

Data element level validity

Table 1. Data element validity test results, HCCN 1, 2023

Data elements	Age group	Sensitivity	Specificity	PPV	NPV
Sterilization	15-44	0.00	1.00	NA	0.97
Sterilization	21-44	0.00	1.00	NA	0.96
Sterilization	15-20	NA	1.00	NA	1.00
IUD	15-44	0.64	0.99	0.88	0.97
IUD	21-44	0.60	0.99	0.86	0.96
IUD	15-20	1.00	1.00	1.00	1.00
Implantable	15-44	0.76	1.00	1.00	0.96
Implantable	21-44	0.73	1.00	1.00	0.96
Implantable	15-20	0.83	1.00	1.00	0.96
Injectables	15-44	0.89	1.00	1.00	0.99
Injectables	21-44	0.94	1.00	1.00	0.99
Injectables	15-20	0.50	1.00	1.00	0.97
Contraceptive pills	15-44	0.89	0.97	0.81	0.98
Contraceptive pills	21-44	0.93	0.98	0.88	0.99
Contraceptive pills	15-20	0.75	0.93	0.60	0.96
Contraceptive patch	15-44	1.00	1.00	1.00	1.00
Contraceptive patch	21-44	1.00	1.00	1.00	1.00
Contraceptive patch	15-20	1.00	1.00	1.00	1.00
Vaginal ring	15-44	NA	1.00	NA	1.00
Vaginal ring	21-44	NA	1.00	NA	1.00
Vaginal ring	15-20	NA	1.00	NA	1.00
Infecund	15-44	0.85	1.00	1.00	0.80
Infecund	21-44	0.85	1.00	1.00	0.81
Infecund	15-20	0.86	1.00	1.00	0.77
Has a qualifying encounter during measurement year	15-44	0.91	1.00	1.00	0.91
Has a qualifying encounter during measurement year	21-44	0.89	1.00	1.00	0.89
Has a qualifying encounter during measurement year	15-20	1.00	1.00	1.00	1.00
SINC response	15-44	0.92	1.00	1.00	0.99
SINC response	21-44	0.91	1.00	1.00	0.99
SINC response	15-20	1.00	1.00	1.00	1.00
Had a prenatal visit during the year prior to the measurement year and 9 months in the measurement year	15-44	0.40	1.00	1.00	0.98
Had a prenatal visit during the year prior to the measurement year and 9 months in the measurement year	21-44	0.40	1.00	1.00	0.97
Had a prenatal visit during the year prior to the measurement year and 9 months in the measurement year	15-20	NA	1.00	NA	1.00

Data elements	Age group	Sensitivity	Specificity	PPV	NPV
Had a live birth date during the last 3 months of the prior year and the measurement year	15-44	0.73	1.00	1.00	0.98
Had a live birth date during the last 3 months of the prior year and the measurement year	21-44	0.73	1.00	1.00	0.97
Had a live birth date during the last 3 months of the prior year and the measurement year	15-20	NA	1.00	NA	1.00
Had an estimated delivery date during the last 3 months of the prior year and the measurement year	15-44	0.50	1.00	1.00	0.99
Had an estimated delivery date during the last 3 months of the prior year and the measurement year	21-44	0.50	1.00	1.00	0.99
Had an estimated delivery date during the last 3 months of the prior year and the measurement year	15-20	NA	1.00	NA	1.00

NA indicates that the validity statistics could not be calculated because the denominator to calculate the statistics was 0. E.g. the patient chart (authoritative source) indicates no women in the 15-20 age group had female sterilization.

Table 2. Data element validity test results, HealthEfficient, 2023

Data elements	Age group	Sensitivity	Specificity	PPV	NPV
Sterilization	15-44	0.25	1.00	1.00	0.98
Sterilization	21-44	0.25	1.00	1.00	0.97
Sterilization	15-20	NA	1.00	NA	1.00
IUD	15-44	0.67	1.00	1.00	0.99
IUD	21-44	0.60	1.00	1.00	0.98
IUD	15-20	1.00	1.00	1.00	1.00
Implantable	15-44	0.67	1.00	1.00	0.99
Implantable	21-44	0.67	1.00	1.00	0.98
Implantable	15-20	NA	1.00	NA	1.00
Injectables	15-44	0.92	1.00	1.00	0.99
Injectables	21-44	0.89	1.00	1.00	0.99
Injectables	15-20	1.00	1.00	1.00	1.00
Contraceptive pills	15-44	0.90	0.99	0.95	0.98
Contraceptive pills	21-44	0.92	0.99	0.92	0.99
Contraceptive pills	15-20	0.86	1.00	1.00	0.96
Contraceptive patch	15-44	1.00	1.00	1.00	1.00
Contraceptive patch	21-44	1.00	1.00	1.00	1.00
Contraceptive patch	15-20	NA	1.00	NA	1.00
Vaginal ring	15-44	0.00	1.00	NA	0.99
Vaginal ring	21-44	0.00	1.00	NA	0.99
Vaginal ring	15-20	NA	1.00	NA	1.00
Infecund	15-44	0.86	0.90	0.96	0.73
Infecund	21-44	0.85	0.90	0.96	0.68

Data elements	Age group	Sensitivity	Specificity	PPV	NPV
Infecund	15-20	0.95	0.91	0.95	0.91
Has a qualifying encounter during measurement year	15-44	1.00	1.00	1.00	1.00
Has a qualifying encounter during measurement year	21-44	1.00	1.00	1.00	1.00
Has a qualifying encounter during measurement year	15-20	1.00	1.00	1.00	1.00
SINC response	15-44	0.95	0.99	0.95	0.99
SINC response	21-44	0.93	1.00	1.00	0.99
SINC response	15-20	1.00	0.96	0.80	1.00
Had a prenatal visit during the year prior to the measurement year and 9 months in the measurement year	15-44	1.00	1.00	1.00	1.00
Had a prenatal visit during the year prior to the measurement year and 9 months in the measurement year	21-44	1.00	1.00	1.00	1.00
Had a prenatal visit during the year prior to the measurement year and 9 months in the measurement year	15-20	1.00	1.00	1.00	1.00
Had a live birth date during the last 3 months of the prior year and the measurement year	15-44	0.70	1.00	1.00	0.98
Had a live birth date during the last 3 months of the prior year and the measurement year	21-44	0.75	1.00	1.00	0.98
Had a live birth date during the last 3 months of the prior year and the measurement year	15-20	0.50	1.00	1.00	0.97
Had an estimated delivery date during the last 3 months of the prior year and the measurement year	15-44	NA	1.00	NA	1.00
Had an estimated delivery date during the last 3 months of the prior year and the measurement year	21-44	NA	1.00	NA	1.00
Had an estimated delivery date during the last 3 months of the prior year and the measurement year	15-20	NA	1.00	NA	1.00

NA indicates that the validity statistics could not be calculated because the denominator to calculate the statistics was 0. E.g. the patient chart (authoritative source) indicates no women in the 15-20 age group had female sterilization.

Empirical validity testing

Tables 3-6 below show summary results of empirical validity testing. We used two statistical methods in this validity analysis to assess correlations between the postpartum contraceptive use measures and related measures at two levels of analysis (facility and clinician group/practice) and stratified by three age categories (i.e., 15-20, 21-44, and 15-44). Results from two methods are shown side-by-side. We ran the analyses using a cutoff to exclude facilities and clinician groups/practices with fewer than 50 eligible patients. For HCCN 1, we are not reporting results for the 15-20 age group at the clinician group/practice level due to the small number of units (n=5) after

applying the 50 minimum patients cutoff. Similarly, for HealthEfficient, due to their small number of facilities (n=3) and clinician groups/practices after excluding those with fewer than 50 eligible patients (n=3), we are not able to conduct correlation analysis for this data partner.

Table 3. Correlation between postpartum most or moderately effective methods measure and selected related measures, facility, HCCN 1, 2023

-	-	-	-	Multilevel correlation estimation	
Related measure	Age Group	Number of units	Pearson r	Correlation coefficients	95% Confidence Limits (lower, upper)
Postpartum Care	15-44	75	.32*	.36*	(.07, .58)
Postpartum Care	21-44	74	.29*	.36*	(.07, .58)
Postpartum Care	15-20	13	.75*	.87*	(.39, 1.00)

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*Statistically significant at $p < .05$

Table 4. Correlation between postpartum LARC measure and selected related measures, facility, HCCN 1, 2023

-	-	-	-	Multilevel correlation estimation	
Related measure	Age Group	Number of units	Pearson r	Correlation coefficients	95% Confidence Limits (lower, upper)
Postpartum Care	15-44	75	.28*	.33*	(.03, .55)
Postpartum Care	21-44	74	.23*	.30*	(.01, .53)
Postpartum Care	15-20	13	.76*	.95*	(.60, 1.00)

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*Statistically significant at $p < .05$

Table 5. Correlation between postpartum most or moderately effective methods measure and selected related measures, clinician group/practice, HCCN 1, 2023

-	-	-	-	Multilevel correlation estimation	
Related measure	Age Group	Number of units	Pearson r	Correlation coefficients	95% Confidence Limits (lower, upper)
Postpartum Care	15-44	136	.35*	.40*	(.31, .65)
Postpartum Care	21-44	133	.33*	.54*	(.35, .68)
Postpartum Care	15-20	5	NA ^s	NA ^s	NA ^s

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*Statistically significant at $p < .05$

^s Estimates not reported from subgroups with fewer than 10 units.

Table 6. Correlation between postpartum LARC measure and selected related measures, clinician group/practice, HCCN 1, 2023

-	-	-	-	Multilevel correlation estimation	
Related measure	Age Group	Number of units	Pearson r	Correlation coefficients	95% Confidence Limits (lower, upper)
Postpartum Care	15-44	136	.31*	.40*	(.19, .56)
Postpartum Care	21-44	133	.29*	.43*	(.23, .59)
Postpartum Care	15-20	5	NA ^s	NA ^s	NA ^s

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*Statistically significant at $p < .05$

^s Estimates not reported from subgroups with fewer than 10 units.