

Supplementary Materials

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Figure s1. PRISMA Flow Diagram

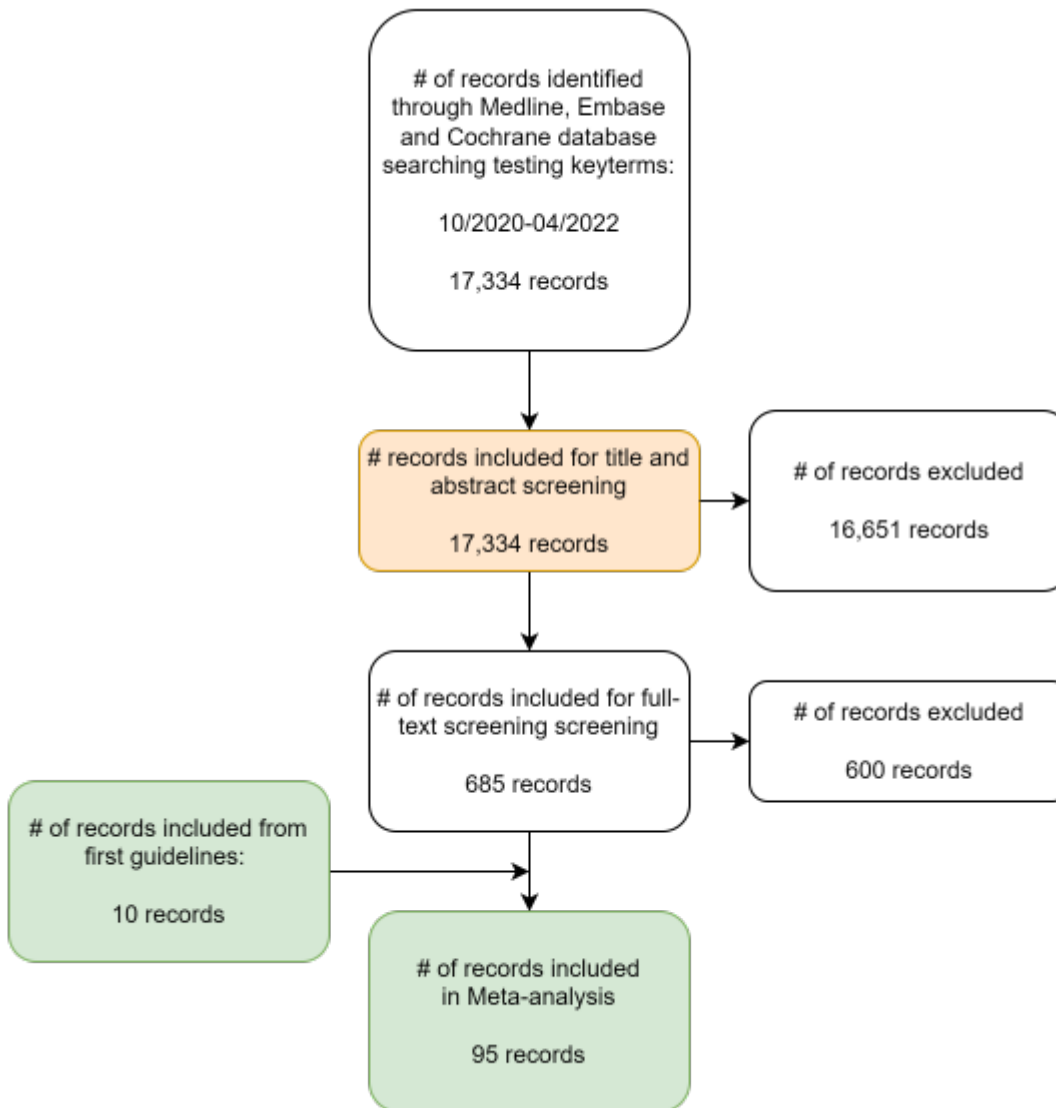


Table s1. PICO Questions Identified by the Panel

PICO	Population	Test/strategy 1	Test/strategy 2	Outcome	Recommendation #
1.	Symptomatic	Ag	No testing	Diagnostic test accuracy	Recommendation #1
2.	Symptomatic	Ag	NAAT	Diagnostic test accuracy	Recommendation #2
3.	Symptomatic	Ag strategy, repeat testing	NAAT	Diagnostic test accuracy	Recommendation #3
4.	Asymptomatic	Ag	No testing	Diagnostic test accuracy	Recommendation #4
5.	Asymptomatic	Ag	NAAT	Diagnostic test accuracy	Recommendation #5
6.	Asymptomatic	Ag strategy, repeat testing	NAAT	Diagnostic test accuracy	Recommendation #6
7.	Students in educational settings and employees in workplaces	Ag strategy, repeat testing	No testing	Patient important outcomes, transmission events	Recommendation #7 (Evidence gap)
8.	Asymptomatic individuals planning to attend large gatherings	Ag	No testing	Patient important outcomes, transmission events	Recommendation #8 (Evidence gap)
9.	Symptomatic	Point-of-care Ag	laboratory-based Ag	Patient important outcomes, transmission events	Both absorbed into Recommendation #9
10.	Asymptomatic	Point-of-care Ag	laboratory-based Ag	Patient important outcomes, transmission events	
11.	Symptomatic	Observed self-collection	Unobserved self-collection	Diagnostic test accuracy	Both absorbed into

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12.	Asymptomatic	Observed self-collection	Unobserved self-collection	Diagnostic test accuracy	Recommendation #10
13.	Symptomatic	Home testing #1	Home testing # 2	Diagnostic test accuracy	Deprioritized question

Ag: antigen [testing]; **NAAT:** nucleic acid amplification test

Table s2. Search Strategy

EMBASE	
Set #	Search Strategy
1	('coronavirus disease 2019'/exp OR 'Severe acute respiratory syndrome coronavirus 2'/exp)
2	((corona* OR corono*) AND (viral* OR viridae* OR virinae* OR virus*)):ti,ab
3	('2019 novel*' OR '2019-ncov' OR 2019ncov OR betacoronavirus* OR Coronaviridae* OR coronavirinae* OR coronavirus* OR coronovirus* OR corvid19 OR 'corvid-19' OR cov OR covid19 OR covid2019 OR 'covid 2019' OR 'covid-19' OR 'hcov-19' OR hcov19 OR ncorona* OR ncorono* OR 'n-cov' OR 'ncov-2019' OR ncov OR ncov2019 OR ncovchina* OR ncovchinese* OR ncovhubei* OR ncover OR ncovwuhan* OR 'novel betacoronavirus' OR 'Novel Coronavirus' OR 'novel CoV' OR 'sarscov-19' OR 'sars-cov19' OR 'sars-cov-19' OR sarscov19 OR 'sarscov2' OR 'sarscov-2' OR 'sars-cov2' OR 'sars-cov-2' OR 'wn-cov' OR wncov):ti,ab
4	((epidem* OR outbreak* OR pandem* OR wildlife*) NEAR/1 (china* OR chinese* OR huanan* OR pneumonia OR respirator*)):ti,ab
5	((('food market*' OR 'seafood market*') NEAR/10 (china* OR chinese* OR huanan* OR hubei* OR wuhan*)):ti,ab
6	OR/1-5
7	('virus antigen'/exp)
8	antigen:ti,ab
9	OR/7-8
10	('delayed diagnosis'/exp OR 'diagnosis'/de OR 'diagnostic procedure'/de OR 'differential diagnosis'/exp OR 'early diagnosis'/exp OR 'examination'/exp OR 'laboratory diagnosis'/exp OR 'physical examination'/exp OR 'qualitative diagnosis'/exp OR 'quantitative diagnosis'/exp OR 'screening'/exp OR 'symptom assessment'/exp OR 'virus diagnosis'/exp)
11	(case* OR 'case finding' OR casefinding OR detect* OR diagnos* OR screen* OR test*):ti,ab
12	OR/10-11
13	6 AND 9 AND 12
14	[english]/lim
15	13 AND 14
16	[animals]/lim NOT [humans]/lim
17	15 NOT 16

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18	('abstract report'/exp OR 'animal experiment'/exp OR 'book'/exp OR 'case finding'/exp OR 'case report'/exp OR 'case study'/exp OR 'conference paper'/exp OR 'editorial'/exp OR 'feasibility study'/exp OR 'in vitro study'/exp OR 'letter'/exp OR 'meta analysis'/exp OR 'meta analysis topic'/exp OR 'meta analysis (topic)'/exp OR 'note'/exp OR 'practice guideline'/exp OR 'review'/exp OR 'systematic review'/exp OR 'systematic review topic'/exp OR 'systematic review (topic)'/exp OR 'veterinary clinical trial'/exp OR 'veterinary study'/exp OR [conference abstract]/lim OR [conference paper]/lim OR [conference review]/lim OR [editorial]/lim OR [letter]/lim OR [note]/lim OR [short survey]/lim OR meta*analys*:ti,ab OR (integrative NEAR/5 research NEAR/5 review*):ti,ab OR (methodologic* NEAR/5 overview*):ti,ab OR (methodologic* NEAR/5 review*):ti,ab OR (quantitativ* NEAR/5 overview*):ti,ab OR (quantitativ* NEAR/5 review*):ti,ab OR (quantitativ* NEAR/5 synthesi*):ti,ab OR (research NEAR/5 integration):ti,ab OR (systematic* NEAR/5 overview*):ti,ab OR (systematic* NEAR/5 review*):ti,ab)
19	17 NOT 18
20	[22-2-2021]/sd NOT [29-9-2021]/sd
21	19 AND 20

PUBMED	
Set #	Search Strategy
1	"COVID-19"[Mesh] OR "SARS-CoV-2"[Mesh] OR "Coronavirus Infections"[Mesh] OR "Betacoronavirus"[Mesh]
2	((corona*[tiab] OR corono*[tiab]) AND (viral*[tiab] OR viridae*[tiab] OR virinae*[tiab] OR virus*[tiab]))
3	"2019 novel*"[tiab] OR "2019-ncov"[tiab] OR 2019ncov[tiab] OR betacoronavirus*[tiab] OR Coronaviridae*[tiab] OR coronavirinae*[tiab] OR coronavirus*[tiab] OR coronovirus*[tiab] OR cov[tiab] OR covid19[tiab] OR covid2019[tiab] OR "covid 2019" [tiab] OR "covid-19"[tiab] OR "hcov-19"[tiab] OR hcov19[tiab] OR "n-cov"[tiab] OR "ncov-2019"[tiab] OR ncov[tiab] OR ncov2019[tiab] OR "novel betacoronavirus"[tiab] OR "Novel Coronavirus"[tiab] OR "novel CoV"[tiab] OR "sars-cov19"[tiab] OR "sars-cov-19"[tiab] OR sarscov19[tiab] OR "sarscov2"[tiab] OR "sarscov-2"[tiab] OR "sars-cov2"[tiab] OR "sars-cov-2"[tiab]
4	(epidem* OR outbreak* OR pandem* OR wildlife*) AND (china* OR chinese* OR huanan* OR pneumonia OR respirator*)
5	((("food market*"[tiab] OR "seafood market*"[tiab]) AND (china*[tiab] OR chinese*[tiab] OR huanan*[tiab] OR hubei*[tiab] OR wuhan*[tiab]))
6	OR/1-5
7	"Antigens, Viral"[Mesh]
8	antigen[tiab]
9	OR/7-8

10	"COVID-19 Testing"[Mesh] OR "Delayed Diagnosis"[Mesh] OR "Diagnosis"[Mesh:NoExp] OR "Diagnosis, Differential"[Mesh] OR "Diagnostic Techniques and Procedures"[Mesh] OR "Early Diagnosis"[Mesh]
11	"diagnosis"[Subheading]
12	case*[tiab] OR "case finding"[tiab] OR casefinding[tiab] OR detect*[tiab] OR diagnos*[tiab] OR screen*[tiab] OR test*[tiab]
13	OR/10-12
14	6 AND 9 AND 13
15	English[Language]
16	14 AND 15
17	animals[Mesh] NOT humans[Mesh]
18	16 NOT 17
19	"2021/02/22"[PDAT] : "3000/12/31"[PDAT]
20	18 AND 19
21	(("Academic Dissertation"[Publication Type] OR "address"[Publication Type] OR "Anecdotes"[Publication Type] OR "Animation"[Publication Type] OR "autobiography"[Publication Type] OR "bibliography"[Publication Type] OR "biography"[Publication Type] OR "Book Illustrations"[Publication Type] OR "Book Review"[Publication Type] OR "Bookplate"[Publication Type] OR "Cartoon"[Publication Type] OR "Case Reports"[Publication Type] OR "Catalog"[Publication Type] OR "Chart"[Publication Type] OR "Comment"[Publication Type] OR "congress"[Publication Type] OR "consensus development conference"[Publication Type] OR "consensus development conference, nih"[Publication Type] OR "dictionary"[Publication Type] OR "directory"[Publication Type] OR "editorial"[Publication Type] OR "Expression of Concern"[Publication Type] OR "Guideline"[Publication Type] OR "Handbook"[Publication Type] OR "interactive tutorial"[Publication Type] OR "interview"[Publication Type] OR "Juvenile Literature"[Publication Type] OR "lecture"[Publication Type] OR "legal case"[Publication Type] OR "legislation"[Publication Type] OR "letter"[Publication Type] OR "Meeting Abstract"[Publication Type] OR "Meta-Analysis"[Publication Type] OR "news"[Publication Type] OR "newspaper article"[Publication Type] OR "overall"[Publication Type] OR "patient education handout"[Publication Type] OR "periodical index"[Publication Type] OR "personal narrative"[Publication Type] OR "portrait"[Publication Type] OR "Review"[Publication Type] OR "Scientific Integrity Review"[Publication Type] OR "Systematic Review"[Publication Type] OR "Unpublished Work"[Publication Type] OR "hascommenton"[All Fields] OR "Cartoons as Topic"[Mesh] OR "Meta-Analysis as Topic"[Mesh] OR "Review Literature as Topic"[Mesh] OR "Systematic Reviews as Topic"[Mesh] OR "case report*"[tiab] OR "integrative research review*"[tiab] OR "integrative review*"[tiab] OR "literature review"[tiab] OR meta-analys*[tiab] OR "meta analys*"[tiab] OR metaanalys*[tiab] OR "narrative review"[tiab] OR "research integration"[tiab] OR "scoping review"[tiab] OR ((methodologic*[tiab] OR quantitative*[tiab] OR systematic*[tiab]) AND (overview*[tiab] OR review*[tiab] OR synthesis*[tiab])))

22	20 NOT 21
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Cochrane	
Set #	Search Strategy
1	MeSH descriptor: [Betacoronavirus] explode all trees
2	MeSH descriptor: [Coronavirus Infections] explode all trees
3	((corona* OR corono*) NEXT (viral* OR viridae* OR virinae* OR virus*)):ti,ab
4	("2019 novel*" OR "2019-ncov" OR 2019ncov OR betacoronavirus* OR Coronaviridae* OR coronavirinae* OR coronavirus* OR coronovirus* OR corvid19 OR "corvid-19" OR cov OR covid19 OR covid2019 OR "covid 2019" OR "covid-19" OR "hcov-19" OR hcov19 OR ncorona* OR ncorono* OR "n-cov" OR "ncov-2019" OR ncov OR ncov2019 OR ncovchina* OR ncovchinese* OR ncovhubei* OR ncovor OR ncovwuhan* OR "novel betacoronavirus" OR "Novel Coronavirus" OR "novel CoV" OR "sarscov-19" OR "sars-cov19" OR "sars-cov-19" OR sarscov19 OR "sarscov2" OR "sarscov-2" OR "sars-cov2" OR "sars-cov-2" OR "wn-cov" OR wncov):ti,ab
5	(epidem* OR outbreak* OR pandem* OR wildlife*) NEAR/1 (china* OR chinese* OR huanan* OR pneumonia OR respirator*):ti,ab
6	((("food market*" OR "seafood market*") NEAR/10 (china* OR chinese* OR huanan* OR hubei* OR wuhan*)):ti,ab
7	OR/1-6
8	"Antigens, Viral"[Mesh]
9	antigen:ti,ab
10	OR/8-9
11	MeSH descriptor: [Delayed Diagnosis] explode all trees
12	MeSH descriptor: [Diagnosis] this term only
13	MeSH descriptor: [Diagnosis, Differential] explode all trees
14	MeSH descriptor: [Diagnostic Techniques and Procedures] explode all trees
15	MeSH descriptor: [Early Diagnosis] explode all trees
16	Any MeSH descriptor in all MeSH products and with qualifier(s): [diagnosis - DI]
17	case* OR "case finding" OR casefinding OR detect* OR diagnos* OR screen* OR test*
18	OR/11-17
19	7 AND 10 AND 18
20	MeSH descriptor: [Animals] explode all trees
21	MeSH descriptor: [Humans] explode all trees
22	20 NOT 21
23	19 NOT 22
24	February 22, 2021 to Current

25	23 AND 24
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Table s3. QUADAS-2 risk of bias assessment for included studies (95 studies)

	Author, Year	Patient Selection Risk of Bias	Index Test Risk of Bias	Reference Standard Risk of Bias	Flow & Timing Risk of Bias
1.	Albert 2021 [1]	Low	Low	Unclear	Low
2.	Alghounaim 2021 [2]	High	Low	Unclear	Low
3.	Allan-Blitz 2021 [3]	Low	Low	Unclear	Low
4.	Almendaras 2022 [4]	Low	Low	Unclear	Low
5.	Alqahtani 2021 [5]	Low	Low	Unclear	Low
6.	Amer 2021 [6]	Low	Low	Unclear	Low
7.	Aoki 2021 [7]	High	Unclear	Low	Unclear
8.	Aoki 2021 [8]	High	Unclear	Unclear	Low
9.	Aranaz-Andrés 2022 [9]	Low	Unclear	Unclear	Low
10.	Baro 2021 [10]	Low	Low	Low	Low
11.	Beck 2021 [11]	Low	Low	Low	Low
12.	Bianco 2021 [12]	Low	Low	Unclear	Low
13.	Brihn 2021 [13]	Low	Low	Unclear	Low
14.	Bulilete 2021 [14]	Low	Low	Unclear	Low
15.	Carbonell-Sahuquillo 2021 [15]	Low	Low	Unclear	Low
16.	Caruana 2021 [16]	Low	Low	Unclear	Low
17.	Chiu 2021 [17]	Low	Unclear	Unclear	Unclear
18.	Courtellemont 2021 [18]	Low	Low	Unclear	Low
19.	Di Domenico 2021 [19]	Low	Low	Low	Low
20.	Dierks 2021 [20]	High	Low	Low	Low
21.	Drain 2021 [21]	Low	Low	Low	Low
22.	Drain 2021 [22]	Low	Low	Low	Low
23.	Escribano 2022 [23]	Low	Low	Low	Low
24.	Fernandez-Montero 2021 [24]	Low	Low	Low	Low

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25.	Fernández-Rivas 2021 [25]	Low	Low	Low	Low
26.	Ferté 2021 [26]	Low	Low	Low	Low
27.	Fitoussi 2021 [27]	Low	Low	Low	Low
28.	Ford 2021 [28]	Low	Low	Low	Low
29.	Fourati 2021 [29]	High	Low	Low	Unclear
30.	Fourati 2022 [30]	High	High	Low	Low
31.	García-Fiñana 2021 [31]	Low	Low	Low	Low
32.	Gili 2021 [32]	Low	Low	Low	Low
33.	González-Donapetry 2021 [33]	Low	Low	Low	Low
34.	Hagbom 2022 [34]	Low	Low	Low	Low
35.	Harris 2021 [35]	Low	Low	Low	Low
36.	Hirotsu 2021 [36]	Low	Low	High	Unclear
37.	Holzner 2021 [37]	Low	Low	High	Low
38.	Homza 2021 [38]	Low	Low	Low	Low
39.	Ifko 2021 [39]	Low	Low	Low	Low
40.	Ishii 2021 [40]	High	Low	High	High
41.	Jakobsen 2021 [41]	Low	Low	Low	Low
42.	James 2022 [42]	Low	Low	Low	Low
43.	Kahn 2021 [43]	Low	High	Low	Low
44.	Kernéis 2021 [44]	Low	Low	Low	Low
45.	Kim 2021 [45]	Low	Unclear	Low	Low
46.	Kim 2022 [46]	High	High	Low	Low
47.	Klajmon 2022 [47]	Low	Low	Low	low
48.	Klein 2021 [48]	Low	Low	Low	low
49.	Kolwijck 2021 [49]	Low	Low	Low	low
50.	Koskinen 2021 [50]	Low	High	Low	Low
51.	Krüger 2021 [51]	Low	Low	Low	Low
52.	Kumar 2021 [52]	Low	Low	Low	Low

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53.	Landaas 2021 [53]	Low	Low	Low	Low
54.	Leber 2021 [54]	Low	Low	Low	Low
55.	Leixner 2021 [55]	Low	Low	Low	Low
56.	Leli 2021 [56]	Low	Low	Low	Low
57.	Masiá 2021 [57]	Low	Low	Low	Low
58.	Mboumba 2021 [58]	High	Low	Low	Low
59.	Merino 2021 [59]	Low	Low	Low	Low
60.	Merino-Amador 2021 [60]	Low	Low	Low	Low
61.	Mitchell 2021 [61]	Low	Low	Low	Low
62.	Møller 2022 [62]	Low	Low	Low	Low
63.	Montalvo 2021 [63]	Low	Unclear	Unclear	Low
64.	Mungomklang 2021 [64]	Low	Unclear	Low	Low
65.	Murillo-Zamora 2021 [65]	Low	Unclear	Low	Low
66.	Nikolai 2021 [66]	Low	Unclear	Low	Low
67.	Nörz 2021 [67]	Low	Unclear	Low	Low
68.	Osterman 2021 [68]	High	Unclear	Unclear	Low
69.	Paul 2021 [69]	Low	High	Low	Low
70.	Peacock 2022 [70]	Low	Low	Low	Low
71.	Peña 2021 [71]	Low	Low	Unclear	Low
72.	Pérez-García 2021 [72]	High	Unclear	Unclear	Low
73.	Pérez-García 2021 [73]	Low	High	Low	Low
74.	Pettonnet 2022 [74]	High	High	Low	Low
75.	Pilarowski 2021 [75]	Low	Low	Low	Low
76.	Pollock 2021 [76]	Low	Low	Low	Low
77.	Pray 2021 [77]	Low	Low	Unclear	Low
78.	Prince-Guerra 2021 [78]	Low	Low	Low	Low
79.	Quentin 2022 [79]	Low	Low	Low	Low
80.	Rahman 2021 [80]	Low	Low	Low	Low

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81.	Regev-Yochay 2022 [81]	Low	Low	Low	Low
82.	Schuit 2021 [82]	Low	Low	Low	Low
83.	Shaikh 2021 [83]	Low	Unclear	High	Low
84.	Siddiqui 2021 [84]	Low	Low	Low	Low
85.	Smith 2021 [85]	Low	Unclear	Unclear	Low
86.	Tinker 2021 [86]	Low	Unclear	Unclear	Low
87.	Tonen-Wolyec 2021 [87]	Low	Unclear	Unclear	Low
88.	Turcato 2022 [88]	Low	Unclear	Unclear	Low
89.	Van Der Moeren 2021 [89]	Low	Unclear	Unclear	Low
90.	Venekamp 2022 [90]	Low	Low	Low	Low
91.	Villaverde 2021 [91]	Low	Low	Low	Low
92.	Von Ahnen 2021 [92]	Low	Low	Low	Low
93.	Von Ahnen 2022 [93]	Low	Low	Low	Low
94.	Wachinger 2021 [94]	Low	Low	Low	High
95.	Winkel 2021 [95]	Low	Low	High	High

*Reference list is located after Table s4. Baseline Characteristics of the Included Studies

Table s4. Baseline Characteristics of the Included Studies

Author (Country)	Patient Selection	Index test	Reference Standard
Author, year: Albert 2021 [1] Country: Spain Study Design: Non-randomized/observational study with comparator (e.g. case control)	Number of patients: 412 Age: median 36, range 17-91 Gender (%male): 42% male Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): tested if symptoms within past week	Test name(s): Panbio EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: nucleocapsid antigen COI: NR Turnaround time: 15min Sample site: NP	Test name(s): TaqPath COVID-19 Kit Target gene: ORF1ab, N and S genes Ct threshold: NR Sample site: NP Type of swab: flocked swab Transport media: NA Self vs HCW: HCW

		Type of swab: flocked swabs Transport media: NA HCW collection: Yes Sampling sequence: Unclear which one obtained first	
Author, year: Alghounaim 2021 [2] Country: Kuwait Study Design: Non-randomized/observational study with comparator (e.g. case control)	Number of patients: 897 (Same patients as below row - all pts were swabbed twice for the two tests, not a separate cohort of patients) Age: median 40.2 (IQR 32.3-47.8) Gender (%male): 94% male Symptomatic or Asymptomatic or Mix: Mix	Test name(s): Diasorin LIAISON EUA certified: No CE certified: Yes Platform: chemiluminescence sandwich-immunoassay (CLIA) Target antigen: NR	Test name(s): TaqPath COVID-19 KitYes Target gene: ORF1ab, N and S genes Ct threshold: NR Sample site: NP Type of swab: polyester-tipped 3-dimensionally printed swabs Transport media: NR - Collected samples intended for laboratory-based tests were

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	Days since symptom onset (if applicable): 3% of patients symptomatic	COI: NR Turnaround time: 15-30min Sample site: NP Type of swab: polyester-tipped 3-dimensionally printed swabs Transport media: NR - Collected samples intended for laboratory-based tests were stored at a site and transported at 2–8°C immediately to the Jaber Innovation Laboratory at Jaber Alahmad Hospital and were processed within 12 h HCW collection: Yes Sampling sequence: Unclear which one obtained first	stored at a site and transported at 2–8°C immediately to the Jaber Innovation Laboratory at Jaber Alahmad Hospital and were processed within 12 h Self vs HCW: HCW
	Number of patients: 18457	Test name(s): BinaxNow	Test name(s): modified CDC protocol

Author, year: Allan-Blitz 2021 [3] Country: FL, USA Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NR	EUA certified: Yes CE certified: No Platform: lateral flow immunoassay Target antigen: NR COI: NR Turnaround time: NR Sample site: AN Type of swab: flocked swabs Transport media: NR	Target gene: NR Ct threshold: 40 Sample site: AN Type of swab: flocked swabs Transport media: NR Self vs HCW: Mix - health care worker-observed self-collected oral fluid swabs, self-collected anterior nares swabs, and clinician-collected nasopharyngeal swabs.
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		HCW collection: Yes Sampling sequence: Ag first	
Author, year: Almendaras 2022 [4] Country: AZ, USA Study Design: Non-randomized/observational study with comparator (e.g. case control)	Number of patients: 3419 Age: median 41 (range 10-95) Gender (%male): 37.7% male, 49.2% female, 13.1% undisclosed Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NR	Test name(s): BinaxNow EUA certified: Yes CE certified: No Platform: lateral flow immunoassay Target antigen: NR COI: NR Turnaround time: 15-30min Sample site: AN	Test name(s): CDC 2019-nCoV rRT-PCR diagnostic panel (CDC rRT-PCR assay) for detection of SARS-CoV-2 (n = 2,582) or the Fosun COVID19 rRT-PCR detection kit (Fosun rRT-PCR assay) (n = 837) Target gene: Statistical analysis was limited to data collected from specimens tested by the CDC rRT-PCR assay when using the nucleocapsid 1 (N1) cycle threshold value as a variable, because the two rRT-PCR assays detect different SARS-CoV-2 gene targets and CT value Ct threshold: NR Sample site: NP Type of swab: NR

		Type of swab: Swab provided in collection kit was used Transport media: NA HCW collection: Yes Sampling sequence: Ag first	Transport media: NR Self vs HCW: HCW
Author, year: Alqahtani 2021 [5] Country: Bahrain Study Design: Non-randomized/observational study with comparator (e.g. case control)	Number of patients: 4183 Age: median 30.9 +/- 14.5 Gender (%male): 56.5% male Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): median 2 days (range 1-3)	Test name(s): Panbio EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: Nucleocapsid protein	Test name(s): TaqPath COVID-19 Kit Target gene: E gene - If the E gene was detected, the sample was then confirmed by RdRP and N genes Ct threshold: Ct values >40 were considered negative Sample site: NP Type of swab: NR

		COI: NR Turnaround time: 15min Sample site: AN Type of swab: Swab provided with kit Transport media: NA HCW collection: Yes Sampling sequence: Ag first	Transport media: NA Self vs HCW: HCW
Author, year: Amer 2021 [6] Country: Egypt	Number of patients: 83 Age: median 55.5 +/- 18.4	Test name(s): Standard Q EUA certified: No	Test name(s): real-time PCR kit (Primerdesign Ltd, Ref: Z-Path-COMD-19CE, UK) in Stratagene Mx3000P qPCR System (Agilent). Target gene: RdRp gene

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Study Design: Non-randomized/observational study with comparator (e.g. case control)	Gender (%male): 59% male Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): 50.6% of patients with symptoms, 6.2% asymptomatic, 43.3% not reported. Of the people symptomatic, 45.7% had symptoms within 0-7 days, 32.5% had symptoms within 8-16, 4.8% had symptoms >16 days, 1.2% with symptoms after sampling	CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: Nucleocapsid protein COI: NR Turnaround time: 15-30min Sample site: NP and OP swab mixed into single VTM for testing Type of swab: NR Transport media: VTM HCW collection: Yes	Ct threshold: The analyzed samples were considered negative if they have a Ct value ≥ 40 or when no Ct values were reported. For positive samples, SARS-CoV-2 RNR content was categorized according to the Ct values into strong (Ct < 29), moderate (Ct = 29–36) and weak (Ct Sample site: NP and OP swab mixed into single VTM for testing Type of swab: NR Transport media: VTM Self vs HCW: HCW
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		Sampling sequence: Same sample for both	
Author, year: Aoki 2021a [7]	Number of patients: 548	Test name(s): Lumipulse G	Test name(s): One-step RT-qPCR was performed using QuantStudio® 5 (Applied Biosystems™, U.S.A.) or BD MAX™ open system, respectively. TaqMan Fast Virus 1-Step Master Mix (Thermo Fisher Scientific, U.S.A.) and BD MAX™ TNR MMK (SPC) were used as one-step RT-qPCR master m
Country: Japan	Age: NR	EUA certified: No	
Study Design: Non-randomized/observational study with comparator (e.g. case control)	Gender (%male): NR	CE certified: Yes	Target gene: N gene
	Symptomatic or Asymptomatic or Mix: Symptomatic	Platform: chemiluminescent enzyme immunoassay (CLEIA)	Ct threshold: NR
	Days since symptom onset (if applicable): collected from COVID-19 patients or suspected patients with COVID-19	Target antigen: NR	Sample site: NP
		COI: Using a cut-off value of 1.34 pg/ml	Type of swab: NR
		Turnaround time: NR	Transport media: NR
		Sample site: NP	Self vs HCW: NR
		Type of swab: NR	

		Transport media: NR HCW collection: NR Sampling sequence: Same sample used for both tests	
Author, year: Aoki 2021b [8] Country: Japan Study Design: Non-randomized/observational study with comparator (e.g. case control)	Number of patients: 129 Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): All	Test name(s): Espline EUA certified: No CE certified: Yes Platform: Immunochromatographic assay Target antigen: N antigen COI: NR	Test name(s): One-step RT-qPCR was performed using QuantStudio® 5 (Applied Biosystems™, U.S.A.) or BD MAX™ open system, respectively. TaqMan Fast Virus 1-Step Master Mix (Thermo Fisher Scientific, U.S.A.) and BD MAX™ TNR MMK (SPC) were used as one-step RT-qPCR master m Target gene: N gene Ct threshold: NR Sample site: NP Type of swab: NR

		Turnaround time: 30min Sample site: NP Type of swab: NR Transport media: Some frozen samples taken from UVT HCW collection: NR Sampling sequence: NR	Transport media: Some frozen samples taken from UVT Self vs HCW: NR
Author, year: Aranaz-Andrés 2022 [9] Country: Spain Study Design: Non- randomized/	Number of patients: 541 Age: median 76.7 Gender (%male): 56% male	Test name(s): Panbio EUA certified: No CE certified: Yes	Test name(s): TaqPath COVID-19 Kit Target gene: Orf1ab, N, S gene Ct threshold: Only samples with Ct value $\leq$ 35 were considered positives. Sample site: NP

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observational study with comparator (e.g. case control)	Symptomatic or Asymptomatic or Mix: Asymptomatic Days since symptom onset (if applicable): NA	Platform: Lateral flow immunochromatographic assay Target antigen: NR COI: NR Turnaround time: 15min Sample site: NP Type of swab: NR Transport media: NA HCW collection: Yes Sampling sequence: Random - switches which one is first	Type of swab: NR Transport media: NA Self vs HCW: HCW

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Author, year: Baro 2021 [10] Country: Spain Study Design: Non-randomized/observational study with comparator (e.g. case control)	Number of patients: 286 Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Asymptomatic Days since symptom onset (if applicable): NA	Test name(s): Multiple EUA certified: Yes CE certified: Yes Platform: Multiple Target antigen: NR COI: NR Turnaround time: 15min Sample site: NP Type of swab: NR Transport media: VTM	Test name(s): Allplex 2019-nCoV assay Target gene: NR Ct threshold: NR Sample site: NP Type of swab: NR Transport media: VTM Self vs HCW: HCW
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		HCW collection: Yes Sampling sequence: NR - RT PCR test completed before Ag but unclear which sample was obtained first or if same sample used	
Author, year: Beck 2020 [11] Country: US Study Design: Non-randomized/observational study with comparator (e.g. case control)	Number of patients: 347 Age: range 1-90 years Gender (%male): NR Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): 0-5, >5days	Test name(s): Sofia EUA certified: Yes CE certified: Yes Platform: Lateral Flow Assay Target antigen: Nucleocapsid COI: NR Turnaround time: NR	Test name(s): Hologic Aptima, Cepheid Xpert Xpress used for discrepant results (data from CXX not used) Target gene: ORF1ab Ct threshold: NR Sample site: NP Type of swab: mini-tip nylon flocked swab Transport media: Amies bacterial transport medium

		Sample site: AN Type of swab: Provided by manufacturer Transport media: dry swab HCW collection: Unclear Sampling sequence: PCR first	Self vs HCW: Unclear
Author, year: Bianco 2021 [12] Country: Italy Study Design: Non-randomized/ observational study with	Number of patients: 907 Age: mean 47.9 Gender (%male): 55.7% male Symptomatic or Asymptomatic or Mix: Mix	Test name(s): LumiraDx EUA certified: No CE certified: Yes Platform: fluorescence immunoassay (FIA)	Test name(s): Xpert Xpress SARS-CoV-2 assay (Cepheid, Sunnyvale, CA) Target gene: NR Ct threshold: NR Sample site: NP Type of swab: NR

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comparator (e.g. case control)	Days since symptom onset (if applicable): At specimen collection, 676 (74.5%) participants were asymptomatic and 231 (25.5%) reported experiencing one or more COVID-19 symptoms. The median interval from symptom onset to specimen collection was 4 days (interquartile range 2-7).	Target antigen: Nucleocapsid protein COI: NR Turnaround time: NR Sample site: AN Type of swab: NR Transport media: NR HCW collection: Yes Sampling sequence: NR	Transport media: NR Self vs HCW: HCW
Author, year: Brihn 2021 [13]	Number of patients: 2039 Age: median 56 (range 16-107)	Test name(s): Multiple EUA certified: No	Test name(s): Fulgent COVID-19 RT-PCR (Fulgent Genetics) (RT-PCR test) Target gene: N1 and N2 gene

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Country: California, USA Study Design: Non-randomized/observational study with comparator (e.g. case control)	Gender (%male): 45% male Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): 15% had covid symptoms	CE certified: Yes Platform: Multiple Target antigen: NR COI: NR Turnaround time: NR Sample site: AN Type of swab: NR Transport media: NA HCW collection: Yes	Ct threshold: Ct values <40 Sample site: NP Type of swab: NR Transport media: NA Self vs HCW: HCW
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		Sampling sequence: Ag first, NP second	
Author, year: Bulilete 2021 [14] Country: Spain Study Design: Non-randomized/observational study with comparator (e.g. case control)	Number of patients: 1369 Age: mean 42.5 +/- 14.9 Gender (%male): 45.7% male Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): 36.7% with symptoms, 54.8% close contact, 8.5% unknown symptoms. Of patients with symptoms, 70.6% with testing 5 days or less since symptom onset or close contact, 15.7% with >5 days.	Test name(s): Panbio EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: NR COI: NR Turnaround time: NR Sample site: NP Type of swab: NR	Test name(s): TaqPath COVID-19 Kit Target gene: ORF, N, S gene Ct threshold: NR Sample site: NP Type of swab: NR Transport media: NR Self vs HCW: HCW

		Transport media: NR HCW collection: Yes Sampling sequence: NR	
Author, year: Carbonell-Sahuquillo 2021 [15] Country: Spain Study Design: Non-randomized/observational study with comparator (e.g. case control)	Number of patients: 357 Age: median 2 (IQR 1-6) Gender (%male): 56.5% Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): median 1 days since symptom onset (IQR 1-3)	Test name(s): Panbio EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: NR COI: NR	Test name(s): TaqPath COVID-19 Kit Target gene: ORF, N, S gene Ct threshold: NR Sample site: NP Type of swab: NR Transport media: NR

		Turnaround time: NR Sample site: NP Type of swab: NR Transport media: NR HCW collection: Yes Sampling sequence: NR	Self vs HCW: HCW
Author, year: Caruana 2021 [16] Country: Switzerland	Number of patients: 532 Age: median 67 (IQR 48.5, 81.0) for patients without symptoms, median 75 (IQR 61.0, 85.0) for patients with symptoms	Test name(s): Multiple EUA certified: No CE certified: Yes	Test name(s): VIASURE SARS-CoV-2 (N1 + N2) Real-Time PCR Detection Kit for BD MAX (Becton Dickinson, Franklin Lake, NJ, USA) or GeneXpert SARS-CoV-2 test (Cepheid, Sunnyvale, CA, USA) Target gene: NR Ct threshold: NR

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Study Design: Non-randomized/observational study with comparator (e.g. case control)	Gender (%male): 56.1% male for patients without symptoms, 55.3% male for patients with symptoms Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NR	Platform: Lateral Flow Assay Target antigen: NR COI: NR Turnaround time: 15-30min for Standard Q and Panbio, 20min for Exdia and BD Veritor Sample site: NP Type of swab: wet swab Transport media: VTM HCW collection: NR Sampling sequence: Same swab for both tests	Sample site: NP Type of swab: wet swab Transport media: VTM Self vs HCW: NR

Author, year: Chiu 2021 [17] Country: California and Hong Kong Study Design: Non-randomized/observational study with comparator (e.g. case control)	Number of patients: 329 symptomatic in Cali and 22,994 asymptomatic in Hong Kong Age: San Fran and Oakland population - 83 patients total, 2 removed due to samples lost in transport, median age 32 (IQR 25,44). San Fernando - 270 patients total, 2 removed due to samples lost in transport, median 35yo (IQR 24,50) Gender (%male): San Fran and Oakland population - 83 patients total, 2 removed due to samples lost in transport, 55.6% male. San Fernando - 270 patients total, 2 removed due to samples lost in transport, 47.4% male Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): within 5 days for symptomatic patients	Test name(s): INDICAID EUA certified: No CE certified: Yes Platform: lateral flow immunoassay Target antigen: NR COI: Positive Ct median 18.13 [IQR 16.29 – 22.96] for San Fan/Oakland group. Positive Ct median 19.55 [IQR 17.07 – 24.35] for San Fernando. Turnaround time: 20min Sample site: AN Type of swab: NR	Test name(s): RT-PCR Target gene: NR Ct threshold: NR Sample site: AN Type of swab: NR Transport media: NR Self vs HCW: HCW and self collected
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		Transport media: NR HCW collection: Yes Sampling sequence: NR	
Author, year: Courtellemont 2021 [18] Country: France Study Design: Non- randomized/ observational study with comparator (e.g. case control)	Number of patients: 248 Age: NR Gender (%male): 47.1% male Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): Ninety seven patients were symptomatic, and 24 were totally asymptomatic. The median time of symptom duration before	Test name(s): COVID VIRO EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: NR COI: NR	Test name(s): TaqPath COVID-19 Kit Target gene: ORF1ab, S, N gene Ct threshold: Samples showing an exponential growth curve and a cycle threshold (Ct)value < 37 were considered positive. A unique Ct value > 37 was considered negative. Sample site: NP (but subset had OP/saliva for comparison) Type of swab: A polyester-tipped flexible (viral transport medium tube with swab VTM, Sun-Trine®) was inserted

	sampling was 5 days (mean, 6 days; range, 1–20).	Turnaround time: 15min Sample site: NP (but subset has OP/saliva too for comparison) Type of swab: A polyester-tipped flexible (viral transport medium tube with swab VTM, Sun-Trine®) was inserted Transport media: NA HCW collection: Yes Sampling sequence: RT-PCR sample first, Ag second	Transport media: NA Self vs HCW: HCW
Author, year: Di Domenico 2021 [19] Country: Italy	Number of patients: 433 Age: median age—37 years, range—15–78	Test name(s): Panbio EUA certified: No CE certified: Yes	Test name(s): RT-PCR assay for SARS-CoV-2 (QuantStudio™, Thermo Fisher Scientific, Waltham, MA, USA) Target gene: Orf-1ab, N Protein and S Protein

Study Design: Non-randomized/observational study with comparator (e.g. case control)	Gender (%male): NR Symptomatic or Asymptomatic or Mix: Asymptomatic Days since symptom onset (if applicable): NA	Platform: Lateral flow immunochromatographic assay Target antigen: Nucleocapsid protein COI: NR Turnaround time: 15-20 min Sample site: NP Type of swab: NR Transport media: NR HCW collection: Yes Sampling sequence: antigen first	Ct threshold: 35 Sample site: NP Type of swab: NR Transport media: NR Self vs HCW: HCW

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Author, year: Dierks 2021 [20] Country: Germany Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 444 Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Asymptomatic Days since symptom onset (if applicable): NA	Test name(s): Multiple EUA certified: No CE certified: Yes Platform: Lateral Flow Assay Target antigen: Nucleocapsid protein COI: NR Turnaround time: NR Sample site: NP Type of swab: NR Transport media: NR	Test name(s): Roche Cobas SARS-CoV-2 PCR, the Genesig Real-Time PCR Coronavirus (COVID-19) assay, or the Cepheid Xpert Xpress SARS-CoV-2 PCR Target gene: NR Ct threshold: 30 Sample site: NP Type of swab: NR Transport media: NR Self vs HCW: NR
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		HCW collection: NR Sampling sequence: NR	
Author, year: Drain 2021a [21] Country: USA Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 222 Age: mean (SD) 38.7 (17.3) Gender (%male): 82 (26.9%) Symptomatic or Asymptomatic or Mix: Asymptomatic Days since symptom onset (if applicable): NA	Test name(s): LumiraDx EUA certified: No CE certified: Yes Platform: fluorescence immunoassay (FIA) Target antigen: Nucleocapsid protein COI: NR Turnaround time: 12min	Test name(s): TaqPath COVID-19 Kit or Cobas 6800 Roche Target gene: NR Ct threshold: 33 Sample site: AN Type of swab: NR Transport media: NR Self vs HCW: Yes

		Sample site: AN Type of swab: NR Transport media: NR HCW collection: Yes Sampling sequence: same time	
Author, year: Drain 2021b [22] Country: Multiple sites, UK and USA Study Design: Non-randomized/observational study with	Number of patients: 512 Age: 0-90yo, mean 34 ($\pm$ 15.7) for ANS, mean 33.2 ($\pm$ 19.4) for NPS Gender (%male): (44%) Symptomatic or Asymptomatic or Mix: Mix	Test name(s): LumiraDx EUA certified: Yes CE certified: Yes Platform: Microfluidic Immunofluorescence Assay Target antigen: Nucleocapsid	Test name(s): Roche cobas SARS-CoV-2 Target gene: ORF1ab, E Ct threshold: NR Sample site: AN, NP Type of swab: ANS: Copan FLOQ swab, NP: NR

comparator (e.g. case control)	Days since symptom onset (if applicable): Average duration of four days at testing (for symptomatic)	COI: NR Turnaround time: NR Sample site: AN, NP Type of swab: NR Transport media: 0.7 mL of a proprietary extraction buffer HCW collection: Yes Sampling sequence: same time	Transport media: 3 ml of VTM Self vs HCW: HCW
Author, year: Escribano 2022 [23] Country: Spain	Number of patients: 900 Age: NR	Test name(s): Multiple EUA certified: No	Test name(s): TaqPath COVID-19 Kit Target gene: NR Ct threshold: 20

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Study Design: Non-randomized/observational study with comparator (e.g. case control)	Gender (%male): 361 (40%) Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NA	CE certified: Yes Platform: Lateral flow Assay Target antigen: Nucleocapsid protein COI: NR Turnaround time: NR Sample site: NP Type of swab: NR Transport media: NR HCW collection: Yes Sampling sequence: NR	Sample site: NP Type of swab: NR Transport media: NR Self vs HCW: HCW
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Author, year: Fernandez-Montero 2021 [24] Country: Spain Study Design: Non-randomized/observational study with comparator (e.g. case control)	Number of patients: 2288 Age: Mean (SD) 28 (12.3) Gender (%male): 896 (38%) Symptomatic or Asymptomatic or Mix: Asymptomatic Days since symptom onset (if applicable): NA	Test name(s): Roche SD EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: NR COI: NR Turnaround time: NR Sample site: NP Type of swab: NR	Test name(s): RT-PCR Target gene: NR Ct threshold: 35 Sample site: OP Type of swab: NR Transport media: NR Self vs HCW: HCW
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		Transport media: NR HCW collection: Yes Sampling sequence: NR	
Author, year: Fernández-Rivas 2021 [25] Country: Spain Study Design: Non- randomized/ observational study with comparator (e.g. case control)	Number of patients: 861 Age: median: 44 years old, range 1-94 Gender (%male): 245 (28%) Symptomatic or Asymptomatic or Mix: Asymptomatic Days since symptom onset (if applicable): NA	Test name(s): Diasorin LIAISON EUA certified: No CE certified: Yes Platform: chemiluminescence sandwich-immunoassay (CLIA) Target antigen: Nucleocapsid protein COI: 100 TCID50/ml Turnaround time: NR	Test name(s): Allplex 2019-nCoV assay Target gene: NR Ct threshold: 40 Sample site: AN Type of swab: NR Transport media: NR Self vs HCW: NR

		Sample site: AN Type of swab: NR Transport media: NR HCW collection: NR Sampling sequence: NR	
Author, year: Ferté 2021 [26] Country: France Study Design: Non-randomized/ observational study with	Number of patients: 688 Age: Mean (SD) 22.95 (5.52) Gender (%male): 236 (34.0%) Symptomatic or Asymptomatic or Mix: Mix	Test name(s): Panbio EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay	Test name(s): ARGENE SARS-CoV-2 R-GENE, BioMérieux, France Target gene: RT-PCR was considered positive when both nucleocapsid (N) and RNA-dependent RNR polymerase (RdRp) genes were detected Ct threshold: 33 Sample site: NP

comparator (e.g. case control)	Days since symptom onset (if applicable): NR	Target antigen: NR COI: NR Turnaround time: NR Sample site: NP Type of swab: NR Transport media: NR HCW collection: Yes Sampling sequence: NR	Type of swab: NR Transport media: NR Self vs HCW: HCW
Author, year: Fitoussi 2021 [27] Country: France	Number of patients: 967 Age: Median 34 Range (18–83)	Test name(s): BIOSYNEX BSS EUA certified: Yes	Test name(s): Real-Time Multiplex RT-PCR Kit (detection for three genes) (Liferiver and Shanghai ZJ Bio-Tech Co., Ltd), Target gene: (E, N and RdRP)

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Study Design: Non-randomized/observational study with comparator (e.g. case control)	Gender (%male): 469 (48.5%) Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): 0-20days	CE certified: Yes Platform: immunochromatographic assay Target antigen: Nucleocapsid protein COI: NR Turnaround time: most seen within 5min Sample site: NP Type of swab: swab provided in the BIOSYNEX Ag-RDT Transport media: NR HCW collection: Yes	Ct threshold: 41 Sample site: NP Type of swab: NR Transport media: NR Self vs HCW: HCW
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		Sampling sequence: Antigen first	
Author, year: Ford 2021 [28]	Number of patients: 2110	Test name(s): BinaxNow	Test name(s): TaqPath COVID-19 Kit
Country: Wisconsin, USA	Age: NR	EUA certified: Yes	Target gene: ORF1ab, S-gene, and N-gene
Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Gender (%male): NR	CE certified: No	Ct threshold: 37
	Symptomatic or Asymptomatic or Mix: Mix	Platform: lateral flow immunoassay	Sample site: AN
	Days since symptom onset (if applicable): NA	Target antigen: NR	Type of swab: NR
		COI: NR	Transport media: NR
		Turnaround time: NR	Self vs HCW: Supervised Self
		Sample site: NP	
		Type of swab: NR	

		Transport media: NR HCW collection: No Sampling sequence: same time	
Author, year: Fourati 2021 [29] Country: France Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 634 Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): NR	Test name(s): Multiple EUA certified: No CE certified: Yes Platform: Lateral Flow Assay Target antigen: NR COI: NR	Test name(s): RealStar SARS-CoV2 RT PCR Kit 1.0, AltoNR Diagnostics GmbH, Hamburg, Germany Target gene: NR Ct threshold: 31 Sample site: NP Type of swab: NR Transport media: NR

		Turnaround time: 30min Standard Q, Abbott Panbio 15-20min, all others 15min Sample site: NP Type of swab: NR Transport media: NR HCW collection: Yes Sampling sequence: NR	Self vs HCW:
Author, year: Fourati 2022 [30] Country: France Study Design: Non-randomized/ observational	Number of patients: 1763 Age: NR Gender (%male): NR	Test name(s): VITROS EUA certified: No CE certified: Yes	Test name(s): commercially available NAAT (TMA-based Aptima™ SARS CoV-2 Assay, Hologic, San Diego, California; or PCRbased Alinity m® SARS CoV-2 Assay Abbott, Germany). Target gene: NR Ct threshold: 35

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study with comparator (e.g. case control)	Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): NR	Platform: chemiluminescent immunoassay (CLIA) Target antigen: NR COI: NR Turnaround time: 48min Sample site: NP Type of swab: NR Transport media: NR HCW collection: NR Sampling sequence: NR	Sample site: NP Type of swab: NR Transport media: NR Self vs HCW: NR
	Number of patients: 5869	Test name(s): Innova	Test name(s): TaqPath COVID-19 Kit

Author, year: García-Fiñana 2021 [31] Country: UK Study Design: Non- randomized/ observational study with comparator (e.g. case control)	Age: mean 50 SD 18 Gender (%male): 2700 (46%) Symptomatic or Asymptomatic or Mix: Asymptomatic Days since symptom onset (if applicable): NA	EUA certified: Yes CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: NR COI: NR Turnaround time: 30min Sample site: Throat + nose Type of swab: NR Transport media: NR	Target gene: NR Ct threshold: Sample site: Throat and nose combo Type of swab: NR Transport media: NR Self vs HCW: Supervised Self
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		HCW collection: No Sampling sequence: NR	
Author, year: Gili 2021 [32] Country: Italy Study Design: Non-randomized/observational study with comparator (e.g. case control)	Number of patients: 226 Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NR	Test name(s): Lumipulse G EUA certified: No CE certified: Yes Platform: chemiluminescent enzyme immunoassay (CLEIA) Target antigen: NR COI: 1.340 ng/ml Turnaround time: NR Sample site: NP	Test name(s): Allplex 2019-nCoV assay Target gene: NR Ct threshold: 40 Sample site: NP Type of swab: NR Transport media: NR Self vs HCW: NR

		Type of swab: NR Transport media: NR HCW collection: NR Sampling sequence: NR	
Author, year: González-Donapetry 2021 [33] Country: Spain Study Design: Non-randomized/observational study with	Number of patients: 440 Age: Median: 3 IQR: (1–7) Gender (%male): 59.1% Symptomatic or Asymptomatic or Mix: Symptomatic	Test name(s): Panbio EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: NR	Test name(s): Allplex 2019-nCoV assay Target gene: NR Ct threshold: 40 Sample site: NP Type of swab: NR

comparator (e.g. case control)	Days since symptom onset (if applicable): Median of 1 (IQR:1-3)	COI: 1.340 ng/ml Turnaround time: NR Sample site: NP Type of swab: NR Transport media: NR HCW collection: NR Sampling sequence: NR	Transport media: NR Self vs HCW: NR
Author, year: Hagbom 2022 [34]	Number of patients: 39 Age: Median 57.0 range (32–84)	Test name(s): BTNX EUA certified: No	Test name(s): QIAmp Viral RNR kit Target gene: NR

Country: Sweden Study Design: Non-randomized/observational study with comparator (e.g. case control)	Gender (%male): 28 (71.8%) Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): Median 11.0 Range(5–30)	CE certified: Yes Platform: immunochromatographic assay Target antigen: NR COI: NR Turnaround time: 15min Sample site: saliva Type of swab: NR Transport media: NR HCW collection: Yes	Ct threshold: NR Sample site: saliva Type of swab: NR Transport media: NR Self vs HCW: NR
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		Sampling sequence: NR	
Author, year: Harris 2021 [35]	Number of patients: 2436	Test name(s): Sofia	Test name(s): CDC 2019–Novel Coronavirus (2019-nCoV) Real-Time RT-PCR Diagnostic Panel
Country: USA	Age: NR	EUA certified: No	Target gene: NR
Study Design: Non-randomized/observational study with comparator (e.g. case control)	Gender (%male): NR	CE certified: Yes	Ct threshold: 20-23
	Symptomatic or Asymptomatic or Mix: Mix	Platform: Fluorescent Immunoassay (FIA)	Sample site: NP
	Days since symptom onset (if applicable): NA	Target antigen: NR	Type of swab: NR
		COI: NR	Transport media: NR
		Turnaround time: NR	Self vs HCW: HCW
		Sample site: AN	
		Type of swab: Dry swabs	

		Transport media: NR HCW collection: No Sampling sequence: PCR first	
Author, year: Hirotsu 2021 [36] Country: Japan Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 637 Age: Gender (%male): Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable):	Test name(s): Lumipulse G EUA certified: No CE certified: Yes Platform: chemiluminescent enzyme immunoassay (CLEIA) Target antigen: NR COI: NR	Test name(s): StepOnePlus Real-Time PCR System Target gene: nucleocapsid gene of SARS-CoV-2 (NC_045512.2) Ct threshold: NR Sample site: NP Type of swab: cotton swabs Transport media: VTM

		Turnaround time: NR Sample site: NP Type of swab: cotton swabs Transport media: VTM HCW collection: NR Sampling sequence: NR	Self vs HCW: HCW
Author, year: Holzner 2021 [37] Country: Germany Study Design: Non-randomized/ observational	Number of patients: 2375 Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Mix	Test name(s): Standard Q EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay	Test name(s): Alinity in the SARS-CoV-2 assay (Abbott), Cepheid (GeneXpert), and RealStar SARS-CoV-2RT-PCR (AltoNR Diagnostics). Target gene: NR Ct threshold: 30 Sample site: NP

study with comparator (e.g. case control)	Days since symptom onset (if applicable): NA	Target antigen: NR COI: NR Turnaround time: 15-30min Sample site: NP Type of swab: NR Transport media: NR HCW collection: Yes Sampling sequence: 1st	Type of swab: NR Transport media: NR Self vs HCW: HCW
Author, year: Homza 2021 [38]	Number of patients: 494	Test name(s): Ecotest	Test name(s): Multiplex RT-PCR Kit (DiaNR Biotechnologies, Czech Republic)

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Country: Czech Republic Study Design: Non-randomized/observational study with comparator (e.g. case control)	Age: mean age: 42.2±15.1years (min. 7; max. 81) Gender (%male): Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NR	EUA certified: No CE certified: Yes Platform: Lateral flow immunoassay Target antigen: NR COI: NR Turnaround time: NR Sample site: NP Type of swab: NR Transport media: Medium supplied with the antigen test HCW collection: Yes	Target gene: genes coding the Spike protein and EndoRNase. Ct threshold: NR Sample site: NP Type of swab: Transport media: Medium supplied with the antigen test Self vs HCW: HCW
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Supplementary Materials

		Sampling sequence: 1st	
Author, year: Ifko 2021 [39] Country: Slovenia and Croatia Study Design: Non-randomized/observational study with comparator (e.g. case control)	Number of patients: 455 Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): <5 days	Test name(s): ALLTEST EUA certified: No CE certified: Yes - NADAL and Alltest Platform: Lateral flow assay Target antigen: NR COI: NR Turnaround time: NR Sample site: NP	Test name(s): Seegene Allplex 2019-nCoV test, Cobas 6800 SARSCoV-2 Test, SARS-CoV-2 RT-PCR assay (PCRBiosystems Ltd, London, UK), Target gene: NR Ct threshold: NR Sample site: NP Type of swab: NR Transport media: NR Self vs HCW: HCW

		Type of swab: NR Transport media: NR HCW collection: NR Sampling sequence: 1st	
Author, year: Ishii 2021 [40] Country: Japan Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 486 Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NR	Test name(s): Lumipulse G EUA certified: No CE certified: Yes Platform: chemiluminescent enzyme immunoassay (CLEIA) Target antigen: NR COI: NR	Test name(s): TaqPath COVID-19 Kit Target gene: NR Ct threshold: 35 Sample site: NP and saliva Type of swab: NR Transport media: NR

		Turnaround time: NR Sample site: NP Type of swab: NR Transport media: NR HCW collection: NR Sampling sequence: NR	Self vs HCW: HCW
Author, year: Jakobsen 2021 [41] Country: Denmark	Number of patients: 4811 Age: median age: 45 years (interquartile range: 30-56) Gender (%male): 47	Test name(s): Standard Q EUA certified: No CE certified: Yes	Test name(s): LuNR Universal Probe One-step RT-qPCR kit Target gene: NR Ct threshold: 10-38 Sample site: OP

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Study Design: Non-randomized/observational study with comparator (e.g. case control)	Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NR	Platform: Lateral flow immunochromatographic assay Target antigen: NR COI: NR Turnaround time: NR Sample site: NP Type of swab: NR Transport media: NR HCW collection: NR Sampling sequence: 2nd	Type of swab: NR Transport media: NR Self vs HCW: HCW
	Number of patients: 2339	Test name(s): BinaxNow	

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Author, year: James 2022 [42] Country: Arkansas, USA Study Design: Non-randomized/observational study with comparator (e.g. case control)	Age: (median, 37 years) age range 16-98 Gender (%male): NR Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NR	EUA certified: Yes CE certified: No Platform: lateral flow immunoassay Target antigen: nucleocapsid protein antigen COI: NR Turnaround time: NR Sample site: AN Type of swab: NR Transport media: NR	Test name(s): PerkinElmer SARS-CoV-2 real-time RT-PCR assay. Target gene: N and Orf1 gene Ct threshold: 42 Sample site: AN Type of swab: flocked swab Transport media: NR Self vs HCW: HCW
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		HCW collection: NR Sampling sequence: random	
Author, year: Kahn 2021 [43] Country: Germany Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 3630 Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable):	Test name(s): Standard F EUA certified: No CE certified: Yes Platform: Fluorescent Immunoassay (FIA) Target antigen: SARS-CoV-2 nucleoprotein COI: 1 Turnaround time: NR Sample site: OP	Test name(s): cobas SARS-CoV2 (Roche), Aptima SARSCoV2 assay (Hologic), GeneXpert SARS-CoV2 (Cepheid), RealStar SARS-CoV2-RT-PCR kit (Altona). Target gene: NR Ct threshold: NR Sample site: OP Type of swab: NR Transport media: NR Self vs HCW: HCW

		Type of swab: NR Transport media: NR HCW collection: NR Sampling sequence: 1st	
Author, year: Kernéis 2021 [44] Country: Germany Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 1041 Age: median 36 [IQR 26–50] Gender (%male): 696 (48%) Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NR	Test name(s): Standard Q EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: Nucleocapsid	Test name(s): TaqPath™ COVID 19 CE IVD RT PCR Kit Target gene: NR Ct threshold: NR Sample site: NP Type of swab: NR Transport media: NR

		COI: NR Turnaround time: 15-30min Sample site: NP Type of swab: NR Transport media: NR HCW collection: Yes Sampling sequence: NR	Self vs HCW: HCW
Author, year: Kim 2021 [45] Country: India, Korea	Number of patients: 330 Age: NR Gender (%male): NR	Test name(s): GenBody EUA certified: Yes CE certified: Yes	Test name(s): Allplex 2019-nCOV in Korea, EURORealTime SARS-CoV-2 in India Target gene: NR Ct threshold: 30

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Study Design: Non-randomized/observational study with comparator (e.g. case control)	Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NR	Platform: Immunochromatographic assay Target antigen: Nucleocapsid COI: NR Turnaround time: NR Sample site: NP Type of swab: NP Transport media: VTM HCW collection: NR Sampling sequence: PCR first	Sample site: NP Type of swab: Same as index Transport media: VTM Self vs HCW: HCW

Author, year: Kim 2022 [46] Country: Korea Study Design: Non-randomized/observational study with comparator (e.g. case control)	Number of patients: 165 Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NR	Test name(s): Standard Q EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: NR COI: NR Turnaround time: NR Sample site: NP Type of swab: NR Transport media: VTM	Test name(s): Allplex 2019-nCoV Target gene: RdRp, N genes Ct threshold: 30 Sample site: NP Type of swab: NR Transport media: VTM Self vs HCW: NR
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		HCW collection: NR Sampling sequence: PCR first	
Author, year: Klajmon 2022 [47] Country: Poland Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 192 Age: mean age was 64.7 years (± 13.9). Gender (%male): NR Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): NR	Test name(s): Humasis EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: NR COI: NR Turnaround time: 15min	Test name(s): Vitassay qPCR SARS-CoV-2 kit Target gene: ORF1ab, N Ct threshold: 35 Sample site: NP Type of swab: NR Transport media: Nucliswab standard transport media Self vs HCW: NR

		Sample site: NP Type of swab: Flocked swab Transport media: Nucliswab standard transport media HCW collection: NR Sampling sequence: NR	
Author, year: Klein 2021 [48] Country: Germany Study Design: Non-randomized/ observational study with	Number of patients: 290 Age: average age of 42.7 years (standard deviation (SD) 14.6) Gender (%male): NR Symptomatic or Asymptomatic or Mix: Mix	Test name(s): Panbio EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay	Test name(s): Abbott Panbio HCW collected NP swab Target gene: E and N Ct threshold: NR Sample site: NP Type of swab: IMPROSWAB

comparator (e.g. case control)	Days since symptom onset (if applicable): NA	Target antigen: NR COI: NR Turnaround time: NR Sample site: Both AN and NP (Compared) Type of swab: Multiple Transport media: NR HCW collection: Yes - NP Sampling sequence: NR	Transport media: NR Self vs HCW: HCW
Author, year: Kolwijck 2021 [49]	Number of patients: 825 Age: >16	Test name(s): Panbio EUA certified: No	Test name(s): Abbott Panbio HCW collected NP swab Target gene: E and N

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Country: Netherlands Study Design: Non-randomized/observational study with comparator (e.g. case control)	Gender (%male): NR Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): NA	CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: NR COI: NR Turnaround time: NR Sample site: Both AN and NP (Compared) Type of swab: Multiple Transport media: NR HCW collection: Yes - NP	Ct threshold: NR Sample site: NP Type of swab: IMPROSWAB Transport media: NR Self vs HCW: HCW
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		Sampling sequence: NR	
Author, year: Koskinen 2021 [50]	Number of patients: 259 Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): NR	Test name(s): MariPoc EUA certified: Yes CE certified: Yes Platform: Enzyme immunoassay (EIA) Target antigen: Nucleaoprotени COI: NR Turnaround time: 20-55 min Sample site: NP Type of swab: NR	Test name(s): Allplex™ 2019-nCoV RT-PCR assay Target gene: E, N and RdRP gene Ct threshold: 25 Sample site: NP Type of swab: NR Transport media: Saline, and dry Self vs HCW: NR

		Transport media: Saline, and dry HCW collection: NR Sampling sequence: PCR first	
Author, year: Krüger 2021 [51] Country: Germany Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 1108 Age: Mean 39.4 (14.1) Gender (%male): 551 (49.3%) Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): average 4.01 (SD 3)	Test name(s): Panbio EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: NR COI: NR	Test name(s): Allplex SARS-CoV-2 Assay, the cobas1 6800 or 8800 system Target gene: NR Ct threshold: 30 Sample site: NP, OP Type of swab: NR Transport media: NR Self vs HCW: HCW

		Turnaround time: 15 minutes Sample site: NP Type of swab: NR Transport media: NR HCW collection: Yes Sampling sequence: PCR first	
Author, year: Kumar 2021 [52] Country: India Study Design: Non-randomized/ observational study with	Number of patients: 204 Age: Mean age of the study population was 51.44 years (standard deviation = 16.501 years) Gender (%male): 119 (58.3)	Test name(s): Standard Q EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay	Test name(s): CFX96 real time PCR (Bio Rad). Target gene: NR Ct threshold: 40 Sample site: NP and throat

Supplementary Materials

comparator (e.g. case control)	Symptomatic or Asymptomatic or Mix: Asymptomatic Days since symptom onset (if applicable): NA	Target antigen: Nucleocapsid proteins COI: NR Turnaround time: 30 min Sample site: NP and throat Type of swab: NR Transport media: VTM HCW collection: Unclear Sampling sequence: NR	Type of swab: NR Transport media: VTM Self vs HCW: HCW
Author, year: Landaas 2021 [53]	Number of patients: 3991	Test name(s): Panbio	Test name(s): Aria Dx Real-Time PCR System; Cobas® SARS-CoV-2 kit on the Cobas® 6800 system

Country: Norway Study Design: Non-randomized/observational study with comparator (e.g. case control)	Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable):	EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: Nucleocapsid proteins COI: NR Turnaround time: NR Sample site: NP/throat Type of swab: NR Transport media: NR HCW collection: Yes	Target gene: NR Ct threshold: 30 Sample site: NP/throat Type of swab: NR Transport media: NR Self vs HCW: HCW
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		Sampling sequence: NR	
Author, year: Leber 2021 [54] Country: Austria Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 1037 Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): >1 day	Test name(s): Multiple EUA certified: No CE certified: Yes Platform: Lateral flow Assay Target antigen: NR COI: NR Turnaround time: NR Sample site: NP	Test name(s): Roche LightCycler (http://www.roche.com; Switzerland), BD MAXTM System using original SARS-CoV2 reagents of BD Target gene: NR Ct threshold: 40 Sample site: NR Type of swab: NP Transport media: NR Self vs HCW: NR

		Type of swab: NR Transport media: NR HCW collection: Yes Sampling sequence: NR	
Author, year: Leixner 2021 [55] Country: Austria Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 392 Age: 70 (55-80) median (25th–75th percentiles) Gender (%male): 200 (51%) Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): 1 (0-3) median (25th–75th percentiles)	Test name(s): AMP EUA certified: No CE certified: Yes Platform: chromatographic immunoassay Target antigen: NR COI: NR	Test name(s): cobas® Liat®, GeneXpert®, Liason® MDX, BD Max™, cobas® z480 MagNR Pure 24 Target gene: E, ORF1a/b, E, N2, S, ORF1a/b, N1, N2, E Ct threshold: 30 Sample site: NP/OP Type of swab: NR Transport media: NR

		Turnaround time: NR Sample site: NP Type of swab: NR Transport media: NR HCW collection: Yes Sampling sequence: same time	Self vs HCW: HCW
Author, year: Leli 2021 [56] Country: Italy Study Design: Non-randomized/	Number of patients: 792 Age: median age was 71 years (IQR: 53–82.7) Gender (%male): 403 (50.9%)	Test name(s): LumiraDx EUA certified: No CE certified: Yes	Test name(s): NR Target gene: NR Ct threshold: 35 Sample site: NP

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observational study with comparator (e.g. case control)	Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NR	Platform: fluorescence immunoassay (FIA) Target antigen: Nucleocapsid protein COI: NR Turnaround time: NR Sample site: NP Type of swab: standard dry swab Transport media: Universal Transport Medium for Viruses, Chlamydia, Mycoplasma, and Ure- aplasma (Copan UTM®system; Copan, Italy). HCW collection: Unclear Sampling sequence: same time	Type of swab: NR Transport media: Universal Transport Medium for Viruses, Chlamydia, Mycoplasma, and Ure- aplasma (Copan UTM®system; Copan, Italy). Self vs HCW: NR

Author, year: Masiá 2021 [57] Country: Study Design:	Number of patients: 913 Age: 40.6 (23–55.6) median (Q1–Q3) Gender (%male): 80 (22.2%) Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NR	Test name(s): Panbio EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: COI: NR Turnaround time: NR Sample site: NP Type of swab: NR Transport media: NR	Test name(s): LightMix Modular SARS-CoV (COVID19) E gene; TIB MOLBIOL, Berlin, Germany, distributed by Roche Target gene: E gene Ct threshold: 35 Sample site: NP Type of swab: NR Transport media: NR Self vs HCW: HCW
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		HCW collection: Yes Sampling sequence: same time	
Author, year: Mboumba 2021 [58] Country: France Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 100 Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): NR	Test name(s): Sienna-Clarity EUA certified: No CE certified: Yes Platform: Lateral Flow Assay Target antigen: NR COI: NR Turnaround time: NR	Test name(s): CE IVD-marked Allplex™ 2019-nCoV Assay (Seegene, Séoul, Korée) Target gene: (E, RdRP and N genes) Ct threshold: 33 Sample site: NP Type of swab: NR Transport media: NR Self vs HCW: NR

		Sample site: NP Type of swab: NR Transport media: NR HCW collection: Unclear Sampling sequence: NR	
Author, year: Merino 2021 [59] Country: Spain Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 958 Age: 40 (32) median (interquartile range) Gender (%male): 371 (38.7%) Symptomatic or Asymptomatic or Mix: Mix	Test name(s): Panbio EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen:	Test name(s): TaqMan™ 2019-nCoV assay (Applied Biosystems, Pleasanton, CA, USA), Allplex™ 2019-nCoV Assay (Seegene, Seoul, South Korea), GENOMICA S.A.U. (Madrid, Spain), SARSCOV-2 Real Time PCR KIT (Viracell, Granada, Spain), TaqPath COVID- 19 Combo Kit (Thermo Fisher, Target gene: NR Ct threshold: 25

	Days since symptom onset (if applicable): NR	COI: NR Turnaround time: NR Sample site: NP Type of swab: swab provided by PanbioRT Transport media: NR HCW collection: Yes Sampling sequence: same time	Sample site: NP Type of swab: NR Transport media: NR Self vs HCW: HCW
Author, year: Merino-Amador 2021 [60] Country: Spain	Number of patients: 450 Age: 65 (44) median (interquartile range)	Test name(s): CLINITEST EUA certified: No	Test name(s): Allplex™ 2019-nCoV Assay (Seegene, Seoul, South Korea), GENOMICA S.A.U. (Madrid, Spain), TaqPath COVID-19 Combo Kit (Thermo Fisher, Waltham, MA, USA), GeneXpert (Cepheid, Sunnyvale, CA, USA), and Cobas 6800

Study Design: Non-randomized/observational study with comparator (e.g. case control)	Gender (%male): 187 (42%) Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NA	CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: nucleocapsid protein COI: NR Turnaround time: NR Sample site: NP Type of swab: swab provided by ClinitestRT Transport media: NR HCW collection: Yes Sampling sequence: same time	Target gene: NR Ct threshold: 25 Sample site: NP Type of swab: NR Transport media: NR Self vs HCW: HCW
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Author, year: Mitchell 2021 [61] Country: US Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 148 symptomatic and 144 asymptomatic adults Age: mean, range 44.1 (18–83) Gender (%male): Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NR	Test name(s): Sofia EUA certified: CE certified: Yes Platform: Fluorescent Immunoassay (FIA) Target antigen: nucleocapsid antigen COI: NR Turnaround time: NR Sample site: Nasal Type of swab: NR	Test name(s): Cepheid Xpert Xpress SARS-CoV-2/Flu/RSV RT-PCR (Cepheid). Target gene: NR Ct threshold: NR Sample site: NP Type of swab: NR Transport media: NR Self vs HCW: HCW
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		Transport media: NR HCW collection: Y Sampling sequence: 2nd	
Author, year: Møller 2022 [62] Country: Denmark Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 827 Age: NR Gender (%male): 409 (49%) Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NR	Test name(s): Multiple EUA certified: No CE certified: Yes Platform: Lateral Flow Assay Target antigen: NR COI: NR Turnaround time: NR	Test name(s): NR Target gene: NR Ct threshold: NR Sample site: OP Type of swab: NR Transport media: NR Self vs HCW: HCW

		Sample site: Nasal Type of swab: NR Transport media: NR HCW collection: No Sampling sequence: PCR first	
Author, year: Montalvo 2021 [63] Country: Study Design: Non-randomized/observational study with	Number of patients: 523 Age: mean = 36.71, range 5 months to 96 years Gender (%male): Symptomatic or Asymptomatic or Mix: Mix	Test name(s): Elecsys EUA certified: No CE certified: Yes Platform: electrochemiluminescence immunoassay (ECLIA)	Test name(s): STAT-NAT® COVID-19 MULTI (SENTINEL Diagnostic) multiplex assay Target gene: RdRP and ORF1b genes Ct threshold: 40 Sample site: NP

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comparator (e.g. case control)	Days since symptom onset (if applicable): NR	Target antigen: NR COI: 1 Turnaround time: NR Sample site: NP Type of swab: NR Transport media: NR HCW collection: Unclear Sampling sequence: NR	Type of swab: NR Transport media: NR Self vs HCW: NR
Author, year: Mungomklang 2021 [64]	Number of patients: 1100 Age: Median 33.39 (range 13–60)	Test name(s): Standard Q EUA certified: No	Test name(s): CFX96 Touch instrument with T1000 Thermocycler (Bio-Rad, Hercules, CA) Target gene: ORF1ab

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Country: Thailand Study Design: Non-randomized/observational study with comparator (e.g. case control)	Gender (%male): 618 (56.18%) Symptomatic or Asymptomatic or Mix: Asymptomatic Days since symptom onset (if applicable): NA	CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: NR COI: NR Turnaround time: NR Sample site: NP Type of swab: NR Transport media: 2 mL of viral transport media (VTM) HCW collection: Unclear	Ct threshold: 40 Sample site: NP Type of swab: Same as index Transport media: 2 mL of viral transport media (VTM) Self vs HCW: Same as index
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		Sampling sequence: NR	
Author, year: Murillo-Zamora 2021 [65] Country: Study Design:	Number of patients: 15408 Age: mean age ($\pm$ standard deviation) was 47.2 ± 18.5 years. Gender (%male): Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): 3.4 ± 1.3 and 3.3 ± 1.3 for RT-PCR and antigen-based testing, respectively	Test name(s): Multiple EUA certified: No CE certified: Yes Platform: Multiple Target antigen: Multiple COI: Multiple Turnaround time: NR Sample site: NP	Test name(s): 7500 Fast RealTime PCR System Target gene: NR Ct threshold: NR Sample site: NP Type of swab: Same as index Transport media: NR Self vs HCW: Same as index

		Type of swab: NR Transport media: NR HCW collection: Unclear Sampling sequence: NR	
Author, year: Nikolai 2021 [66] Country: Germany Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 228 Age: average 34.6 Gender (%male): NR Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): Average 3.4 days (SD 3.0).	Test name(s): Standard Q EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: NR COI: NR	Test name(s): NR Target gene: NR Ct threshold: NR Sample site: NR Type of swab: NR Transport media: NR

		Turnaround time: NR Sample site: Multiple Type of swab: NR Transport media: NR HCW collection: Yes Sampling sequence:	Self vs HCW: HCW
Author, year: Nörz 2021 [67] Country: Germany Study Design: Non-	Number of patients: 3139 Age: NR Gender (%male): NR	Test name(s): Elecsys EUA certified: No CE certified: Yes	Test name(s): the cobas[®] 6800 system (Roche Molecular Systems, Inc., Branchburg, NJ, USA) Target gene: E gene Ct threshold: 33

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randomized/ observational study with comparator (e.g. case control)	Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): Multiple	Platform: electrochemiluminescence immunoassay (ECLIA) Target antigen: NR COI: NR Turnaround time: as low as 18 min Sample site: NP+OP Type of swab: Flocked swab Transport media: UTM HCW collection: Unclear Sampling sequence: NR	Sample site: NP Type of swab: NR Transport media: UTM Self vs HCW: NR
	Number of patients: 1186	Test name(s): Multiple	Test name(s): Taqman 7500 (Thermo Fisher Scientific, Waltham, USA), and the

Author, year: Osterman 2021 [68] Country: Germany Study Design: Non-randomized/observational study with comparator (e.g. case control)	Age: adults and pediatric Gender (%male): NR Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): NR	EUA certified: No CE certified: Yes Platform: Multiple Target antigen: NR COI: NR Turnaround time: Mutiple Sample site: NP+OP Type of swab: eSwab™ (Copan Diagnostics, Murrieta, California, USA), ImproViral™ (Improve Medical, Guangzhou, Republic of China), dry swabs inserted into sterile 0.9% NaCl,	Xpert Xpress SARS-CoV-2 run on the GeneXpert System. Target gene: N, RdRp Ct threshold: NR Sample site: NP+OP Type of swab: same as index Transport media: VTM Self vs HCW: same as index
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		Transport media: VTM HCW collection: Yes Sampling sequence: NR	
Author, year: Paul 2021 [69] Country: India Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 148 Age: Median 35 (IQR 12-87) Gender (%male): 99/148 Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NR	Test name(s): VITROS EUA certified: No CE certified: Yes Platform: chemiluminescent immunoassay (CLIA) Target antigen: NR COI: NR Turnaround time: NR	Test name(s): RT-PCr Target gene: E and S gene Ct threshold: 35 Sample site: NP+OP Type of swab: same as index Transport media: VTM Self vs HCW: same as index

		Sample site: NP+OP Type of swab: NR Transport media: VTM HCW collection: Yes Sampling sequence: NR	
Author, year: Peacock 2022 [70] Country: Study Design:	Number of patients: 753 Age: 47 (16.6) Gender (%male): 313 (42.6%) Symptomatic or Asymptomatic or Mix: Mix	Test name(s): BinaxNow EUA certified: Yes CE certified: No Platform: lateral flow immunoassay	Test name(s): Abbott RealTimeSARS-CoV-2 test Ct≥23 Target gene: NR Ct threshold: 23 Sample site: NP Type of swab: NR

	Days since symptom onset (if applicable): NA	Target antigen: NR COI: NR Turnaround time: 15 minutes Sample site: MT Type of swab: NR Transport media: NR HCW collection: Yes Sampling sequence: NR	Transport media: NR Self vs HCW: NR
Author, year: Peña 2021 [71] Country: Chile	Number of patients: 842 Age: mean age: 36.67 years; SD: 16.48 years	Test name(s): SD Biosensor EUA certified: Yes	Test name(s): GenomeCov19 Detection Kit ABM Target gene: N and S gene

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Study Design: Non-randomized/observational study with comparator (e.g. case control)	Gender (%male): 429 (51.0%) Symptomatic or Asymptomatic or Mix: Asymptomatic Days since symptom onset (if applicable): NA	CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: COI: NR Turnaround time: NR Sample site: NP Type of swab: NR Transport media: None HCW collection: Yes	Ct threshold: 40 Sample site: NP Type of swab: NR Transport media: None Self vs HCW: HCW
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		Sampling sequence: NR	
Author, year: Pérez-García 2021a [72]	Number of patients: 356 Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): Mutiple	Test name(s): Multiple EUA certified: No CE certified: Yes Platform: Multiple Target antigen: NR COI: NR Turnaround time: NR Sample site: NP Type of swab: NR	Test name(s): Allplex SARS-CoV-2 assay (Seegene, which detected SARS-CoV-2 E, N and RdRP genes), Viasure SARS-CoV-2RealTime PCR Detection Kit (Certest Biotech S.L.; detected genes: ORF1ab and N)and GeneFinder COVID-19 Plus RealAmp Kit (Osang Healthcare Co.; detected ge Target gene: Multiple Ct threshold: Sample site: NP Type of swab: NR Transport media: UTM Self vs HCW: NR

		Transport media: UTM HCW collection: Unclear Sampling sequence: NR	
Author, year: Pérez-García 2021b [73] Country: Spain Study Design: Non- randomized/ observational study with comparator (e.g. case control)	Number of patients: 320 Age: media 51 (IQR 38-68) Gender (%male): 89 (52.4%) Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NA	Test name(s): Multiple EUA certified: No CE certified: Yes Platform: NR Target antigen: NR COI: NR	Test name(s): three RealTime PCR platforms: Viasure SARS-CoV-2 Real Time PCR Detection Kit (Certest Biotech S.L., Zaragoza, Spain; which detected SARS-CoV-2 ORF1ab and N genes), Allplex SARS-CoV-2 assay (Seegene, Seoul, South Korea; detected genes: E, RdRP, S and N) Target gene: Assay dependant Ct threshold: NR Sample site: same as index

		Turnaround time: NR Sample site: NP Type of swab: NR Transport media: UTM HCW collection: Unclear Sampling sequence: NR	Type of swab: same as index Transport media: UTM Self vs HCW: same as index
Author, year: Pettonet 2022 [74] Country: France Study Design: Non-randomized/observational	Number of patients: 242 Age: median 57 (IQR 40-68) Gender (%male): 129/242 Symptomatic or Asymptomatic or Mix: Mix	Test name(s): Multiple EUA certified: No CE certified: Yes Platform: Multiple	Test name(s): Cobas® SARS-CoV-2 (Roche Diagnostics, Branchburg, NJ, USA), Simplexa™ COVID-19 Direct (DiaSorin, Saluggia, Italy), BioFire® SARS-CoV-2 (BioMerieux, Salt Lake City, UT, USA), and NeumoDX® SARS-CoV-2 (QIAgen, Hilden, Germany). Target gene: S, RdRp Ct threshold: NR

study with comparator (e.g. case control)	Days since symptom onset (if applicable): NA	Target antigen: NR COI: NR Turnaround time: NR Sample site: NP Type of swab: NR Transport media: VTM HCW collection: Unclear Sampling sequence: NR	Sample site: NP Type of swab: NR Transport media: VTM Self vs HCW: same as index
Author, year: Pilarowski 2021 [75]	Number of patients: 3302	Test name(s): BinaxNow	Test name(s): RenegadeBio using RenegadeXPTM technology.

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Country: USA Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Age: 99 were aged <13 years, 110 aged 13 to 18 years, and 3093 aged >18 years. Gender (%male): Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NA	EUA certified: Yes CE certified: No Platform: lateral flow immunoassay Target antigen: NR COI: NR Turnaround time: NR Sample site: AN Type of swab: NR Transport media: NR HCW collection: Yes	Target gene: NR Ct threshold: NR Sample site: AN Type of swab: NR Transport media: NR Self vs HCW: HCW
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		Sampling sequence: Ag first	
Author, year: Pollock 2021 [76] Country: US Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 2482 Age: Any Gender (%male): NR Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NA	Test name(s): BinaxNow EUA certified: Yes CE certified: No Platform: lateral flow immunoassay Target antigen: NR COI: NR Turnaround time: 15 min Sample site: AN	Test name(s): CRSP SARS-CoV-2 Real-time Reverse Transcriptase (RT)-PCR Diagnostic Assay Target gene: N2 gene Ct threshold: 40 Sample site: an Type of swab: Same as index Transport media: NR Self vs HCW: HCW

		Type of swab: Nylon swab Transport media: NR HCW collection: Yes Sampling sequence: Antigen first	
Author, year: Pray, 2021 [77] Country: US Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 1105 Age: Range 17-64 Gender (%male): 41% Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): median 3 days (IQR 1-6), and in 72.4% ≤ 5 days	Test name(s): Sofia EUA certified: Yes CE certified: Yes Platform: Lateral Flow Assay Target antigen: Nucleocapsid COI: NR	Test name(s): CDC 2019-nCoV (University A) and Thermo Fisher TaqPath COVID-19 (University B) Target gene: N1 and N2 of NP (University A) and Thermo ORF1ab, NP and S (University B) Ct threshold: NR Sample site: MT Type of swab: NR

		Turnaround time: 15 minutes Sample site: MT Type of swab: Regular tipped flocked swab Transport media: dry swab HCW collection: Yes Sampling sequence: PCR first	Transport media: VTM Self vs HCW: HCW
Author, year: Prince-Guerra 2021 [78] Country: US Study Design: Non-	Number of patients: 3419 Age: Gender (%male):	Test name(s): BinaxNow EUA certified: Yes CE certified: No	Test name(s): CDC 2019-nCoV Real-Time RT-PCR Diagnostic Panel for detection of SARS-CoV-2 (5) (2,582 swabs) or the Fosun COVID-19 RT-PCR Detection Kit Target gene: NR Ct threshold: NR

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randomized/ observational study with comparator (e.g. case control)	Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NA	Platform: lateral flow immunoassay Target antigen: NR COI: NR Turnaround time: <30 minutes Sample site: AN Type of swab: NR Transport media: NR HCW collection: Yes Sampling sequence: Antigen first	Sample site: NP Type of swab: NR Transport media: NR Self vs HCW: HCW
	Number of patients: 1009	Test name(s): BioSpeedia	Test name(s): ABI7500 fast thermocycler (Thermofisher)

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Author, year: Quentin 2022 [79] Country: France Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Age: mean 3.7 (4.4) Gender (%male): 547 (54.3%) Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NA	EUA certified: No CE certified: Yes Platform: Lateral Flow Assay Target antigen: NR COI: NR Turnaround time: NR Sample site: NP Type of swab: Transport media:	Target gene: NR Ct threshold: NR Sample site: same as index Type of swab: same as index Transport media: NR Self vs HCW: HCW
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		HCW collection: Yes Sampling sequence: NR	
Author, year: Rahman 2021 [80] Country: Bangladesh Study Design:	Number of patients: 900 Age: median 35 SD 13.94 Gender (%male): Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): Any	Test name(s): Standard Q EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: NR COI: NR Turnaround time: 15-30 min Sample site: NP	Test name(s): CFX96 Touch™ Real-time PCR Detection System (Bio-Rad Laboratories, Inc., Hercules, CA, USA) w Target gene: RdRp, N Ct threshold: 37 Sample site: NP Type of swab: same as index Transport media: VTM Self vs HCW: same as index

		Type of swab: NR Transport media: VTM HCW collection: Unclear Sampling sequence: NR	
Author, year: Regev-Yochay 2022 [81] Country: NR Study Design: Non- randomized/ observational study with comparator (e.g. case control)	Number of patients: 5142 Age: Mean 56.7, median 50.1 Gender (%male): 2026 (41.97%) Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NR	Test name(s): Multiple EUA certified: CE certified: Yes Platform: Target antigen: NR	Test name(s): Allplex™ 2019-nCoV, NeuMoDx™ SARS-CoV-2 assay, Xpert® Xpress SARS-CoV-2 Target gene: NR Ct threshold: NR Sample site: NR Type of swab: NR

		COI: NR Turnaround time: NR Sample site: NR Type of swab: NR Transport media: NR HCW collection: Yes Sampling sequence: NR	Transport media: NR Self vs HCW: HCW
Author, year: Schuit 2021 [82] Country: Netherlands	Number of patients: 4645 Age: >16 years Gender (%male): 2153 (50%)	Test name(s): Multiple EUA certified: No CE certified: Yes	Test name(s): the cobas® SARS-CoV-2 test on the cobas® 8800 platform, cobas 6800® platform (Roche Diagnostics International, Rotkreuz, Switzerland). Target gene: NR Ct threshold: NR

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Study Design: Non-randomized/observational study with comparator (e.g. case control)	Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NR	Platform: NR Target antigen: NR COI: NR Turnaround time: NR Sample site: NP+OP Type of swab: NR Transport media: VTM HCW collection: Yes Sampling sequence: PCR first	Sample site: same as index Type of swab: same as index Transport media: VTM Self vs HCW: HCW

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Author, year: Shaikh 2021 [83] Country: USA Study Design: randomized/ observational study with comparator (e.g. case control)	Number of patients: 199 (subgroup: pediatrics) Age: 2 months - 20 years Gender (%male): Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): < 7 days	Test name(s): BinaxNow EUA certified: Yes CE certified: No Platform: lateral flow immunoassay Target antigen: NR COI: NR Turnaround time: NR Sample site: MT Type of swab: NR Transport media: NR	Test name(s): Roche Cobas or Hologic Panther platforms Target gene: NR Ct threshold: NR Sample site: NP Type of swab: NR Transport media: NR Self vs HCW: Yes
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		HCW collection: Yes Sampling sequence: NR	
Author, year: Siddiqui 2021 [84] Country: US Study Design: Non- randomized/ observational study with comparator (e.g. case control)	Number of patients: 6099 Age: ASx: 31 (26–41), range / Sx: 31 (26–40) Gender (%male): 48 Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): 3 (IQR, 4–5)	Test name(s): BinaxNow EUA certified: Yes CE certified: No Platform: lateral flow immunoassay Target antigen: nucleocapsid (N) protein COI: NR Turnaround time: 15 minutes	Test name(s): (CDC) 2019 Novel Coronavirus Real-Time RT- PCR Diagnostic Panel Target gene: viral N gene Ct threshold: 25 (24.5 for symptomatic and 27 for asymptomatic participants) Sample site: anterior nares Type of swab: NR Transport media: NR Self vs HCW: HCW

		Sample site: AN Type of swab: NR Transport media: NR HCW collection: yes Sampling sequence: 1st	
Author, year: Smith 2021 [85] Country: US Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 43 Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Mix	Test name(s): Sofia EUA certified: Yes CE certified: Yes Platform: Fluorescent Immunoassay (FIA) Target antigen: NR	Test name(s): NR Target gene: NR Ct threshold: NR Sample site: NP Type of swab: NR

	Days since symptom onset (if applicable): NR	COI: NR Turnaround time: NA Sample site: AN Type of swab: NR Transport media: HCW collection: yes Sampling sequence: NR	Transport media: NR Self vs HCW: HCW
Author, year: Tinker 2021 [86] Country: Georgia	Number of patients: 1540 Age: NR	Test name(s): BinaxNow EUA certified: Yes	Test name(s): CDC Influenza SARS-CoV-2 (Flu SC2) Multiplex Assay Target gene: NR Ct threshold: 40

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Study Design: Non-randomized/observational study with comparator (e.g. case control)	Gender (%male): Symptomatic or Asymptomatic or Mix: Asymptomatic Days since symptom onset (if applicable): NA	CE certified: No Platform: lateral flow immunoassay Target antigen: NR COI: NR Turnaround time: Students received BinaxNOW results after 15–30 minutes Sample site: AN Type of swab: NR Transport media: NR HCW collection: no Sampling sequence: random	Sample site: Anterior nasal Type of swab: NR Transport media: NR Self vs HCW: Supervised self
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Author, year: Tonen-Wolyec 2021 [87] Country: France Study Design: Non- randomized/ observational study with comparator (e.g. case control)	Number of patients: 106 Age: median age : 40 years, range 21 - 59 years Gender (%male): Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): 4	Test name(s): BIOSYNEX BSS EUA certified: No CE certified: Yes Platform: Immunochromatographic assay Target antigen: nucleocapsid protein COI: NR Turnaround time: Overall, the mean time of antigenic self-test performance (since the opening of the box until the migration step) was 8.1 (SD: 1.3) minutes Sample site: nasal mid-turbinate Type of swab: NR	Test name(s): BIOSYNEX AmpliQuick® SARS-CoV-2 (Biosynex Swiss SA) Target gene: gene (E), and RNA-dependent RNR polymerase gene (ORF1ab of RdRP gene) Ct threshold: NR Sample site: NP Type of swab: flocked swab Transport media: NR Self vs HCW: HCW
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		Transport media: NR HCW collection: no Sampling sequence: 1st	
Author, year: Turcato 2022 [88] Country: Switzerland Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 3899 Age: median (IQR) 69 (49–82) Gender (%male): Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): 2	Test name(s): Standard Q EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: NR COI: NR	Test name(s): XPRSARS-COV2-10 (Cepheid, CA, US). Target gene: NR Ct threshold: NR Sample site: NP Type of swab: Laboratory processed swab Transport media: Saline Self vs HCW: HCW

		Turnaround time: NA Sample site: NP Type of swab: NR Transport media: Saline HCW collection: yes Sampling sequence: 1st	
Author, year: Van der Moeren 2021(60) Country: Netherlands Study Design: Non- randomized/	Number of patients: 352 Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Symptomatic	Test name(s): BD Veritor EUA certified: Yes CE certified: Yes Platform: chromatographic digital immunoassay	Test name(s): Cobas 6800 (Roche) platform using Cobas1 SARS-CoV-2–192 PCR assay (Roche diagnostics), Target gene: RdRp and E-genes. Ct threshold: NR Sample site: NP

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observational study with comparator (e.g. case control)	Days since symptom onset (if applicable): NR	Target antigen: nucleocapsid protein COI: NR Turnaround time: The manual prescribes interpretation of the results after 15 minutes with a reading device provided by the manufacturer Sample site: nasal, throat Type of swab: NR Transport media: NR HCW collection: yes Sampling sequence: 2nd	Type of swab: NR Transport media: NR Self vs HCW: HCW
	Number of patients: 7005	Test name(s): BD Veritor	

Author, year: Venekamp 2022 [90] Country: Netherlands Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Age: mean 41.1 (16.3) Gender (%male): Symptomatic or Asymptomatic or Mix: Mix Days since symptom onset (if applicable): NR	EUA certified: No CE certified: Yes Platform: chromatographic digital immunoassay Target antigen: NR COI: NR Turnaround time: NA Sample site: OP-N Type of swab: NR Transport media: NR	Test name(s): Roche cobas 6800/8800 (Rotterdam and Breda, respectively) and ABI-7500 (Zwolle) for RT-PCR and the Hologic Panther system (Aptima SARS-CoV2 assay) Target gene: NR Ct threshold: NR Sample site: NP, OP-N Type of swab: NR Transport media: NR Self vs HCW: HCW
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		HCW collection: yes Sampling sequence: 1st	
Author, year: Villaverde 2021 [91] Country: Spain Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 1620 Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Symptomatic Days since symptom onset (if applicable): <5 days	Test name(s): Panbio EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: nucleocapsid protein COI: NR Turnaround time: NA Sample site: NP	Test name(s): NR Target gene: E and RdRp genes Ct threshold: NR Sample site: NP Type of swab: NR Transport media: NR Self vs HCW: HCW

		Type of swab: NR Transport media: NR HCW collection: yes Sampling sequence: 1st	
Author, year: von Ahnen 2021 [92] Country: Germany Study Design: Non-randomized/ observational study with comparator (e.g. case control)	Number of patients: 919 Age: mean 41.5 years (range 18–66) Gender (%male): 24 Symptomatic or Asymptomatic or Mix: Asymptomatic Days since symptom onset (if applicable): NA	Test name(s): Roche SD EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: nucleocapsid (N) antigen	Test name(s): Roche qPCR Target gene: N-Gen and E-Gen Ct threshold: 35 Sample site: NP Type of swab: NR Transport media: NR

		COI: NR Turnaround time: NA Sample site: NP Type of swab: NR Transport media: NR HCW collection: yes Sampling sequence: NR	Self vs HCW: HCW
Author, year: von Ahnen 2022 [93] Country: Germany	Number of patients: 919 Age: mean age: 41.5 years (range 18–66). Gender (%male): 24	Test name(s): Roche SD EUA certified: Yes CE certified:	Test name(s): Eruofins ViroBOAR kit Target gene: N-Gen Ct threshold: 35

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Study Design: Non-randomized/observational study with comparator (e.g. case control)	Symptomatic or Asymptomatic or Mix: Asymptomatic Days since symptom onset (if applicable): NA	Platform: Lateral flow immunochromatographic assay Target antigen: Nucleocapsid antigen COI: NR Turnaround time: NR Sample site: NP Type of swab: NR Transport media: NR HCW collection: Y Sampling sequence: NR	Sample site: NP Type of swab: NR Transport media: NR Self vs HCW: HCW

Author, year: Wachinger 2021 [94] Country: Germany Study Design: Non-randomized/observational study with comparator (e.g. case control)	Number of patients: 27421 Age: NR Gender (%male): NR Symptomatic or Asymptomatic or Mix: Asymptomatic Days since symptom onset (if applicable): NA	Test name(s): Standard Q EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: NR COI: NR Turnaround time: NA Sample site: NP Type of swab: NR Transport media: NR	Test name(s): TibMolbiol (Berlin, Germany), the Allplex SARS-CoV-2 Assay from Seegene (Seoul, South Korea) or the Abbott (Illinois, USA) RealTime 2019-nCoV assay Target gene: NR Ct threshold: 33 Sample site: NP Type of swab: NR Transport media: NR Self vs HCW: HCW
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		HCW collection: yes Sampling sequence: Antigen 1st	
Author, year: Winkel 2021 [95] Country: Netherlands Study Design: Non-randomized/observational study with comparator (e.g. case control)	Number of patients: 824 Age: median age : 27 years (range 16–80 years, IQR 21–40) Gender (%male): 94 Symptomatic or Asymptomatic or Mix: Asymptomatic Days since symptom onset (if applicable): NA	Test name(s): Panbio EUA certified: No CE certified: Yes Platform: Lateral flow immunochromatographic assay Target antigen: nucleocapsid (N) antigen COI: NR Turnaround time: Test results were recorded after 15min of assay initiation and documented by photograph.	Test name(s): Euro- fins (Brugge, Belgium; commercially available platform Viasure, CerTest Biotech, Spain, according to manufac- turer’s instructions, as well as laboratory-developed plat- form), Synlab Laboratories (Luik, Belgium; commercially available platform TaqP Target gene: NR Ct threshold: NR Sample site: NP and OP Type of swab: NR Transport media: NR

		Sample site: NP Type of swab: NR Transport media: NR HCW collection: yes Sampling sequence: 1st	Self vs HCW: HCW
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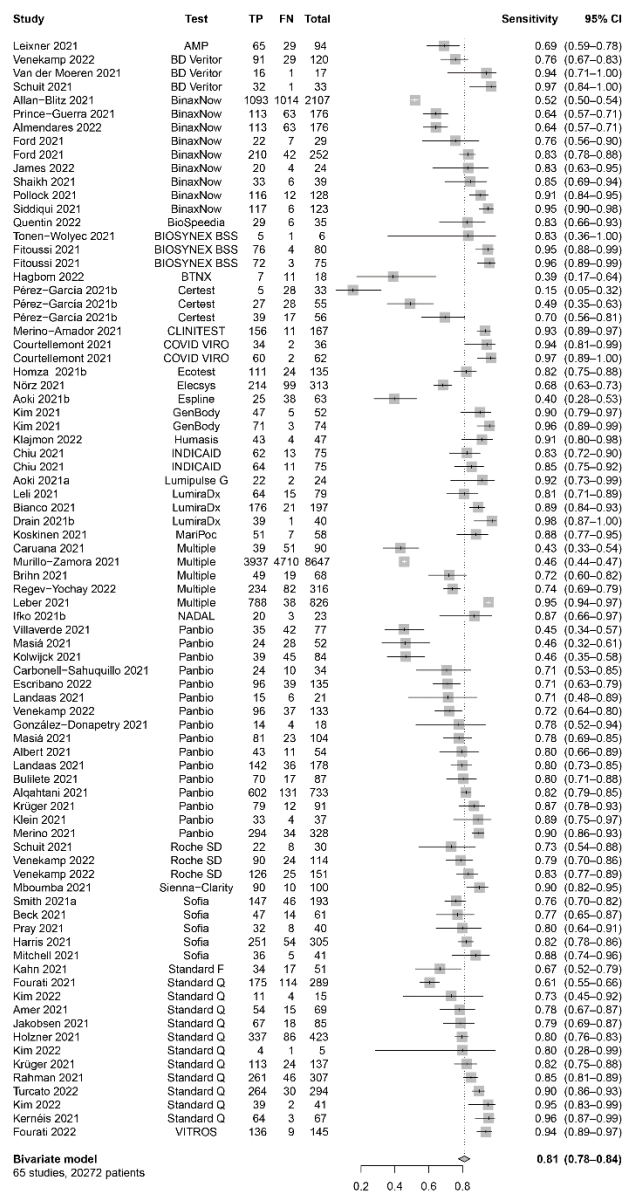
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Supplement B

Recommendation 1: For symptomatic individuals suspected of having COVID-19, the IDSA panel recommends a single Ag test over no test.
(strong recommendation, moderate certainty evidence)

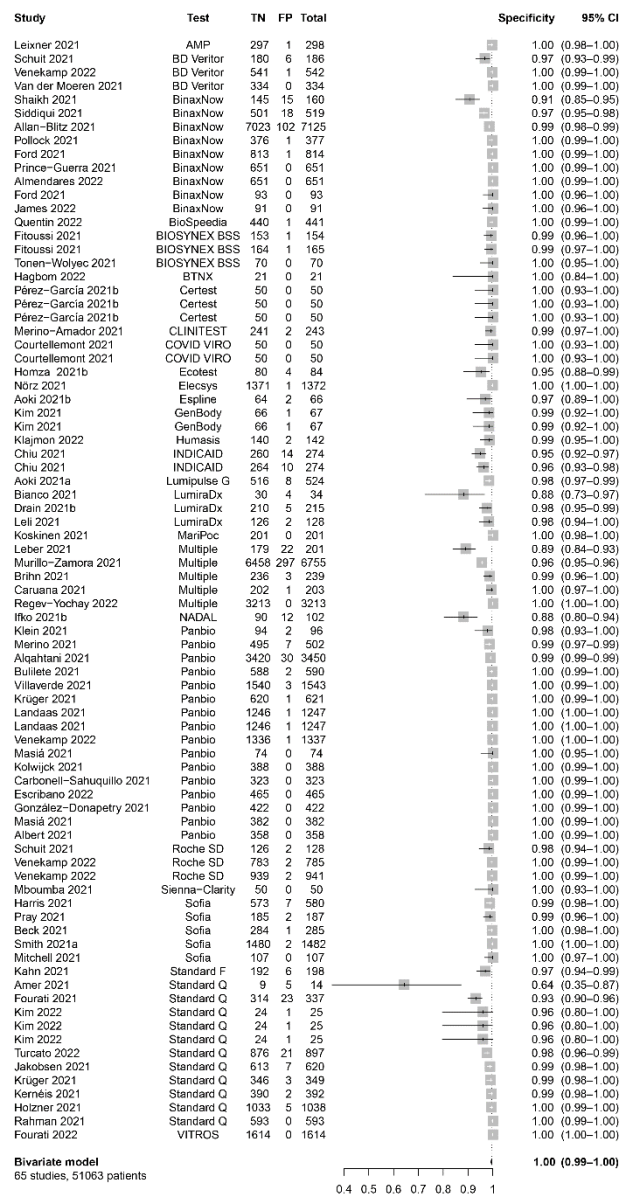
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Figure s2a. Forest plot for the overall sensitivity of antigen tests in symptomatic patients

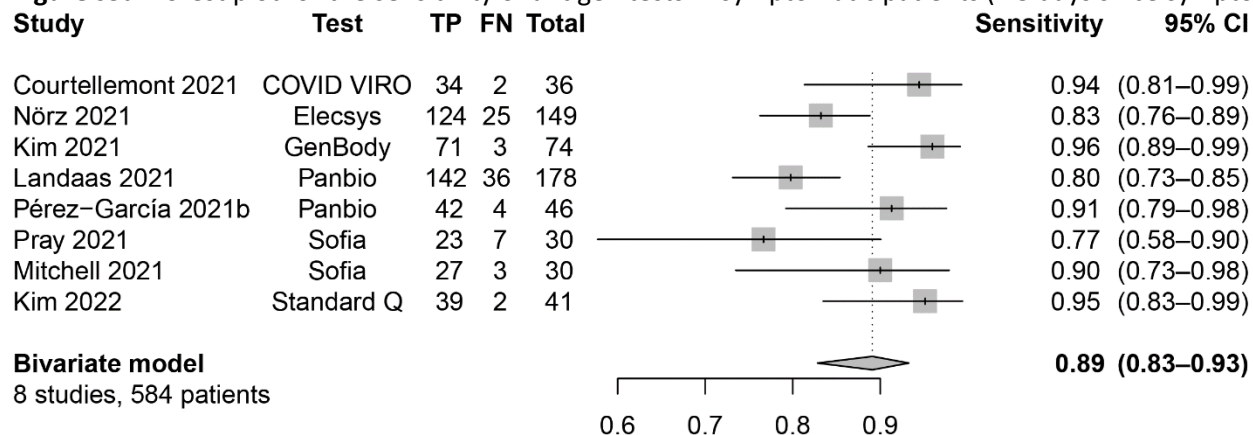
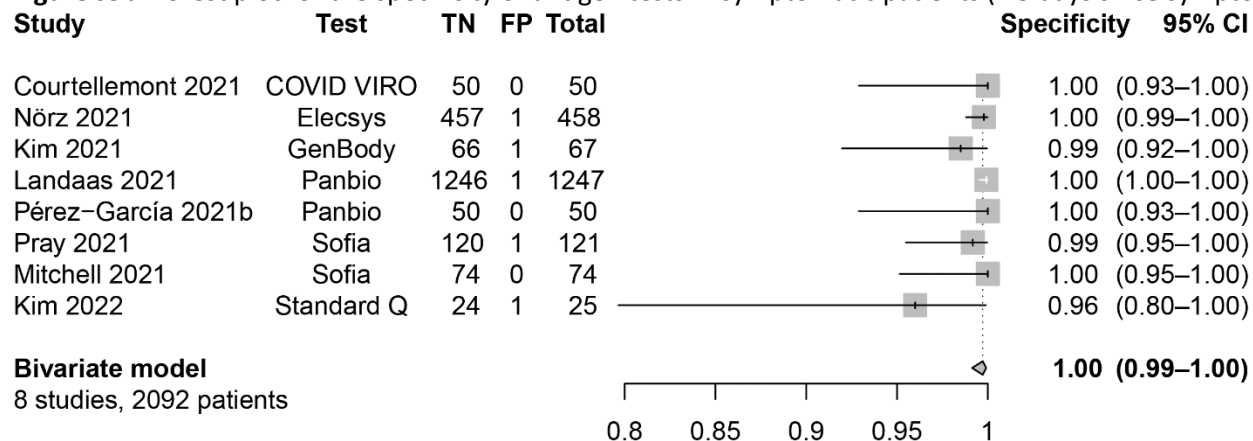


Supplementary Materials

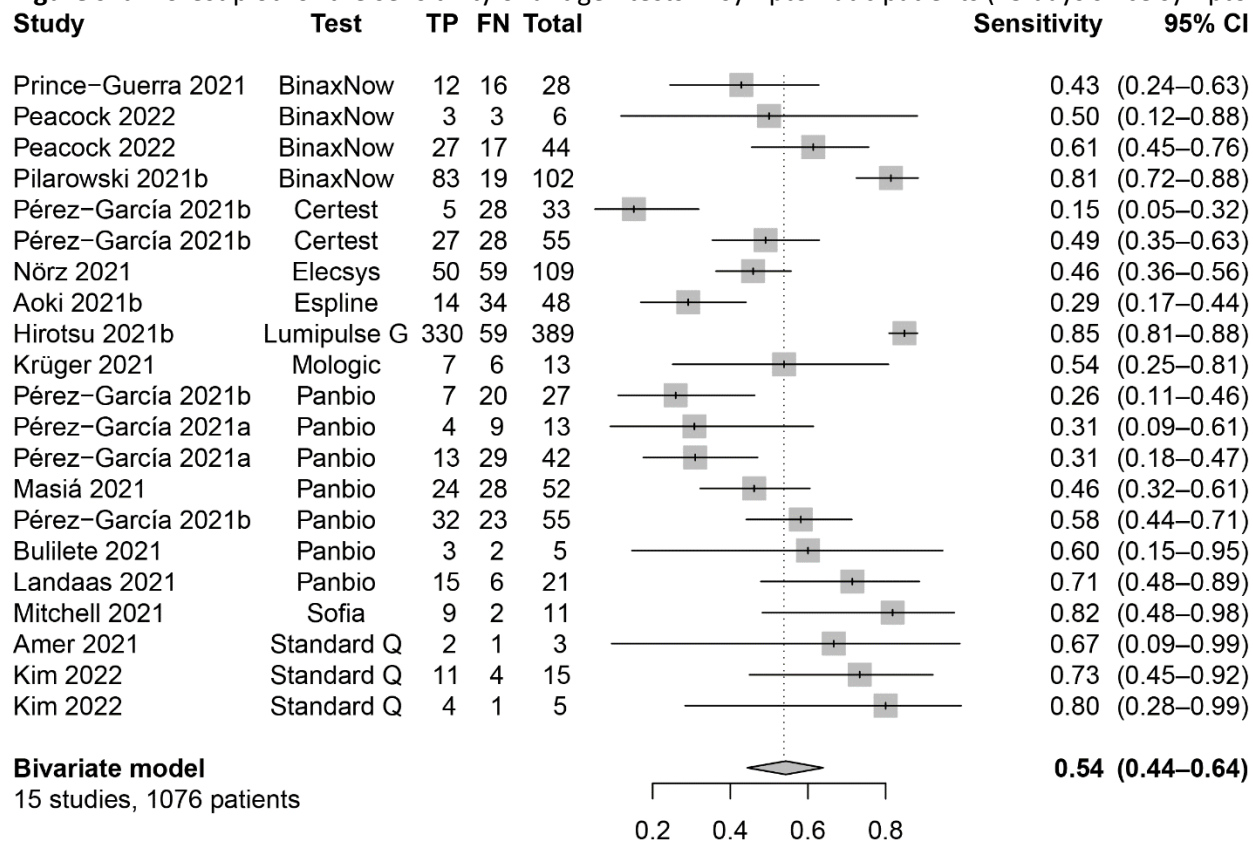
Figure s2b. Forest plot for the overall specificity of antigen tests in symptomatic patients



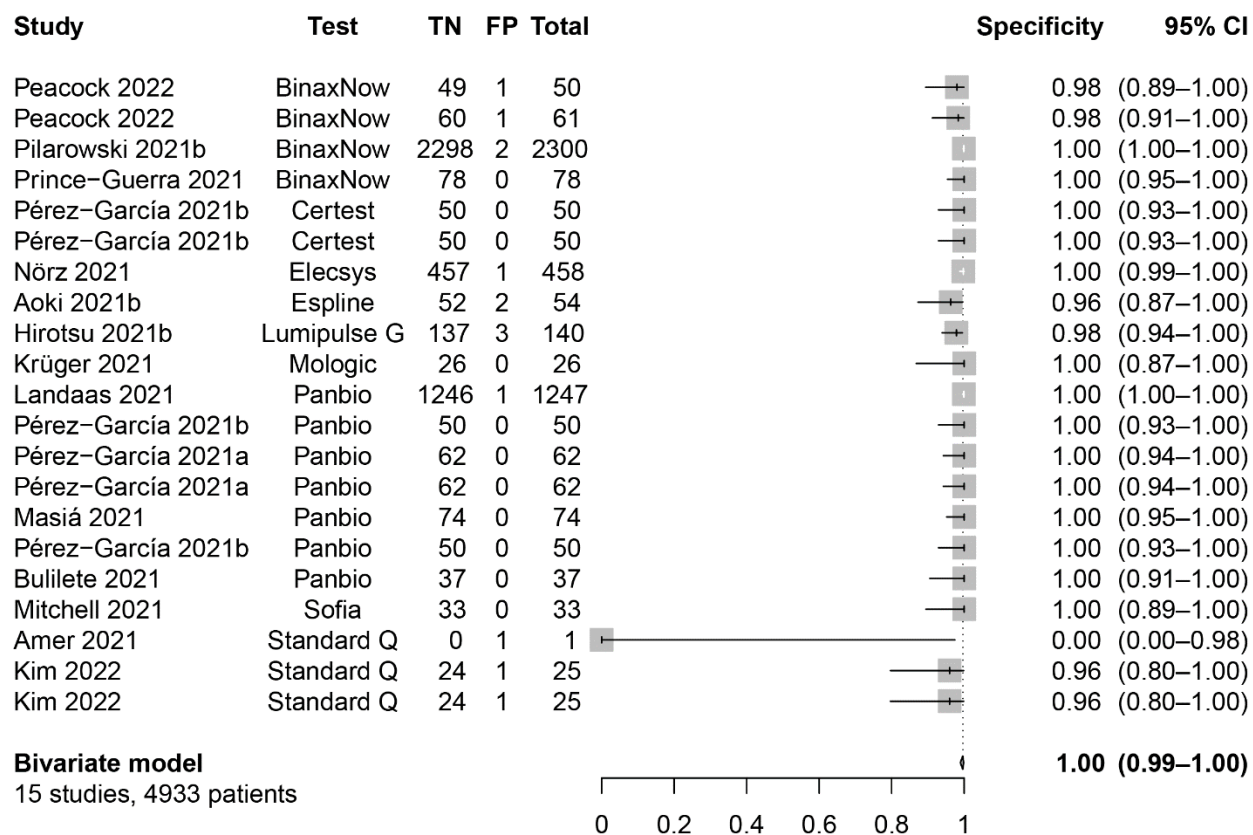
Supplementary Materials

Figure s3a. Forest plot for the sensitivity of antigen tests in symptomatic patients (≤ 5 days since symptom onset)**Figure s3b.** Forest plot for the specificity of antigen tests in symptomatic patients (≤ 5 days since symptom onset)

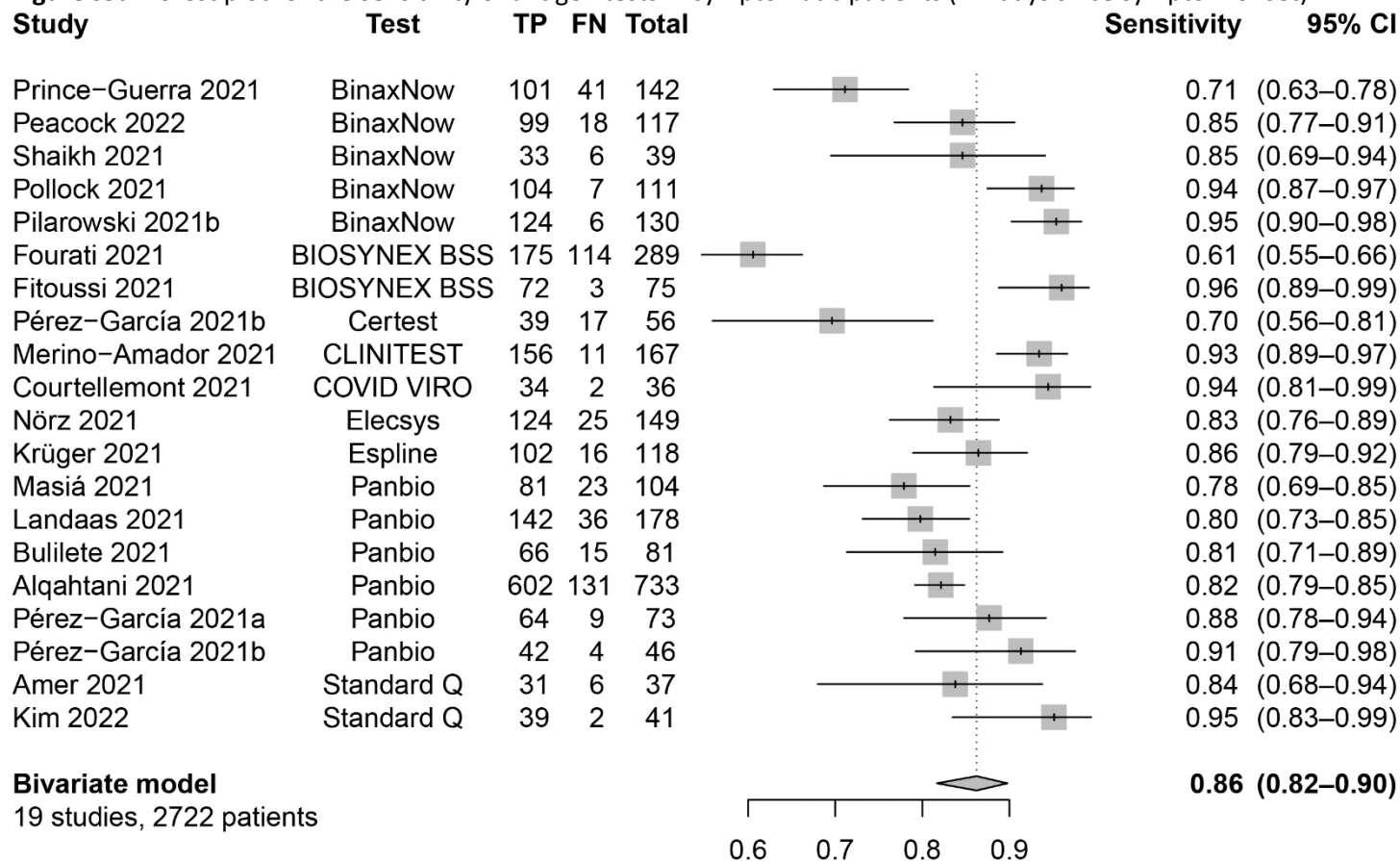
Supplementary Materials

Figure s4a. Forest plot for the sensitivity of antigen tests in symptomatic patients (>5 days since symptom onset)

Supplementary Materials

Figure s4b. Forest plot for the specificity of antigen tests in symptomatic patients (>5 days since symptom onset)

Supplementary Materials

Figure s5a. Forest plot for the sensitivity of antigen tests in symptomatic patients (≤ 7 days since symptom onset)

Supplementary Materials

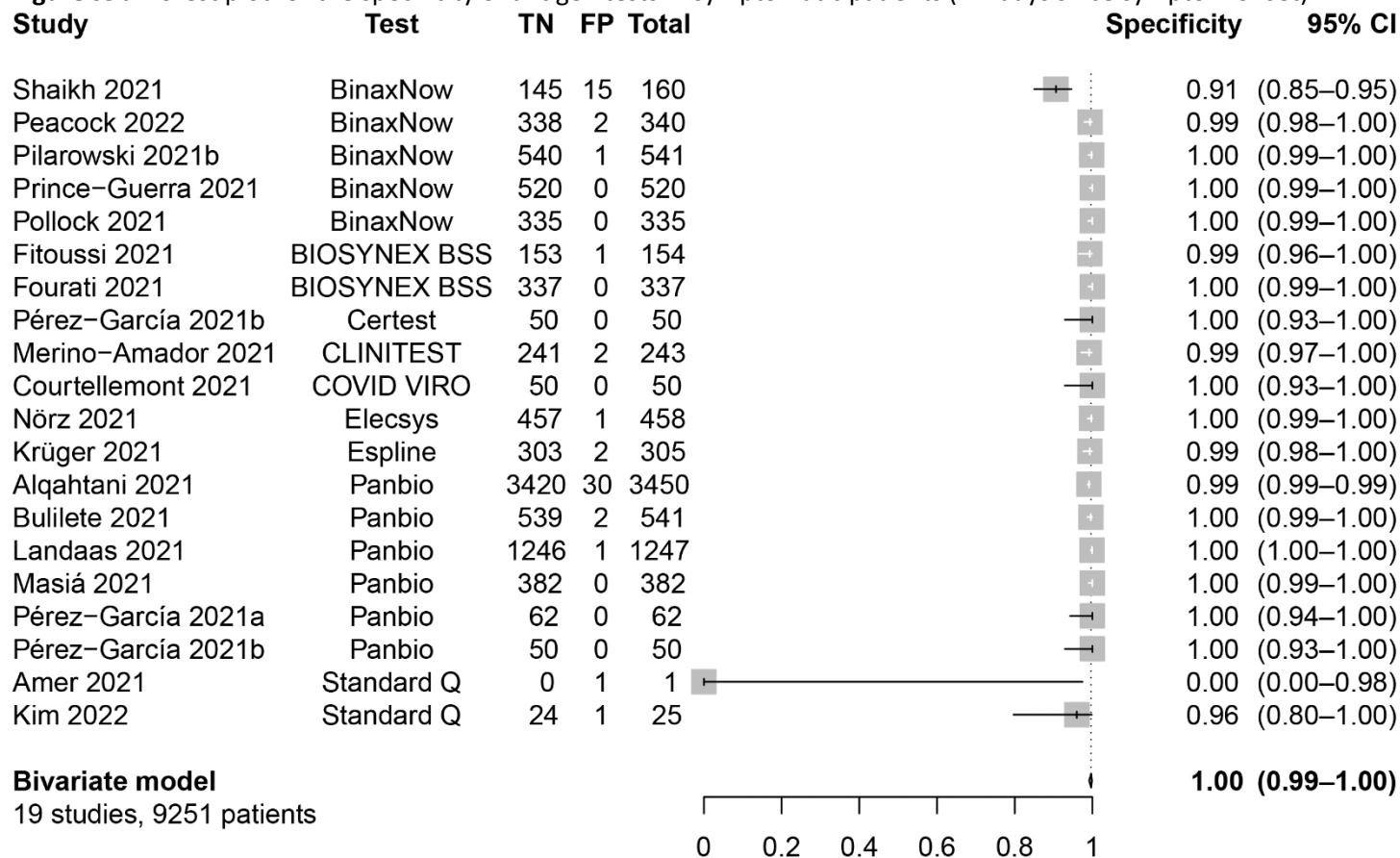
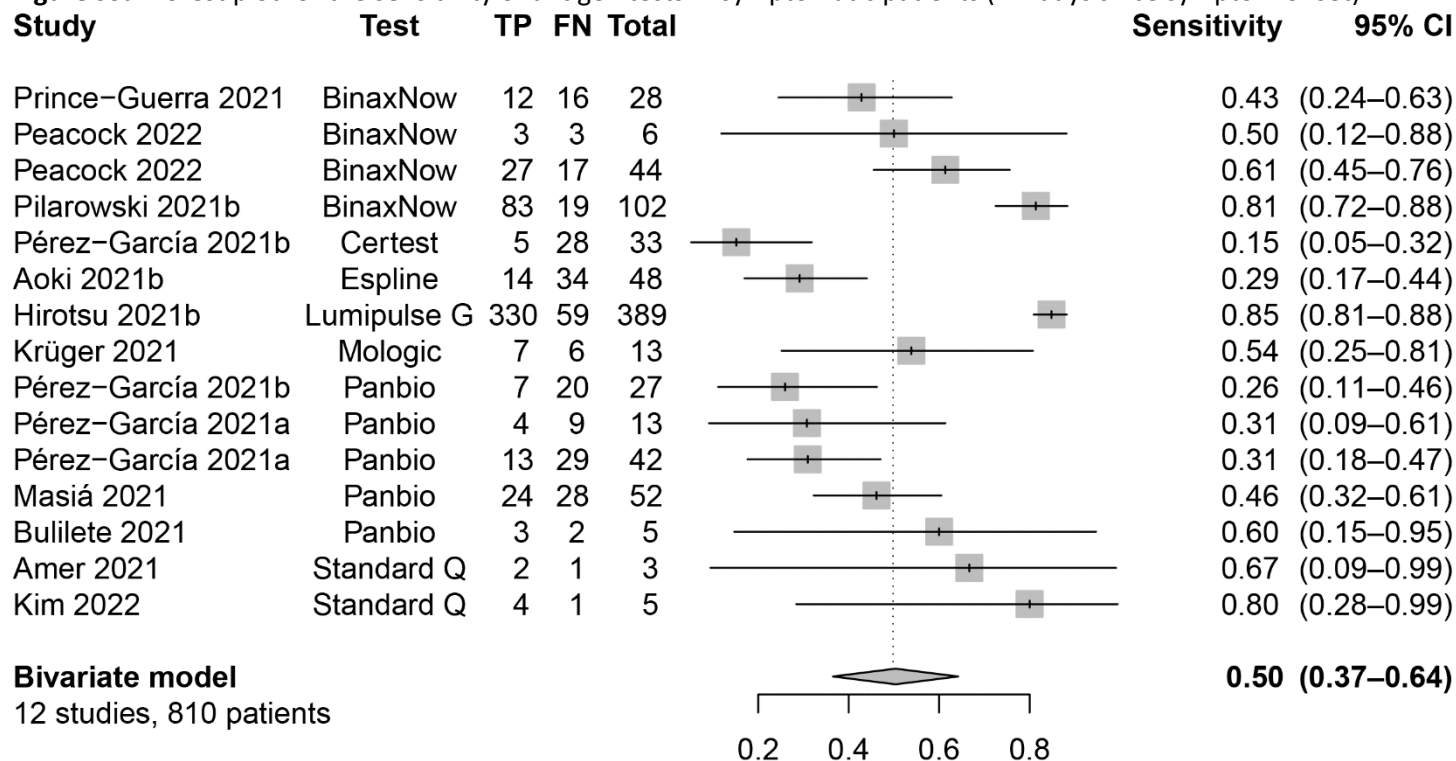
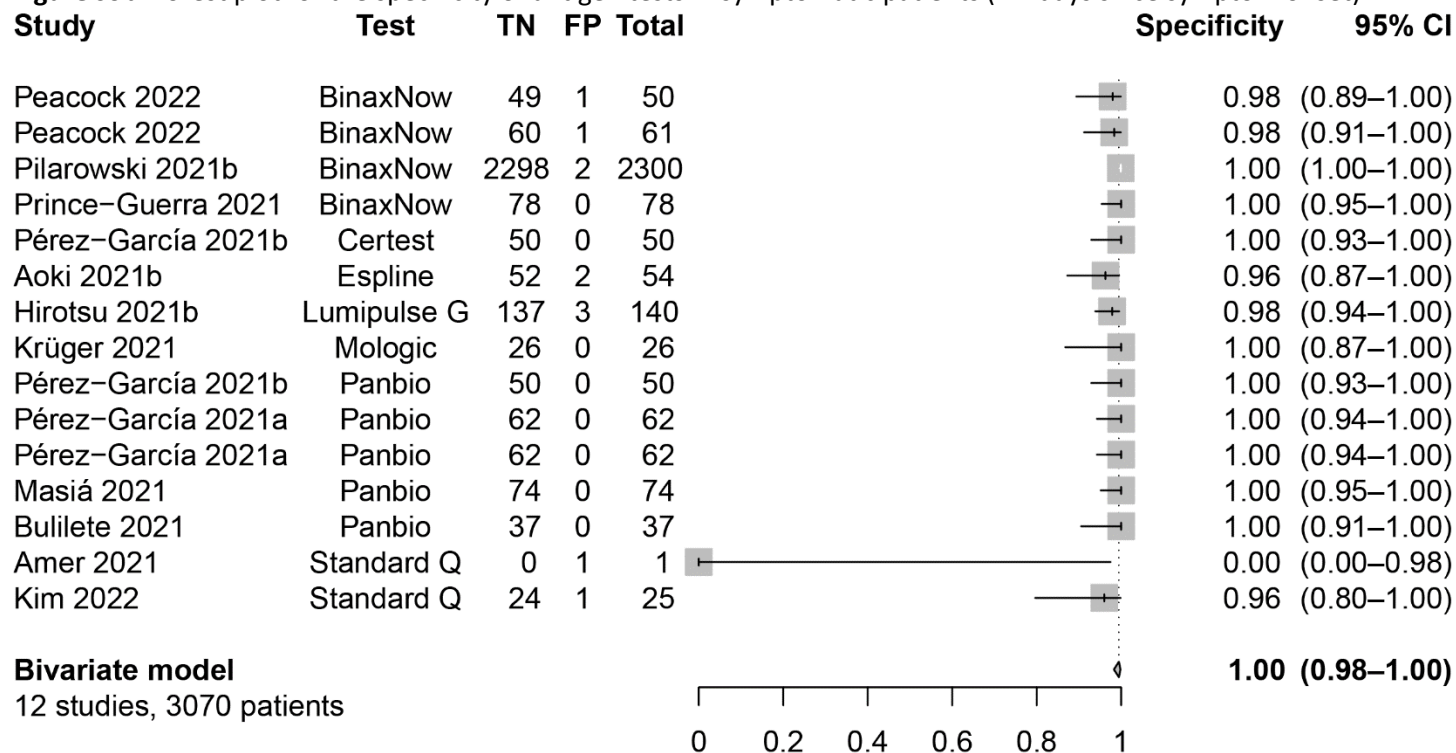
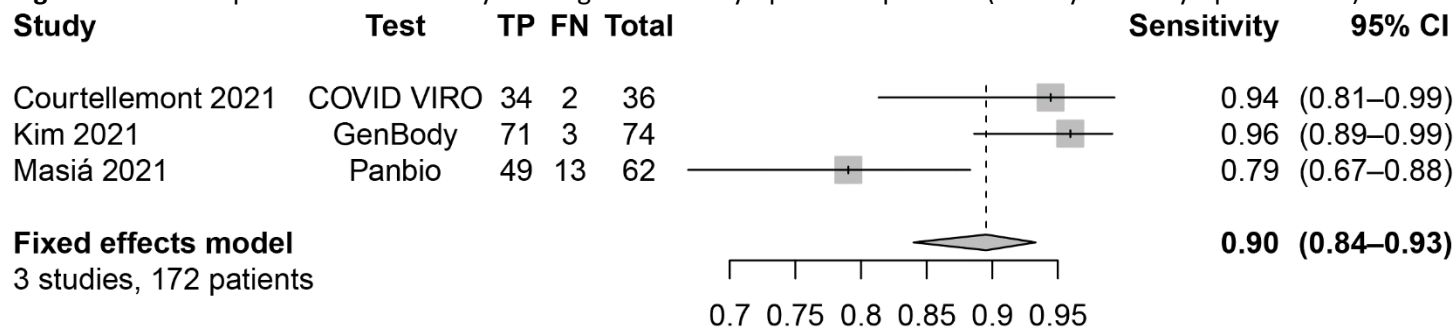
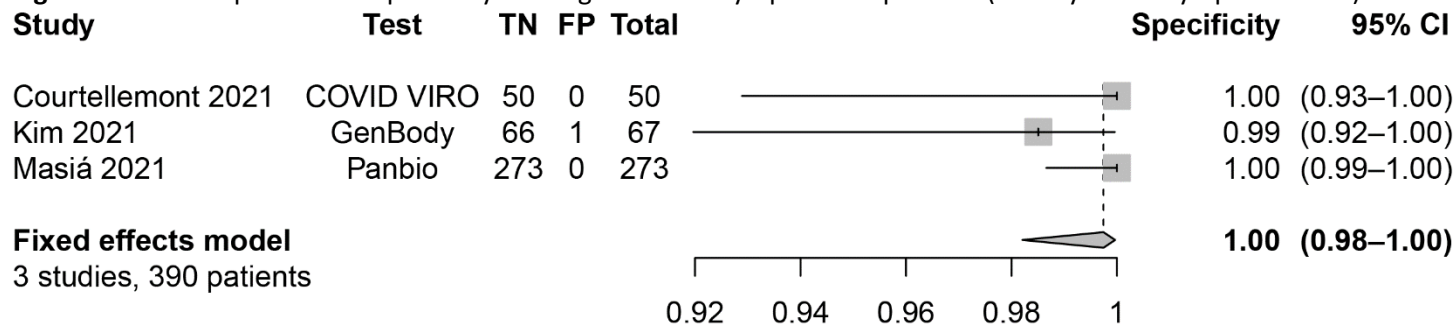
Figure s5b. Forest plot for the specificity of antigen tests in symptomatic patients (≤ 7 days since symptom onset)

Figure s6a. Forest plot for the sensitivity of antigen tests in symptomatic patients (> 7 days since symptom onset)

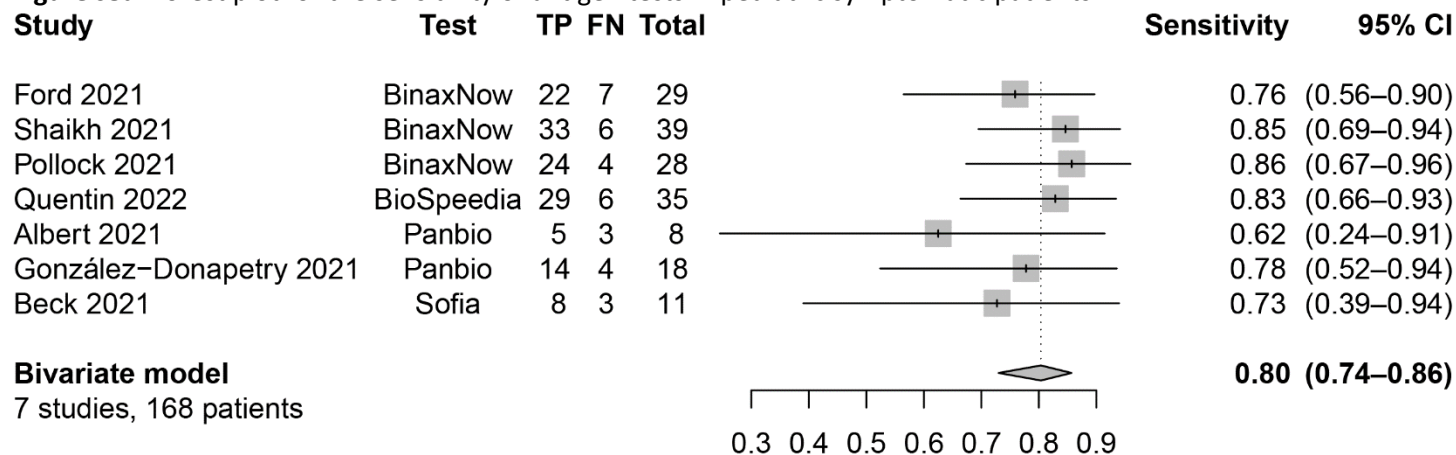
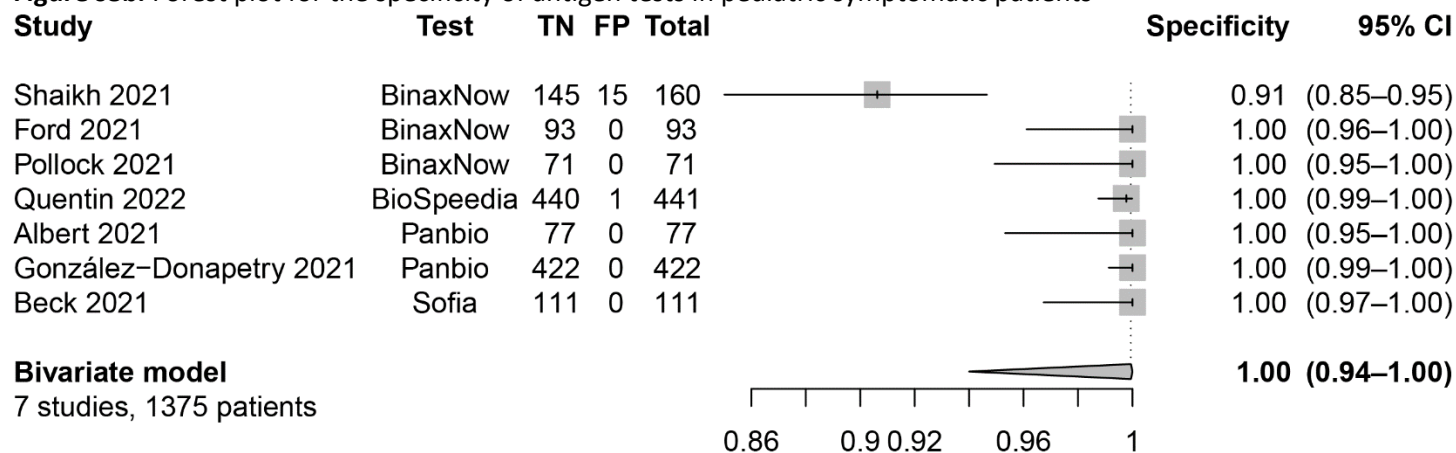
Supplementary Materials

Figure s6b. Forest plot for the specificity of antigen tests in symptomatic patients (> 7 days since symptom onset)

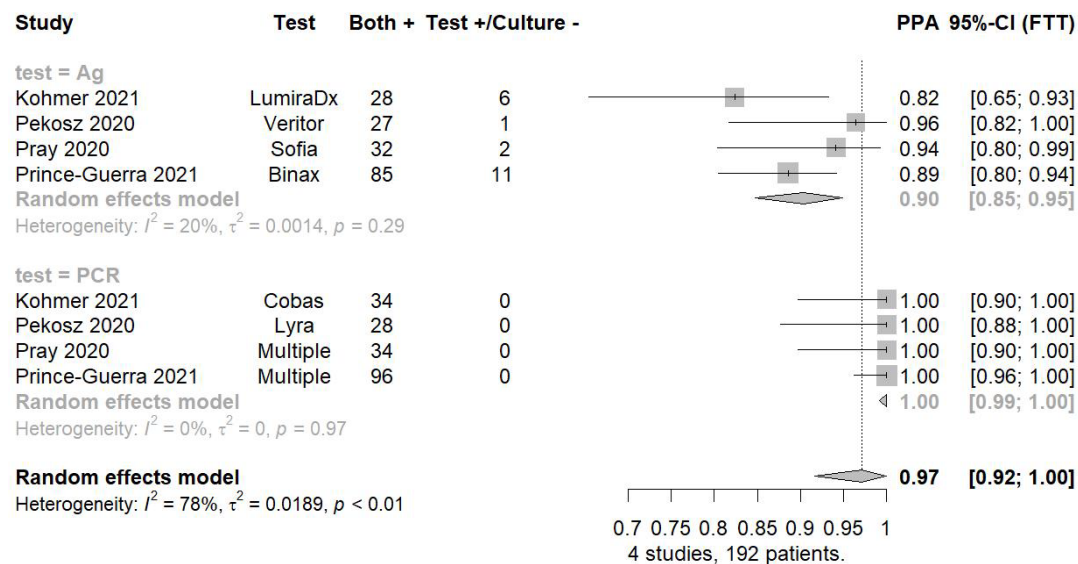
Supplementary Materials

Figure s7a. Forest plot for the sensitivity of antigen tests in symptomatic patients (≤ 3 days since symptom onset)**Figure s7b.** Forest plot for the specificity of antigen tests in symptomatic patients (≤ 3 days since symptom onset)

Supplementary Materials

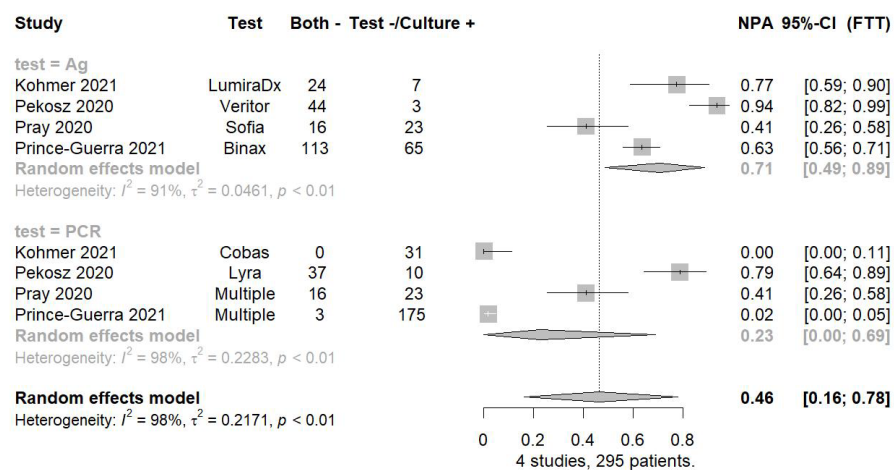
Figure s8a. Forest plot for the sensitivity of antigen tests in pediatric symptomatic patients**Figure s8b.** Forest plot for the specificity of antigen tests in pediatric symptomatic patients

Supplementary Materials

Figure s9a. Forest plot for the agreement on positive results of antigen tests and standard NAAT (either rapid RT-PCR or laboratory-based NAAT) vs. viral culture (all patients)

Supplementary Materials

Figure s9b. Forest plot for the agreement on the negative results of rapid antigen tests and standard NAAT (either rapid RT-PCR or laboratory-based NAAT) vs. viral culture (all patients)



Supplement C

Recommendation 2: For symptomatic individuals suspected of having COVID-19, the IDSA panel suggests using standard NAAT (i.e., rapid RT-PCR and laboratory-based NAAT) over a rapid Ag test (conditional recommendation, low certainty evidence).

For the antigen test accuracy forest plots (symptomatic), refer to Figures s2a and s2b.

Figure s10a. Forest plot for the sensitivity of standard laboratory based NAAT in all patients

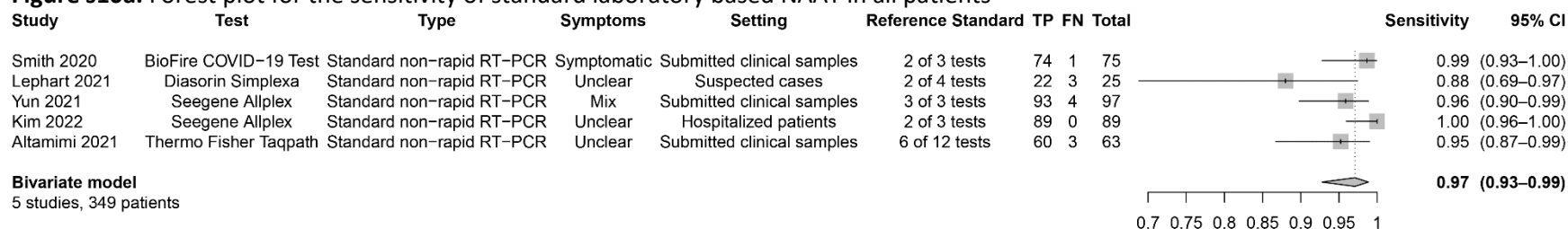
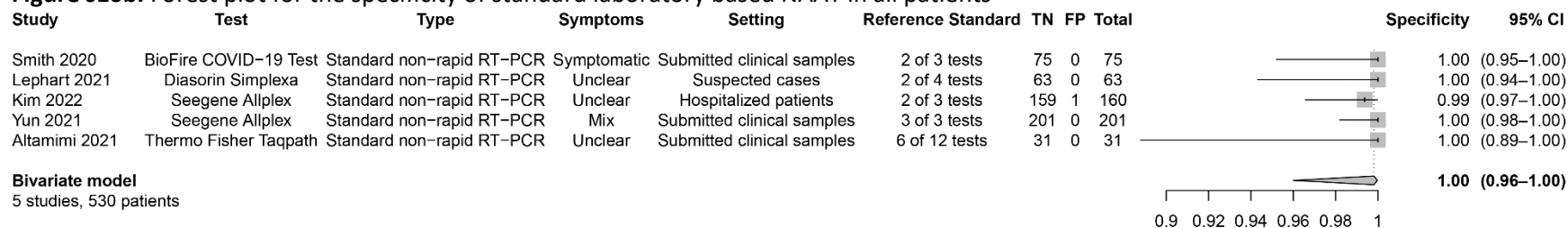


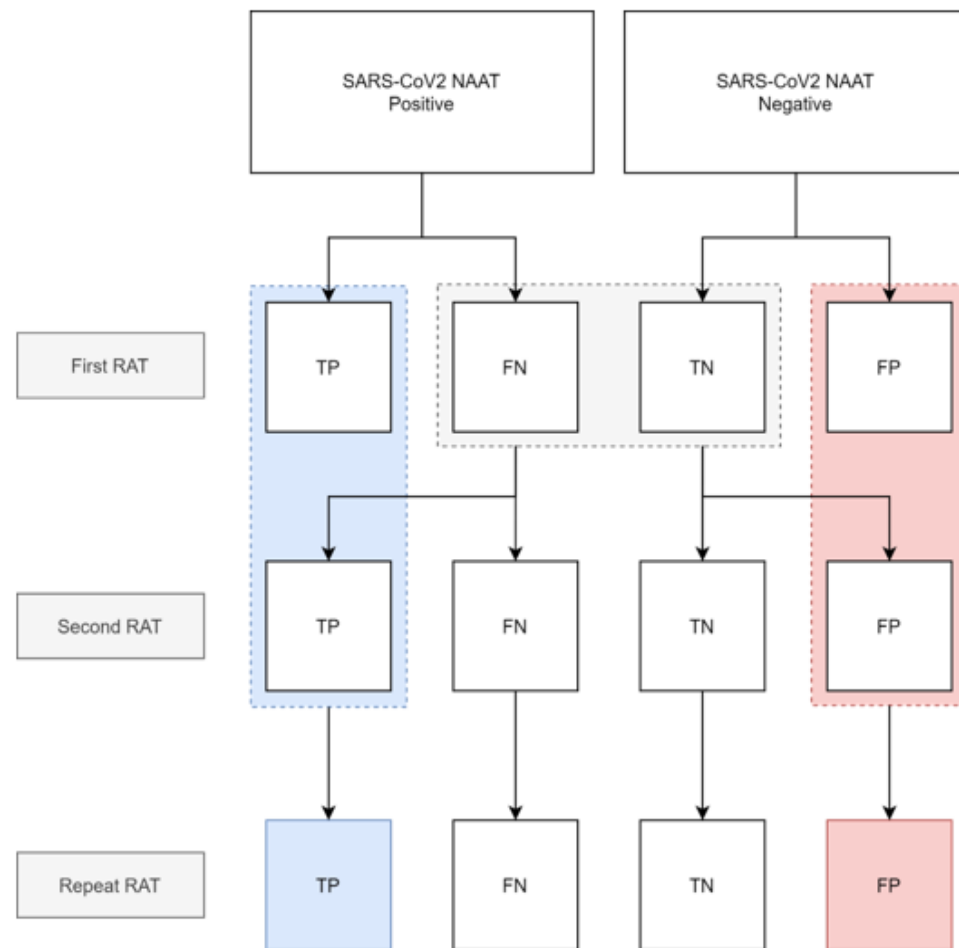
Figure s10b. Forest plot for the specificity of standard laboratory based NAAT in all patients



Supplement D

Recommendation 3: For symptomatic individuals suspected of having COVID-19, the IDSA panel suggests using a single standard NAAT (i.e., rapid RT-PCR and laboratory-based NAAT) rather than a strategy of two consecutive rapid Ag tests (conditional recommendation, very low certainty evidence).

Figure s11a. Repeat testing algorithm



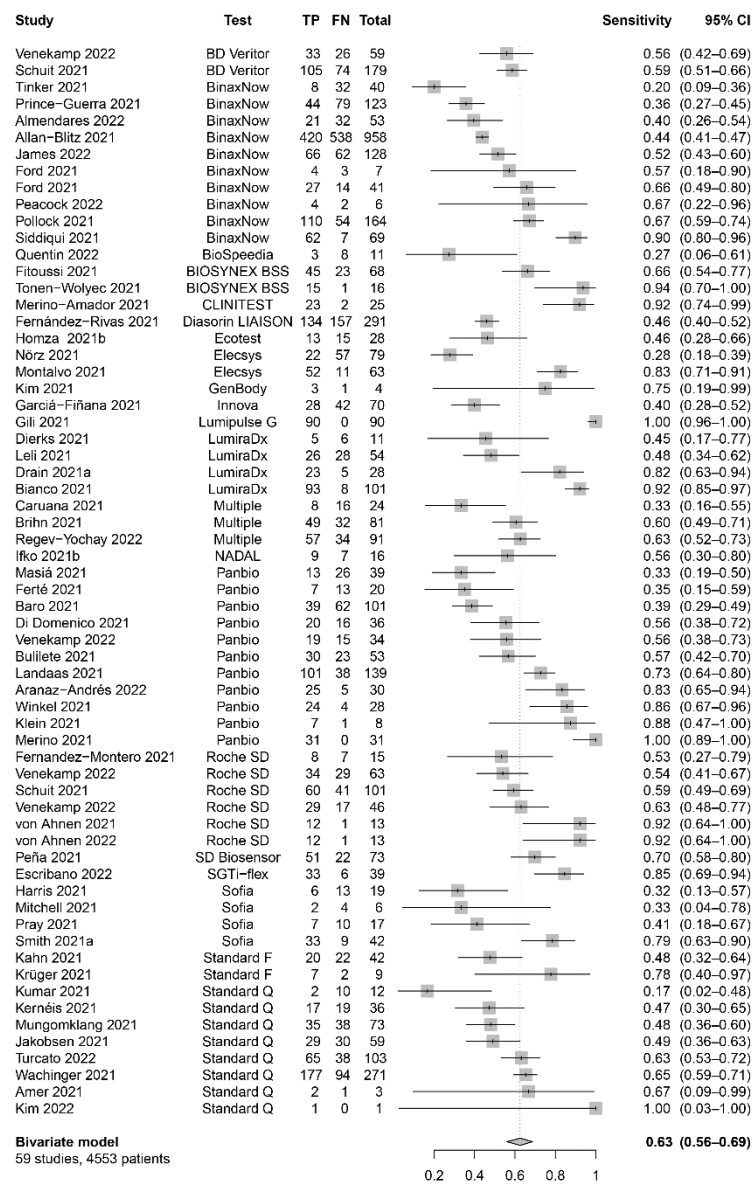
RAT: Rapid antigen test

Supplement E

Recommendation 4: For asymptomatic individuals with known exposure to SARS-CoV-2 infection, the IDSA panel suggests using a single (i.e., one-time) Ag test over no testing in specific situations (conditional recommendation, moderate certainty evidence).

Supplementary Materials

Figure s12a. Forest plot for the overall sensitivity of antigen tests in asymptomatic patients



Supplementary Materials

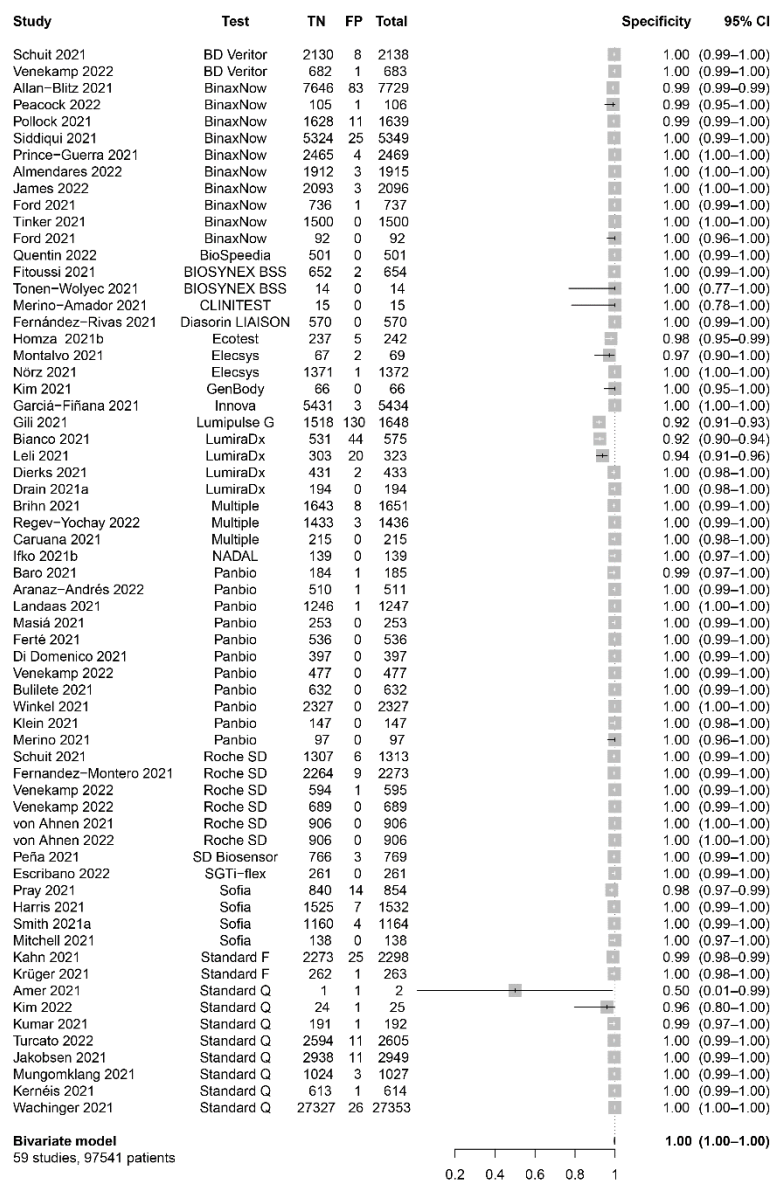
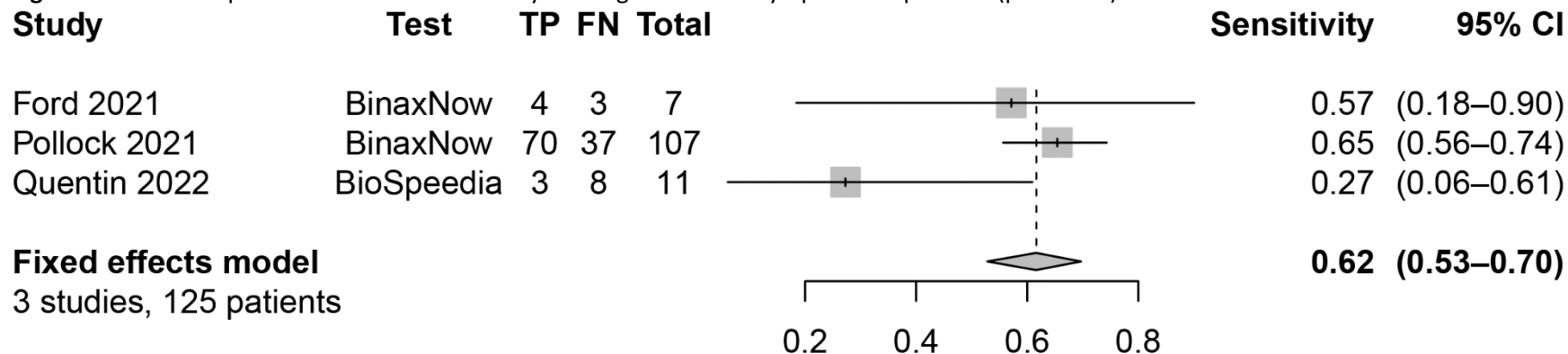
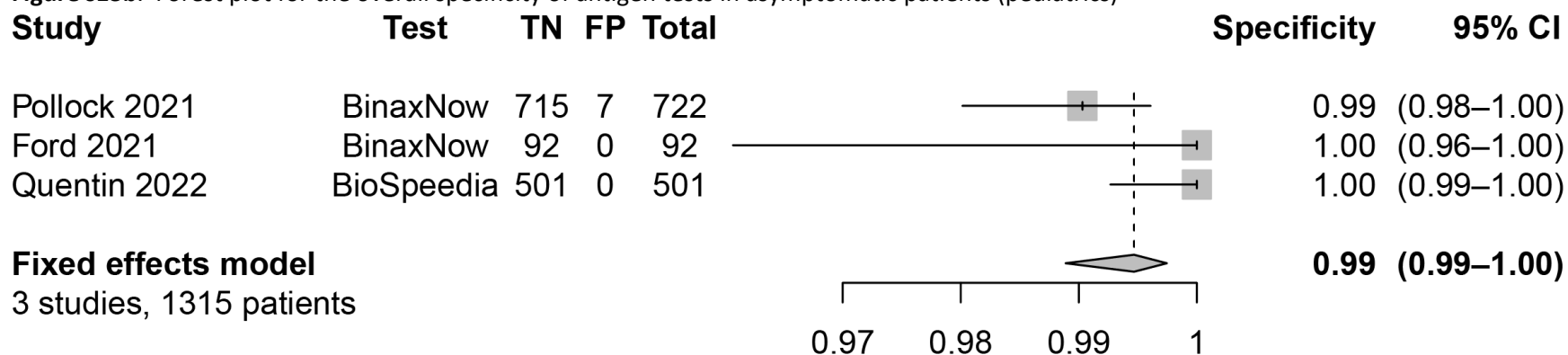
Figure s12b. Forest plot for the overall specificity of antigen tests in asymptomatic patients

Figure s13a. Forest plot for the overall sensitivity of antigen tests in asymptomatic patients (pediatrics)**Figure s13b.** Forest plot for the overall specificity of antigen tests in asymptomatic patients (pediatrics)

Supplement F

Recommendation 5: For asymptomatic individuals with known exposure to SARS-CoV-2 infection, the IDSA panel suggests using a single standard NAAT (i.e., rapid RT-PCR and laboratory-based NAAT) over a single rapid Ag test (conditional recommendation, low certainty evidence).

For the antigen test accuracy forest plots (asymptomatic), refer to [Figure s12a](#) and [Figure s12b](#).

For the NAAT accuracy forest plots, refer to [Figure s10a](#) and [Figure s10b](#).

Supplement G

Recommendation 6: In asymptomatic individuals with a known exposure to SARS-CoV-2, if standard NAAT testing or results are not available in a timely manner and a first Ag test is negative, the IDSA panel suggests for repeating Ag testing (conditional recommendation, very low certainty evidence).

Refer to [Figure s11a](#) for repeat testing algorithm

Supplement H

Recommendation 9: For individuals for whom Ag testing is desired, the IDSA panel suggests for either point-of-care or laboratory-based Ag testing (conditional recommendation, low certainty evidence).

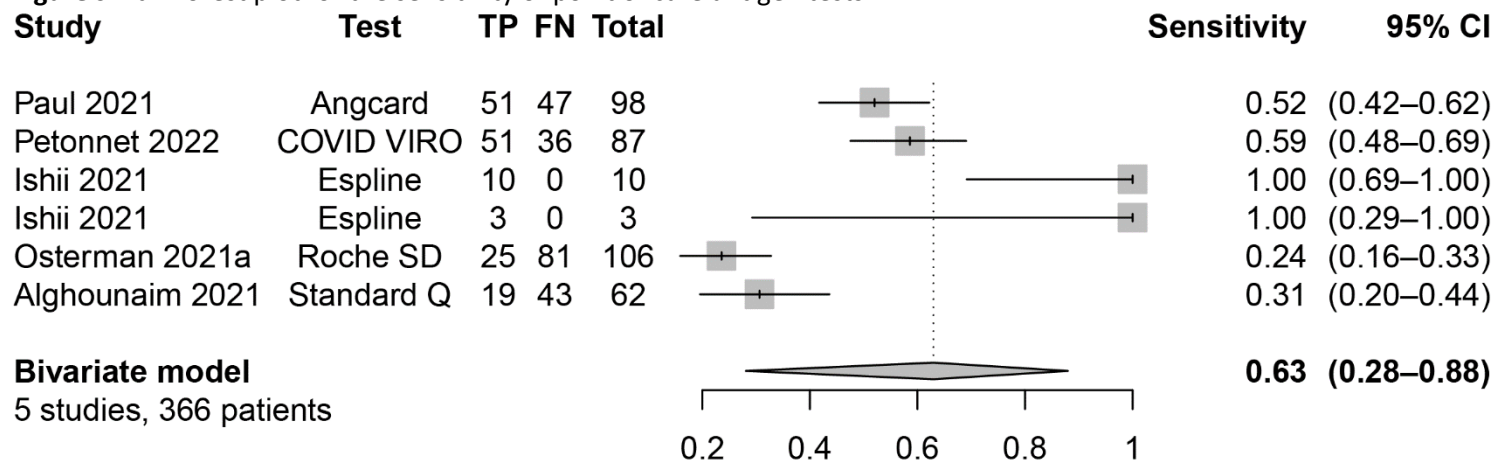
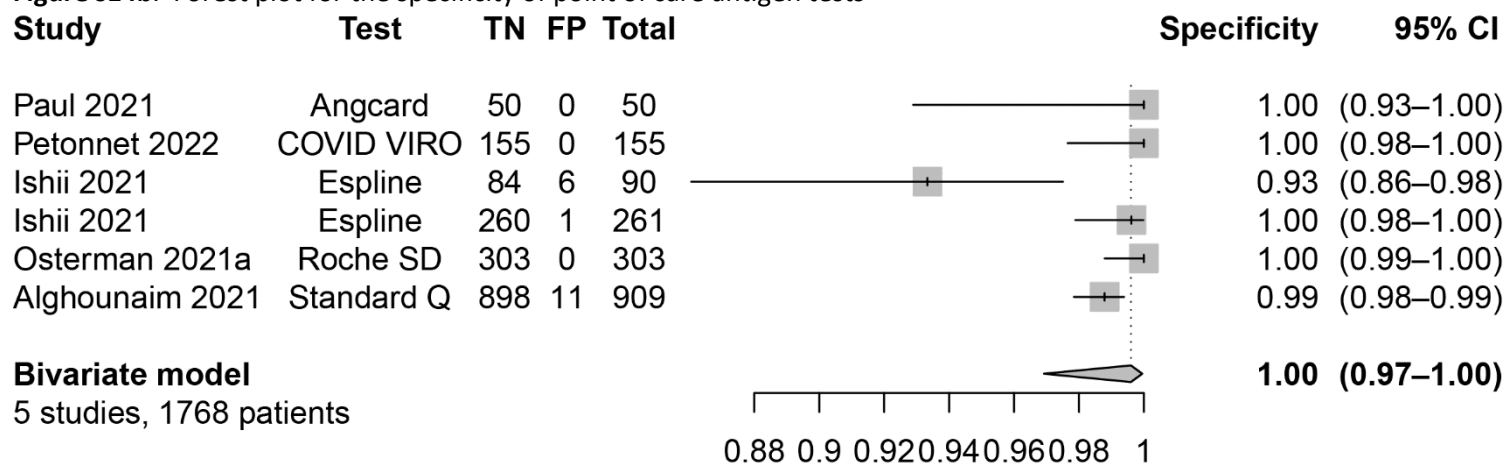
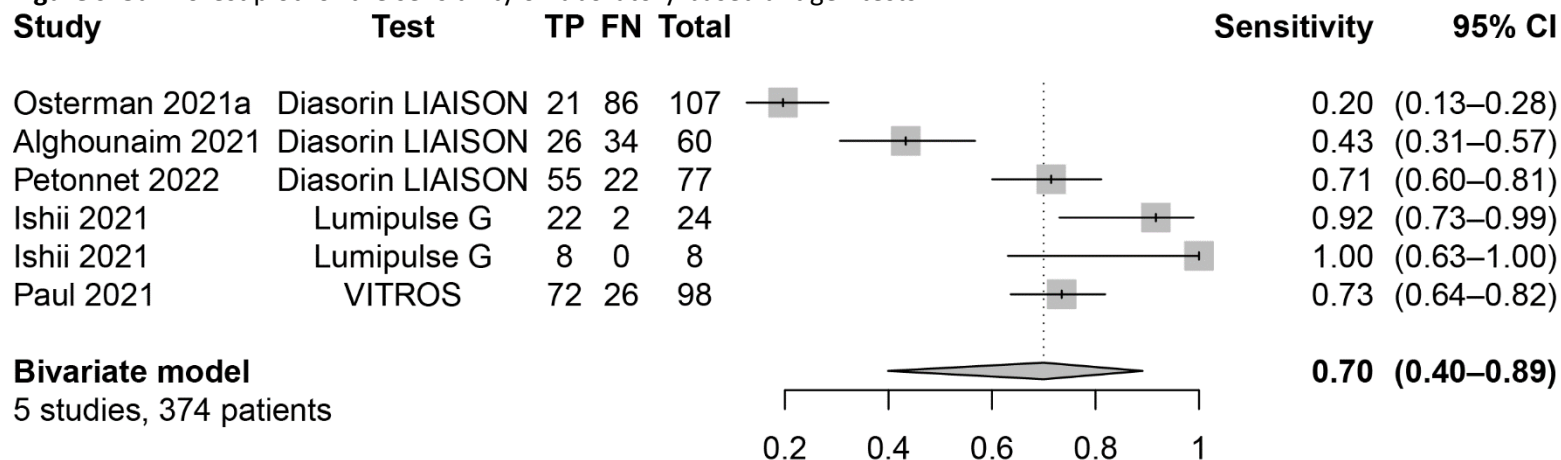
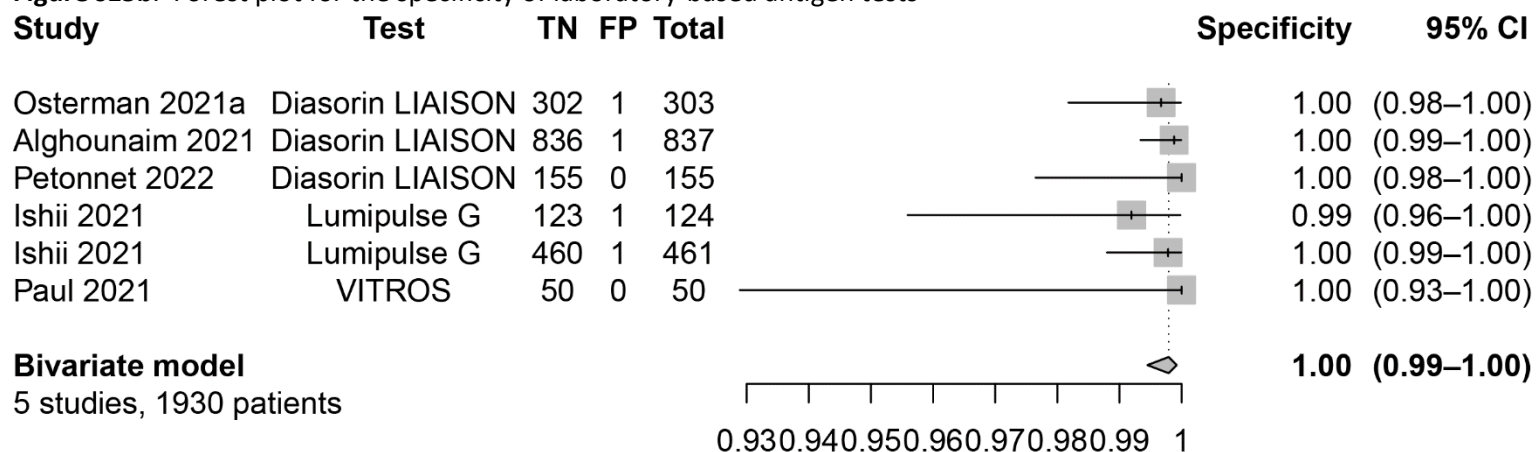
Figure s14a. Forest plot for the sensitivity of point of care antigen tests**Figure s14b.** Forest plot for the specificity of point of care antigen tests

Figure s15a. Forest plot for the sensitivity of laboratory-based antigen tests**Figure s15b.** Forest plot for the specificity of laboratory-based antigen tests

Supplement I

Recommendation 10: The IDSA panel suggests either observed or unobserved self-collection of swab specimens for Ag testing (conditional recommendation, low certainty evidence).

Figure s16a. Forest plot for the sensitivity of observed self-collection

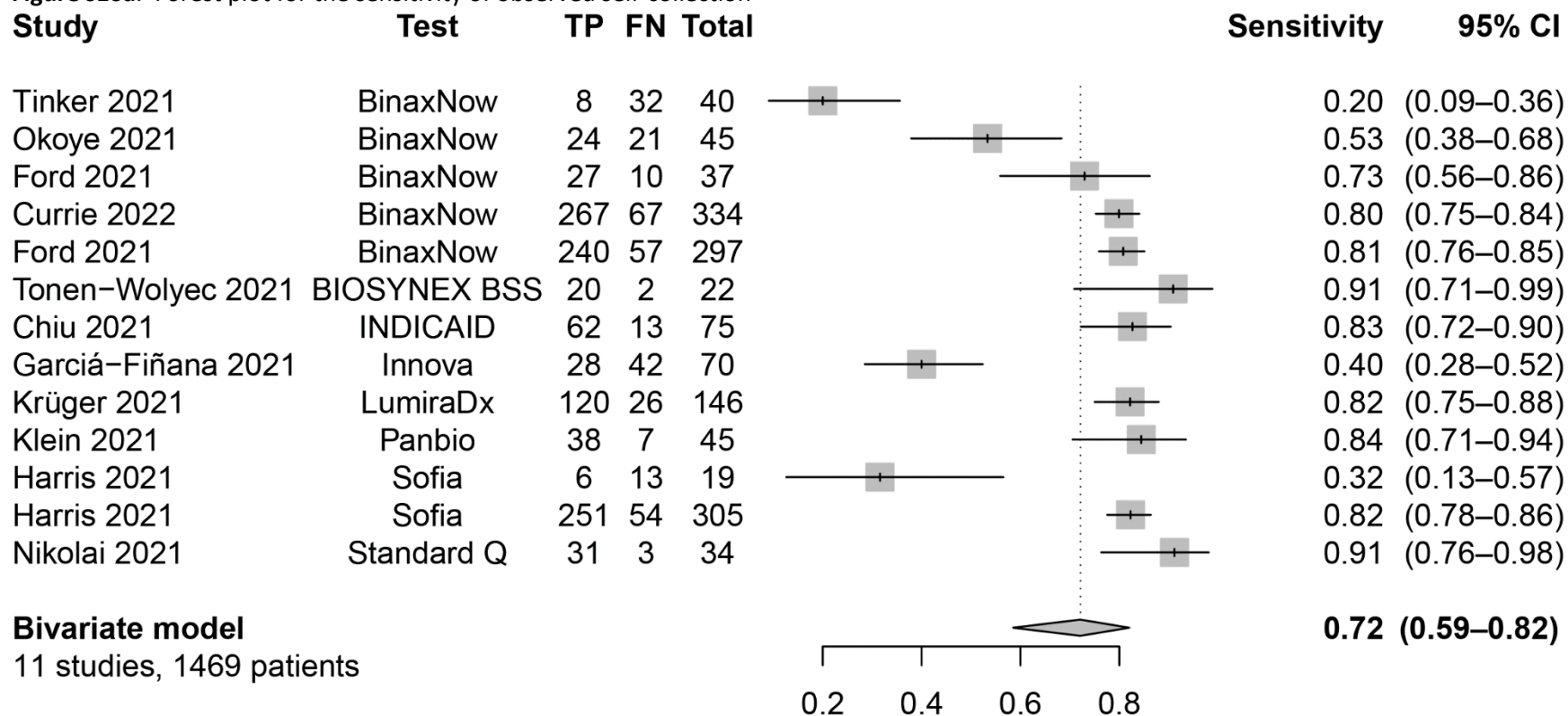


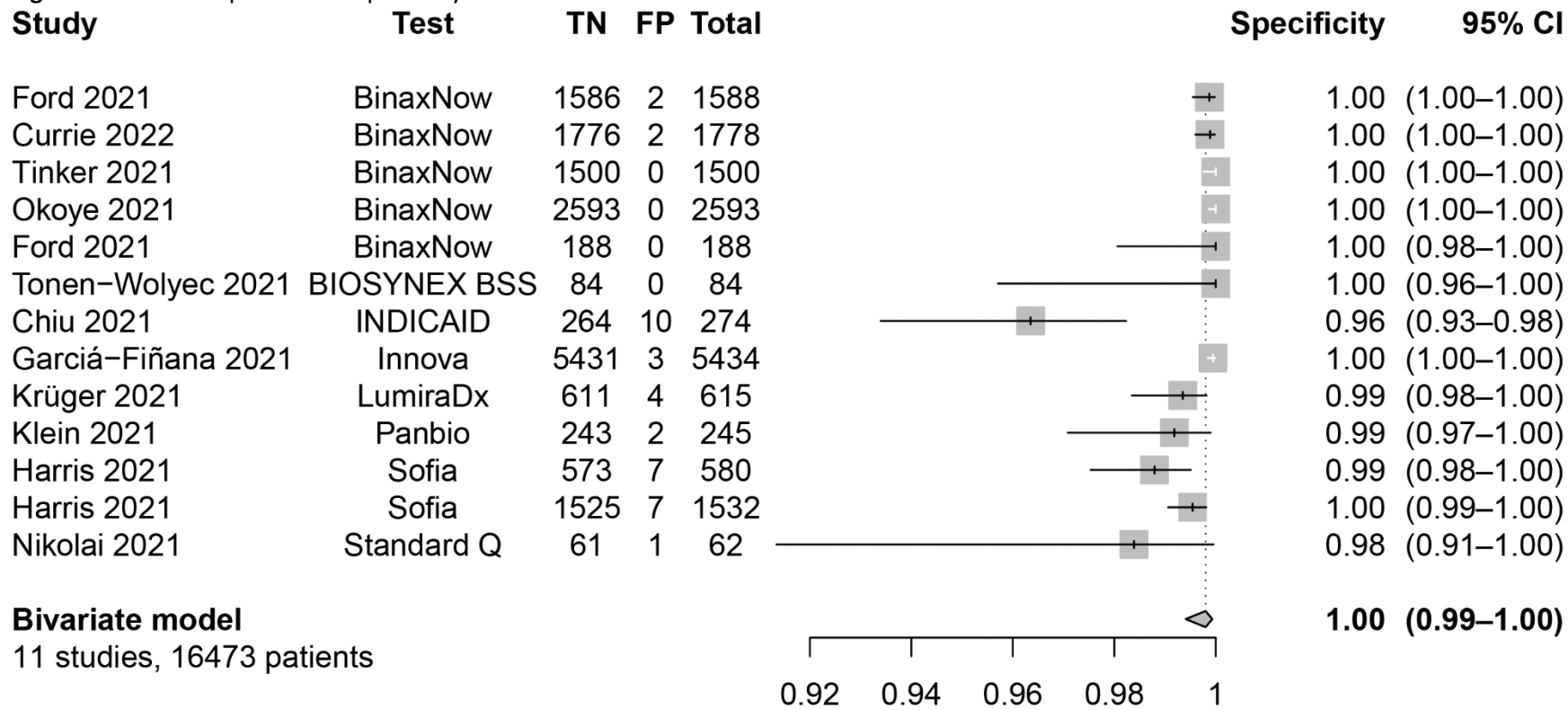
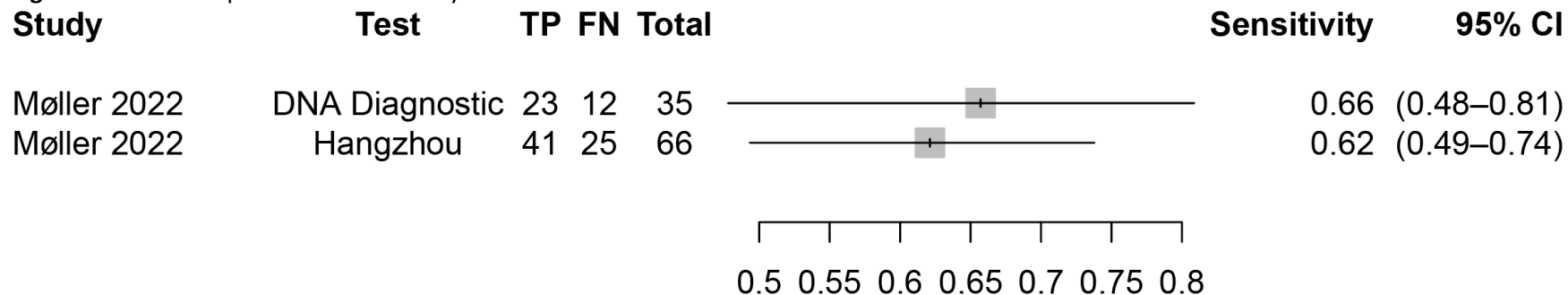
Figure s16b. Forest plot for the specificity of observed self-collection

Figure s17a. Forest plot for the sensitivity of unobserved self-collection**Figure s17b.** Forest plot for the specificity of unobserved self-collection