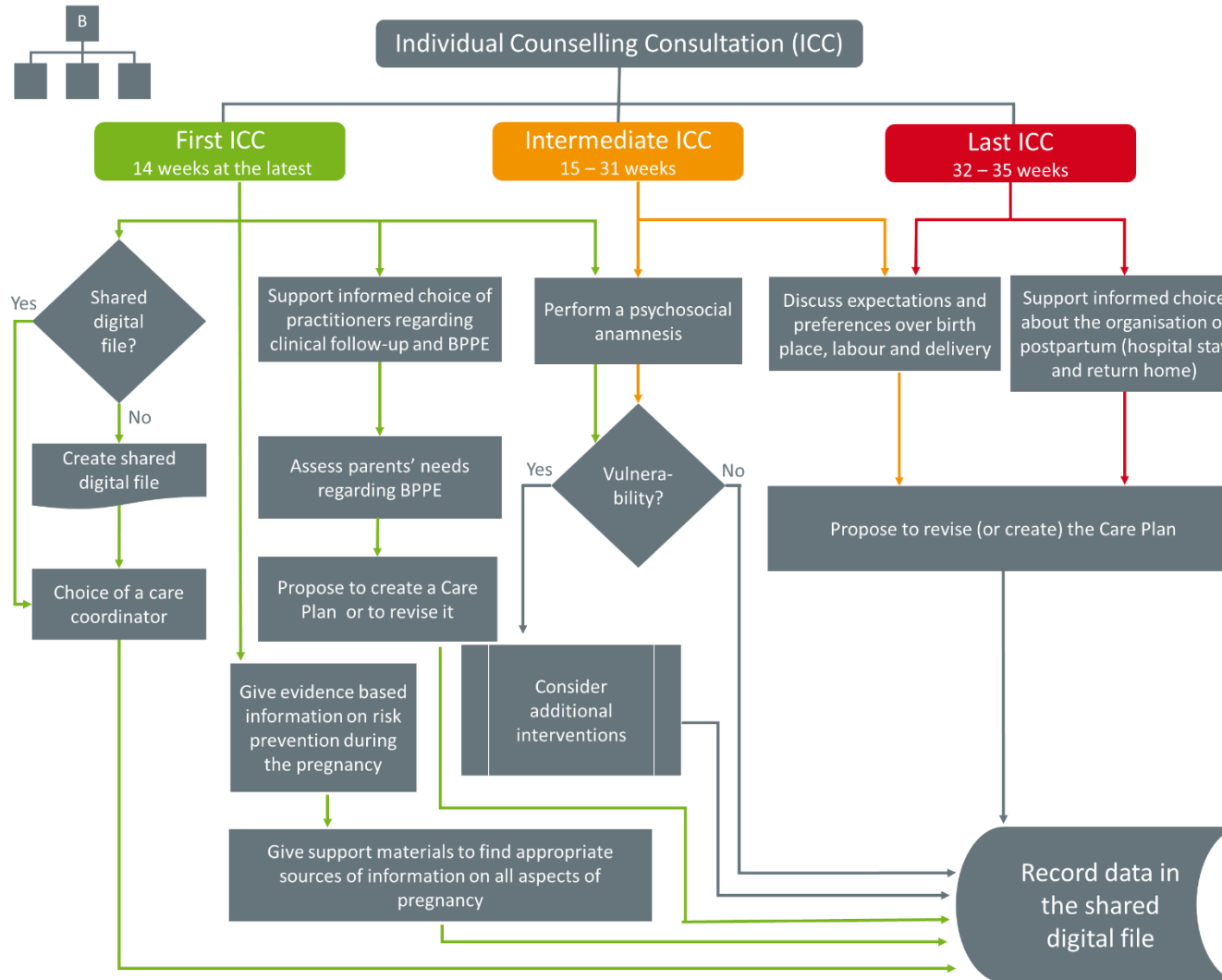
However, the literature reviewed did not specify the most efficient organisational arrangements for carrying out the ICCs nor the best practices adopted elsewhere; consequently, it is impossible to recommend one organisational model above another. The organisational models may differ according to the following elements:

- The professional(s) performing ICC and their role in the multidisciplinary care network;
- The integration of ICC within clinical follow-up or BPPE pathway ;
- The tools used to support patient's decision, to perform the psychosocial anamnesis, to assess the BPPE needs, to provide neutral information on the different care models available for antenatal care in Belgium, to provide evidence-based information on pregnancy and their sources, to organise the postnatal period at hospital and at home and to develop a Care Plan.

In the current ANC system in Belgium, some elements of ICC are already provided in a fragmented way, or absent. Health professionals in the field should develop their own way of organising and adapting individual counselling consultations (e.g. to prevent chronicity), taking into account the actors involved in ANC and their local context. These initiatives should be evaluated and adapted accordingly, in particular missing elements should be added to reach the objectives pursued by the ICC.



Figure 11 – Pathway for antenatal care in Belgium – Individual counselling consultation





Birth preparation and parenthood education sessions (BPPE)

Action point: Offer BPPE sessions to all pregnant women (and their partner) according to their specific needs to enable them to take informed decisions regarding pregnancy, labour, delivery and postpartum and to support future parents in the transition to parenthood. All interventions performed during BPPE sessions should be recorded in the shared digital file to avoid duplicate interventions and conflicting information.

The purpose of BPPE is to inform the pregnant woman and her partner enabling them to take decisions regarding pregnancy, labour, delivery and postpartum, to maximize positive birth and postpartum experiences and to support (and to coach) future parents in the transition to parenthood. Adequate preparation also aims to support them in formulating realistic expectations regarding antenatal care and childbirth according to the individual situation (availability of desired services, level of risk for mother and child, etc.). To this aim, numerous education and information programs already exist, and take several forms such as individual and group antenatal classes delivered either by midwives or by physiotherapists (individual sessions only).

Figure 12 details the organisation of BPPE reported as part C of the antenatal pathway. As previously mentioned, BPPE could be discussed at each trimester with a healthcare professional implicated in the clinical follow-up. Therefore, BPPE could start at any time during pregnancy. In the proposed pathway, a BPPE program includes a number of sessions tailored to pregnant women's needs assessed during the first ICC (see part B of the pathway). In addition, the content of BPPE activities could be adapted according to parity and the most recent evidence.

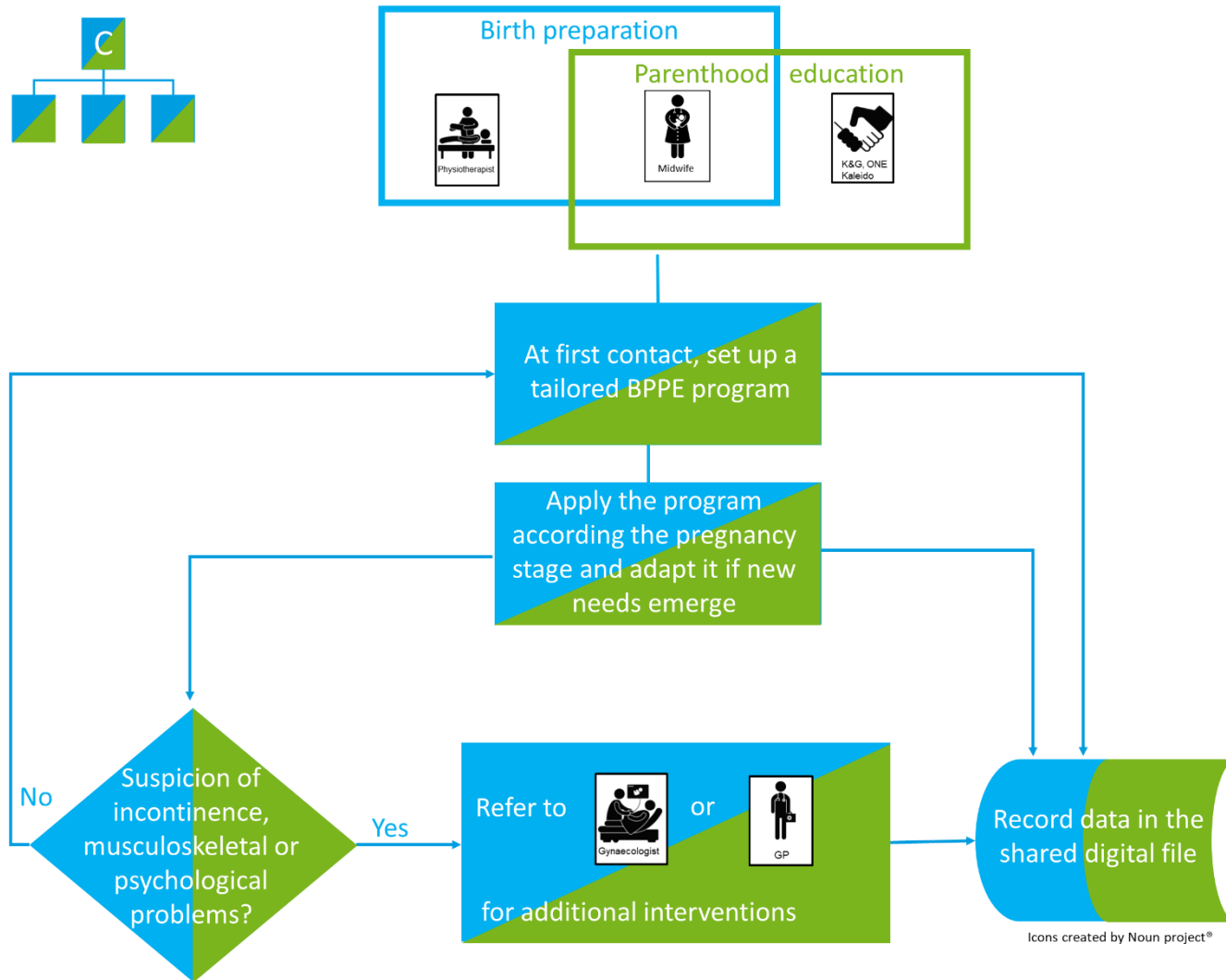
BPPE sessions can be provided by skilled healthcare professionals: midwives, physiotherapists or both according to women's preferences and needs. Their competences in BPPE should be reported in their portfolio. For some parenthood education activities, adequately trained professionals (including midwives, nurses, medico-social workers) of ONE, K&G and Kaleido can be involved.

To support professionals in the building of a BPPE program, a non-exhaustive list of BPPE activities for each trimester was provided in Table 3. The program should be recorded in the shared digital file to avoid duplicate interventions and conflicting information. BPPE activities regarding postpartum are focused on information. The organisational issues of the postpartum are managed during the ICCs.

If musculoskeletal problems, or incontinence or psychological problems are suspected during a BPPE session, referral to a GP or gynaecologist has to be considered; this is particularly crucial to foresee a referral towards healthcare professionals who require a medical prescription.



Figure 12 – Pathway for antenatal care in Belgium – Birth preparation and Parenthood Education





7.3.3 Integrated ANC

Ensure seamless transitions from preconception to postpartum, from one healthcare professional to another and from primary to specialised care to achieve integrated ANC.

Composition of a multidisciplinary care network

Action point: Activate a multidisciplinary care network around each pregnant woman according to her specific profile and needs. This network will ensure the coordination of care between and during the preconception/interconception, antenatal and postpartum care periods.

Integrate gynaecologists, primary care providers (midwives and GPs), physiotherapists, offices for children of the federated entities (K&G, ONE and Kaleido) as the core elements in a multidisciplinary care network.

To ensure integrated care, professionals should be organised as networks around the pregnant woman, her partner and their (unborn) child. The multidisciplinary care network should be composed of all actors and organisations required to reach the best achievable quality of care during the whole process from preconception to postpartum. Needs and wishes of the pregnant woman (and her partner) have to be taken into account. The multidisciplinary care network may be composed of a restricted number of actors and be enlarged according to each individual situation.

To maintain a sustainable and efficient ANC, the multidisciplinary care network should be organised and coordinated in such a way that all care, including diagnostic and therapeutic procedures, prevention, information and support as well as social interventions are complementary and not repetitive, whoever the healthcare initiator or provider is.

The WHO considers interprofessional education as a tool to enhance collaborative practice and to tackle fragmentation of care. Interprofessional education consists to teach to two or more professions about, from and with each other to enable effective collaboration and improve health outcomes.

Such a collaborative practice-ready health workforce may support the development of the proposed multidisciplinary care network.⁴⁷

Coordination of a multidisciplinary care network

Action point: Identify a care coordinator for each pregnant woman. The choice of this coordinator will be guided by pregnant women's preferences and needs as well as by professionals' availability.

As recommended in the KCE report 232¹³, a care coordinator should be a permanent contact point and reference person for (future) parents during pregnancy, birth and postnatal period. The role could be fulfilled by midwives, gynaecologists or general practitioners active in ANC. The role of the care coordinator is to ensure that all actions to be taken to resolve identified problems were adequately implemented. The care coordinator's role is flexible and is stretched or reduced in function of parents' needs and preferences. The care coordinator's role might be especially valuable for vulnerable families.

Size of a multidisciplinary care network

Action point: Tailor multidisciplinary care networks to individual situations by integrating the most adequate professionals (e.g. social workers, mental healthcare professionals, medical specialists...). The care coordinator is responsible for the tailoring of the multidisciplinary care networks.

The core of the network is composed of gynaecologists, primary care providers (midwives and GPs), physiotherapists, workers of K&G, ONE and Kaleido but other actors may be involved as well (e.g. CPAS/OCMW, hospital social workers, other actors in the field of vulnerable pregnant women's protection, mental healthcare professionals (psychologists or psychiatrists), paediatricians or other medical specialists in function of the health disorders diagnosed before/during the pregnancy). Because of their local anchorage, K&G, ONE and Kaleido may play a central role for psychosocial issues in this larger network.



The multidisciplinary care network can be developed in a transversal way, through a range of settings such as private practices, hospitals, community practices or a combination of several settings. The availability of such networks should cover the whole Belgian territory including the most geographically isolated parts of the country to ensure parents' free choice of ANC provider(s) (Patient right law)¹⁴, the continuity of care (law of 22 April 2019)²⁹, the proximity and accessibility of care to all women.

Detect potential vulnerabilities in pregnant women by appropriate and validated tools used by trained professionals. When vulnerability is detected, set-up a larger specific network to manage the identified vulnerabilities. CenteringPregnancy or group antenatal care is recognized to be particularly suitable for vulnerable women. It is offered in Brussels (pilot project 'Born in Brussels') for vulnerable pregnant women and in Sint-Niklaas (*de Kiem*) for all pregnant women including the most vulnerable ones. The 'Born in Brussels' project is also testing the validity and reliability of a screening tool to identify vulnerabilities early on. The feasibility and transferability of CenteringPregnancy-like approach across the country must be tested. Other types of initiatives targeting vulnerable women are also implemented (see Figure 5) and take several forms (e.g. free antenatal consultations, financial support, social support, shelter, etc.).

Implementation of a care plan

Action point: For each pregnant woman, set-up a Care Plan including antenatal and postnatal aspects.

ANC should promote the conscious informed choices and empowerment of parents. ANC should facilitate parents to make their own informed choices based on their own values and to choose their own care pathway.

An informed choice or decision is based on relevant, good quality information, and the resulting choice reflects the decision-maker's values.⁴⁸ To obtain an informed decision, patients have to receive research-based information on two or more options; all the available information about the health alternatives has to be weighed up and used to inform the final decision; finally, the resulting choice should be consistent with the individual's values.

In order to formalise the wishes and needs of a pregnant woman and her partner, an individual Care Plan needs to be drawn up, according to the principles of joint decision-making. This sets out all key aspects related to the follow-up and care for a future mother from the moment of pregnancy confirmation up to the postpartum period. It invites future parents to reflect on labour, delivery and the postpartum and to ask questions regarding all steps in ANC, labour and delivery, as well as all available options. While a Care Plan identifies women's preferences and expectations, medical circumstances or facility constraints may induce deviations from the initial plan. In the context of short hospital stays after delivery, the follow-up at home should be planned and scheduled during the last weeks of pregnancy. In particular, healthcare practitioners and supportive services need to be contacted to formally organise the follow-up after discharge, including the schedule of postpartum consultations with a midwife and a paediatrician. When appropriate, visits of medico-social workers and/or psychologists are also to be planned. This information is an integral part of the Care Plan and is ideally recorded in a shared (digital) file.

Action point: Create a shared digital file for each pregnant woman. Include ANC in the national eHealth action plan to help a rapid implementation of a shared digital file.

The shared digital file is a key element of ANC provision and should guarantee the continuity of care, avoid duplication of interventions, and facilitate information transfer between professionals collaborating in a multidisciplinary network, especially in case referral is required. Moreover, it may allow to evaluate the adequacy of interventions and to disentangle the professionals' responsibilities when a legal action is taken after a complaint.



The content of the file and writing–reading rights should follow the requirements of the law of 22 April 2019.²⁹ The shared record could be integrated in secured data exchange platforms¹ and in the project 4.1 and 5.1 of the eHealth action plan 2019-2021 regarding multidisciplinary information exchange. The shared record could facilitate data collection in eBirth. Collaboration initiatives between eHealth platforms, K&G and ONE to develop digital files has to be further supported to avoid that parents remain the main channel for information transfer between healthcare professionals. This data integration should allow the extraction of data for completion of the neonate's medical file, for epidemiological research purposes (trend analyses performed by CEpiP and SPE) and for quality of care assessments.

The shared file should include at least the following subfolders:

- General identity information
- Clinical follow-up data with at least the information mentioned in the mother booklet (K&G / ONE)
- Psychosocial assessment and supportive initiatives
- Checklist of information regarding clinical follow-up models, birth preparation, parenthood education, appropriate information sources
- Plan of BPPE interventions, scheduled and received by the parents
- Expectations and preferences of the pregnant woman (see action point 2.2.b last individual counselling consultation (ICC))
- Choice of maternity service and preparation of the postpartum (see action point 2.2.b last ICC)
- A subfolder that can only be accessed by the healthcare professionals to gather working notes and allowing the transfer of sensitive information to other professionals

Referral between professionals and levels of care

Action point: Create a clear referral system between professionals to ensure safe transitions between professionals and from primary to specialised care with the subsidiarity principle in mind. For this purpose, a list of obstetrical red flags leading to the referral from primary care to specialised care during the pregnancy is required.

Integrated care aims to provide a continuum of birth care that crosses the boundaries of public health, primary, secondary, and tertiary care. A seamless transition from one level to another should be supported by a clear referral system, specifying conditions for referral and for back referral throughout pregnancy and the postpartum. Whatever the level of care, the safety of the (pregnant) woman and her baby is the overriding principle to be respected.

When a medical or obstetrical problem occurs or may potentially cause harmful effects on the health outcomes for the mother or her child, the pregnant woman has to be addressed or referred to a healthcare practitioner whose competence and experience are recognised to adequately manage the problem (Quality of the healthcare practice Law).²⁹ The competences of a healthcare professional are those reported in his/her personal portfolio. This is particularly relevant for primary healthcare practitioners (e.g. midwives, physiotherapists and GPs) who refer patients at risk to a higher care level. When a particular risk is identified, these practitioners will refer the pregnant woman to a gynaecologist who will provide care at least until the risk is reversed or the prognosis is favourable. The timely referral to specialised structures, with skilled staff and technical equipment, is mandatory in critical situations. The identification of potential risks needs a continuous medical risk assessment throughout the pregnancy. To this end, a risk classification is commonly adopted in foreign countries, considering at least three levels of risks either for the pregnant woman or for the unborn baby: normal or low-risk, medium-risk and high-risk.

¹ Vitalink, Réseau de Santé Bruxellois, Réseau de Santé Wallon



This classification is based on situations at risk including medical or obstetrical risk factors and non-medical factors (e.g. low income, lack of social support, addictions, and victims of violence or abuse, etc.). In some countries, this classification is used as a basis for the referral of pregnant women. To enable an adequate referral in Belgium, a list of pre-existing, pregnancy and perinatal related disorders (red flags) should be developed based on the most recent available research evidence adapted to the Belgian context. When several risk situations are associated, the cumulative level of risk must be considered on a case-by-case basis. For each of them, the corresponding level of risk leads to specify the follow-up required and to identify an appropriate place of delivery (obstetric units, possibly supplemented by a neonatology and neonatal resuscitation unit).

Moreover, the continuity of care(r), the proximity, the accessibility of care and privacy should be ensured. Communication and information transfer are prerequisite for an effective referral and back referral. The shared digital file is a relevant tool for that purpose.

Enhance multidisciplinary

Action point: Support research to revise the current remuneration system in order to set up an ad hoc financing system enhancing the complementarity and the multidisciplinary of professionals involved in ANC networks and preventing duplication of interventions.

In Belgium, most healthcare professionals involved in ANC are self-employed and are paid on a fee-for-service basis. Patients are partly reimbursed afterwards. In the context of ANC, official fees were negotiated for the various healthcare providers in function of the consultation purpose. Concretely, specific fees have been negotiated for gynaecologists, midwives, general practitioners and physiotherapists. Moreover, fees differ depending on whether the consultation is for clinical pregnancy follow-up or for birth preparation. For the sake of consistency, the nomenclature codes have been harmonised for specific professional groups (e. g. for all medical specialists regardless of their discipline) or for specific care (e. g. pregnancy and childbirth care). However, this harmonisation effort led to unexpected practices.

For example, fees and reimbursement rates for clinical follow-up of the pregnancy performed by midwives are higher than fees and reimbursement rates available to gynaecologists. In practice, rather than obtaining alternating midwife consultations and gynaecologist consultations in a complementary perspective to achieve the recommended number of antenatal consultations, we observe a cumulative consumption of consultations provided by midwives and gynaecologists beyond the recommended number of antenatal consultations. While one would expect less pressure on the healthcare budget by more intensive use of first line practitioners, such an accumulation could increase the NIHDI expenditures budget for this type of services. Another example is illustrated by antenatal activities provided by physiotherapists; dedicated nomenclature codes are available for the 9 perinatal sessions reimbursed by the NIHDI. Nevertheless, more general physiotherapy codes are also frequently used during pregnancy, raising some concerns about their exact purpose (birth preparation or other indications).

An ad hoc financing of ANC should be set up to enhance the complementarity and the multidisciplinary of each ANC network installed around the pregnant woman and to prevent useless duplication of interventions. A bundle payment system, following the ANC pathway could be further investigated. Examples of such pathway funding approaches are adopted abroad for instance in England⁴³ and in the USA.⁴⁴ However, this question has not been explored in this report, and complementary analyses are needed to determine the financing system that best fits the previously mentioned objectives in the Belgian ANC context.



7.3.4 High quality antenatal care

Develop quality indicators to assess the quality and the effectiveness of the ANC pathway and to monitor hard and soft outcomes (e.g. satisfaction).

In Belgium, few indicators are currently available for assessing the quality of ANC. The KCE report on performance of Belgian health system²⁴ depicted two indicators focused on the antenatal period: guideline adherence to the recommended number of antenatal consultations in low-risk pregnancy and guideline adherence to recommended number of screening tests (i.e. hepatitis C test, toxoplasmosis test, cytomegalovirus tests). In addition, no systemic indicators or soft outcomes were developed. The interviewed professionals also highlighted that the absence of quality indicators hampered the evaluation of the quality of ANC, postnatal care, and birth preparation. Therefore, before any assessment, a list of outcomes to be evaluated should be established in collaboration with professional organisations and researchers. The list should gather both hard and soft outcomes. Based on this list, ad hoc indicators should be identified and measured. The identification of indicators could be based on foreign experiences (the Netherlands)⁴¹ and inspired by the short list of KPI's proposed by healthcare professionals during this study (see Table 6).

A continuous evaluation is needed to adjust the proposed pathway.

7.3.5 Recommendations

The previous chapters analysed the organisation of prenatal care in Belgium and displayed concrete proposals for a future ANC system. Based on this information we present the recommendations for universal and integrated prenatal care in the Synthesis of the study, which is published as a separate document on our website. It can be accessed from the same referral page as the current document.



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