Public Health England

Protecting and improving the nation's health

Measuring population reproductive health

Developing a new indicator set

Contents

Background

The women's reproductive health programme

Public Health England (PHE)'s reproductive health (RH) programme aims to drive improvement across 3 core ambitions underpinning good population RH. The ambitions have been developed through a review of the evidence and collaboration with stakeholders across the sector, captured in 3 documents published by PHE in 2018 (1). The 3 core ambitions for the PHE RH programme are centred around:

- fulfilment of reproductive choice
- reproductive wellbeing
- early identification of reproductive morbidity

Why a revised indicator set is needed for reproductive health

It is important to have indicators which measure the extent to which the goals of the reproductive health programme are being met. Current measurement of population RH and assessment of trends are mainly derived from under-18 conception rates, abortion rates, ePACT2 GP prescribing data, and the NHS Digital Sexual and Reproductive Health Activity Dataset (SHRAD). Whilst ePACT data can be used to track contraceptive prescribing in primary care settings, SRHAD is critical for understanding attendances at specialist sexual health services and associated activity, including contraception provisioning.

Access to contraception and incidence of abortion are both important measures of population RH but do not capture the breadth of issues, nor do they represent data from primary care and other sources where the majority of RH care activity takes place. In addition, there are relevant routine data already collected such as birth outcomes and health-related behaviour at booking appointments, which are available and relevant for RH but are only referenced as part of cervical screening or maternity data releases at present, limiting their scope.

A revised indicator set will enable the indicators that are available and relevant to holistic RH, to be brought into consideration and highlight where good measures do not exist and what the priorities for new indicator development should be. For the first time it will consider which user reported measures are best suited to measure RH and how these can be captured in future datasets.

This document outlines the methods used to identify a new comprehensive set of RH indicators as well as confirming the final indicator set that was agreed through a robust Delphi consensus process.

Key considerations for the RH Indicator set

At the outset of this process, it was important to consider different types of indicators, know the scope and strength of those that are already available for RH, and understand where there are gaps that make the argument for adaptation of existing indicators or development of new ones.

There are 2 broad types of indicator used for the measurement of population health:

1. Health Status indicators which measure the health and wellbeing of the population. For example, in RH, the proportion of pregnancies that are unplanned or the impact of heavy menstrual bleeding on wellbeing.
2. Health Determinant indicators which measure the factors that influence the health of the population. For example, in RH, the use of different methods of contraception, or access to reproductive health services.

The suitability of an indicator can be evaluated by assessment against the following criteria:

Validity
Is it measuring what it is meant to be measuring? For example, do rates of abortion give a good indication of the proportion of pregnancies that are unplanned in the population?

Reliability
Would repeated measures in the same population under the same circumstances produce the same results? For example, maternal mortality statistics are highly reliable.

Sensitivity
Is it responsive to changes in circumstance? For example, does contraception use change in response to changes in service access?

Specificity
How well do changes reflect the circumstance of interest? For example, is use of contraception simply a product of reduced access to services or are there other contributory factors?

Feasiblility
How easy is it to collect the data that underpins the indicator? For example, it is more difficult to reliably collect service user data than data collected as part of routine clinical reporting.

Relevance
Does it contribute to improved understanding of population RH? For example, to what degree does access to RH services reflect the 3 overarching aims of reproductive choice, wellbeing and early identification of reproductive morbidity?

Methodology

The indicators that will form the new RH indicator set were selected through a modified Delphi process based on the Bunch and others study (2) and COMET recommendations (3). The Delphi process was chosen as a low cost, robust, and transparent method to reach consensus across a wide-ranging expert group covering the breadth of reproductive health topic areas. The methodology also allowed the process of indicator selection to be iterative, minimising the risk of missing relevant indicators as well as enabling the identification of aspirational indicators currently unavailable but deemed critical for future monitoring of population reproductive health. Due to the COVID-19 pandemic the consensus meetings had to be held virtually.

Initially the 3 overarching aims were sub-divided into 10 domains (see Appendix 2) to cover detailed aspects of each ambition, ensuring all topics of interest would be represented in the final dataset. Next, a desktop exercise was conducted to identify all existing RH indicators with relevance to the 3 ambitions from the literature and from existing datasets already in use; for example, the Public Health Outcomes Framework (PHOF) and the Maternity Services Datasets (MSDS). This produced a preliminary candidate list of indicators with coverage across all 3 ambitions and sub-domains. A project steering group guided selection of the final list.

The list of 52 indicators was circulated to 3 panels: a service provider panel, a service design panel and a public panel. A total of 116 people agreed to participate after wide distribution of the invitation across RH networks. Participants were asked to review each indicator and rate its importance from 1 to 9 with 1 being the least and 9 the greatest importance. There were 2 rounds of questioning which took place between February and June 2020. After the first round, participants were also invited to suggest additional indicators which they felt were absent from the first list which resulted in an additional 21 indicators being included. In the second round, participants were asked to rate the expanded indicator list once more, after having seen the scores from each panel and also their own previous scores. The aim of the process was to have a final set of around 25 indicators with a minimum of 2 indicators across each domain and a balance of indicator ‘types’.

Response rates of panels to round 1 and round 2 of the questionnaire

Stakeholder group	Public panel	Service design panel	Service provision panel	Totals
Invited	28	54	34	116
Completed phase 1	23 (82%)	48 (89%)	29 (85%)	100 (86%)
Completed phase 2	17 (61%)	42 (78%)	18 (53%)	77 (66%)

After the 2 rounds of questioning, indicators were grouped according to the criteria of consensus ‘in’, consensus ‘maybe’ and consensus ‘out’. The indicators with a ‘maybe’ status were discussed by a consensus panel of 10 people. For the consensus panel, stakeholders were drawn from the steering group and each of the 3 original panels to ensure a balance of expertise and differing perspectives from across the system. During the meeting, a transparent process was facilitated so that indicators were first discussed in breakout groups and then representations made to the wider group as to whether they should be included or excluded according to a set of essential pre-specified principles.

Principles for final indicator selection were as follows:

1. Each domain must have a minimum of 2 indicators.
2. Indicators should be able to capture, monitor and evaluate progress of the population’s RH over time, as defined by PHE's 3 RH ambitions.
3. Indicators should be a combination of measures of service access, quality, need and health outcomes.
4. Indicators should be measurable using current data sources (aspirational indicators could be recorded for future data set development).
5. More than or equal to 70% participants should rate the indicator between 7 and 9 (high importance).

Results: the final indicator list

23 final indicators were agreed across the 3 ambitions and 10 domains. Some indicators are already available on the PHE sexual and reproductive health data surveillance fingertips profiles, whilst others require development from existing datasets or the PHE reproductive health survey that is currently under development.

Ambition 1. Improve reproductive health-related quality of life

Domain	Reproductive health indicator	Indicator status			
		Already on PHE Fingertips	Requires development (primary care specialist services	Requires development (new reproductive health survey)	Requires development (other)
Psychosexual wellbeing	1. Perinatal mental health				X
Absence of violence	2. Domestic abuse-related incidents and crimes	X			
	3. Violent crimes – sexual offenses	X			
Menstrual health	4. Women of reproductive age presenting with and having intrauterine system insertion primarily for heavy menstrual bleeding		X		
	5. Proportion of women who have self-reported an impact of reproductive health issues (for example, pre-menstrual syndrome, menopause, heavy menstrual bleeding) on i. general wellbeing ii. work			X	
Menopause health	6. Prevalence of women over 44 years old referred for menopause assessment			X	

Ambition 2. Fulfilment of reproductive choice

Domain	Reproductive health indicator	Indicator status			
		Already on PHE Fingertips	Requires development (primary care specialist services	Requires development (new reproductive health survey)	Requires development (other)
Contraception	7. Contraception prevalence rate	X	X		
	8. Women receiving emergency contraception		X		
	9. Average wait time to first available long-acting reversible contraception (LARC) fitting appointment		X		
Unplanned pregnancy	10. Removal of babies at birth into care				X
	11. Under age conception (i. under 16; ii. under 18)	X			
	12. London Measure of Unplanned Pregnancy (LMUP)				X
Abortion	13. Abortions under 10 weeks that are medical	X			
	14. Total abortion rate per 1,000	X			
	15. Under 18 conceptions leading to abortions	X			
Preconception care	16. Low birth weight of term babies	X			
	17. Neonatal mortality and stillbirth rate	X			

Domain	Reproductive health indicator	Indicator status			
		Already on PHE Fingertips	Requires development (primary care specialist services	Requires development (new reproductive health survey)	Requires development (other)
Infertility and fertility service	18. Prevalence of infertility in women			X	
	19. Live birth from assisted conception				X

Ambition 3. Early identification of reproductive morbidity

Domain	Reproductive health indicator	Indicator status			
		Already on PHE Fingertips	Requires development (primary care specialist services)	Requires development (new reproductive health survey	Requires development (other)
Prevention of reproductive ill health	20. Females attending cervical screening within target period		X		
	21. Human pappillomavirus (HPV) vaccination coverage for 2 doses (females 13 to 14 years old)		X		
	22. Total overall (LA and NHS) spend on sexual health provision per capita				X
	23. Number of people who have received high quality sex and relationships education in their lifetime			X	

Next steps

What the indicator set will be used for

The new RH indicator set will have a number of functions at national, regional and local level. It will firstly enable the provision of improved descriptive statistics over time of national and local population level RH covering PHE's 3 core RH amibitions. Measuring trends over time can be a good indicator of population and service resilience and the impact of policy intervention. The revised indicator list will enable policy makers and practitioners to answer key questions relating to RH, such as:

1. To what degree do people who do not want to become pregnant remain not pregnant?
2. To what degree do people who want to become pregnant manage to have a desired healthy outcome?
3. To what degree do people experience difficulties in their life due to reproductive morbidity or associated stigma?
4. What proportion of the population with reproductive ill health reach the services they need in a timely way?

The indicator set will also enable comparison of RH between different communities. Where possible, the RH datasets will be further segmented by key demographic groupings such as age, ethnicity and socioeconomic status. The indicators will also allow improved assessment of the proportion of a population who might benefit from RH care. For example, associations between the proportion of the population who have access to contraception services and RH outcomes will enable local areas to plan appropriate services with sufficient capacity and an appropriate skill mix to meet RH demands.

Finally, by recommending a number of indicators based on the user experience, the indicator set will provide key data for the evaluation of RH services. Availability, accessibility, appropriateness and quality of the service experience, as well as health outcomes, are important determinants of RH care. Most of these factors can only be measured through self-reported measures which are not routinely collected. A user survey providing a set of validated questions to enable improved collection of this data has been commissioned by PHE.

Developing and implementing the indicators

The 23 indicators that reached consensus for inclusion in the RH dataset are at different stages of development and therefore the complete set will be built incrementally and made available through the PHE fingertips tool over time. Those that are already available will be collated to form the preliminary dataset, but many are at a much earlier stage of development. A reproductive health data steering group has been convened to oversee the next stages of this programme of work.

Appendix 1. Delphi consensus steering group members

Stakeholder representation	Name
PHE SH, RH and HIV Team	Sue Mann
	Mar Estupinan
National Infection Service	Kate Folkard
PHE Health Intelligence	Helen Duncan
	Helen Leake
	Hilary Osborne
PHE Teenage Pregnancy	Alison Hadley
PHE Sexual Health Facilitators	Shahin Parmar
	Deb Shaw
GP Representation	Anne Connolly (FSRH)
	Richard Ma
Sexual Health	Asha Kaasliwal (FSRH)
NHS E and I	Matthew Jolly (MTP)
Local commissioners	Etty Martin
	Robert Carroll (English Commissioners)
	Angie Blackmore
	Leanne Bobb
	Woolgar, James
Association of the Directors of Public Health	Nicola Close
	Lucy Sutton
DHSC Abortion Statistics	Robert Betts (DHSC)
	Elizabeth Brocklehurst
Sexual and Reproductive Health	Connie Smith
NHS Digital	Steph Gebert
	Graham Swinton

Stakeholder representation	Name
Royal College of Obstretics and Gynaecology Women's Network	Kate Brian
	Daniel Wolstenholme
Office for National Statistics	Kat Littleboy
	Jonny Tinsley
The Open University	Jenny Douglas
UCL	Neha Pathak

Appendix 2. Indicators and domains

Full list of reproductive health domains used to structure process

Ambition	Domains
Improve reproductive health related quality of life	1. Psychosexual wellbeing 2. Absence of violence 3. Menstrual health 4. Menopause health
Fullfilment of reproductive choice	5. Contraception 6. Unplanned pregnancy 7. Abortion 8. Preconception care 9. Infertility and fertility services
Early identification of reproductive morbidity	10. Prevention of reproductive ill-health

Full indicator list

The following is a list of indicators considered for inclusion through the Delphi process:

- contraception prevalence rate
- unmet need for family planning
- women receiving emergency contraception
- abortions under 10 weeks
- total abortion rate per 1,000
- under 18 conceptions leading to abortions
- removals of babies at birth into care
- underage conception (i. under 18, ii. under 16)
- low birth weight of term babies
- neonatal mortality and stillbirth rate
- perinatal mental health (PMH)
- postnatal mental health
- domestic abuse-related incidents and crimes
- violent crime - sexual offenses
- cervical cancer registrations rate per 100,000
- females attending cervical screening within target period

- human papillomavirus (HPV) vaccination coverage for two doses (females 13 to 14 years old)
- average wait time to first available long-acting reversible contraception (LARC) fitting appointment.
- initiation of contraception prior to discharge
- contraceptive choice after childbirth
- London measure of unplanned pregnancy (LMUP)
- number of children in care eg foster care (LAC) under 18 pregnancy rate
- proportion of women with severe mental illness (SMI) accessing contraception
- received contraception advice or family planning advice
- satisfaction with advice and choice of contraceptive method
- late out of area abortions
- proportion of women attending abortion services who self-report non-consensual first sex
- under 25s abortions after a birth
- obesity in early pregnancy
- prevalence of infertility in women
- general fertility rate (birth rate per 1,000 females aged 15 to 44 years)
- violent crime - hospital admissions for violence (including sexual violence)
- chlamydia and gonorrhoea associated pelvic inflammatory disease (PID) diagnoses
- chlamydia detection rate per 100,000 aged 15 to 24
- diabetes in pregnancy
- prevalence of postnatal complications (including incontinence, vaginal scarring, prolapse, pelvic floor dysfunction, and dyspareunia); i. first year; ii. after first year
- proportion of women who have self-reported an impact of reproductive health issues (for example, premenstrual syndrome; menopause, and heavy menstrual bleeding) on i. general wellbeing, ii. work
- time from initial presentation with symptoms or signs of endometriosis to diagnosis
- total local authority spend on sexual health provision per capita.
- prevalence of female genital mutilation (FGM)
- consensus out
- attendances for contraception by age
- couple-years of protection (CYP) provided in service
- prevalence of males seeking contraceptive advice by age
- proportion of women who self-report condom use with i. long-acting reversible contraception (LARC); ii. pre-exposure prophylaxis (PREP)
- ratio of intrauterine systems; intrauterine devices and implant insertions to removal
- abortions under 10 weeks that are medical
- time to second pregnancy after last abortion or delivery
- folic acid supplements before pregnancy
- incidence of neural tubal defects (NTDS) in last one year
- proportion of women who have self-reported a desire for future pregnancy
- incidence of tubal factor infertility

- live birth from assisted conception
- women of reproductive age presenting with and referred for psychosexual support or services
- ectopic pregnancy admissions rate per 100,000
- number of women (or percentage of reported pregnancies) experiencing miscarriage i. before 10 weeks; ii. after 10 weeks
- number of women who have received high quality sex and relationships education in their lifetime
- pelvic inflammatory disease (PID) admissions rate per 100,000
- prevalence of perinatal complications
- prevalence of sexual dysfunction
- prevalence of women of reproductive age who are smokers
- proportion of women referred to health physiotherapists after birth (for example, within one year).
- proportion of women who have received a mother's 6-weeks postnatal check with GP
- proportion of women who self-report understanding of sexual consent and reproductive rights
- number of women experiencing period poverty
- women of reproductive age presenting with and having intrauterine system insertion primarily for heavy menstrual bleeding
- total annual prescription of tranexamic acid
- prevalence of anaemia in women of reproductive age
- rates of endometrial ablation
- rates of hysterectomy
- satisfaction level for advice received from primary care for painful and heavy periods.
- incidence of premature ovarian insufficiency
- prevalence of women over 44 years old referred for menopause assessment
- total annual prescription of hormone replacement therapy (HRT) products

References

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3. Williamson PR. 'The COMET Handbook: version 1.0.' Trials 18, 280 (2017)

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-leading science, research, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health and Social Care, and a distinct delivery organisation with operational autonomy. We provide government, local government, the NHS, Parliament, industry and the public with evidence-based professional, scientific and delivery expertise and support.

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