Evaluation of a strategy combining medical triage and SARS-CoV-2 Ag-RDTs to improve the diagnosis of COVID-19 in health facilities in Mali (ECoVAM study)

E-Poster EP 41-1013.

Guillaume Breton[1], Issouf Maiga[2], Aboubacar Maiga[2], Abdelaye Keita[3], Luis Sagaon Teyssier[4], Gabrièle Laborde-Balen[5], Sylvain Bieler[6], Odé Kanku Kabemba[2], Garan Dabo[7], Mahamadou A. Thera[8], Daouda K. Minta[9] and the ECoVAM study group.

[1]Solthis, Paris and Infectious Diseases Department, Pitié-Salpêtrière Hospital, Paris, France; [2]Solthis, Bamako, Mali; [3]INSP, Bamako, Mali; [4] Aix Marseille University, INSERM, IRD, SESSTIM, Sciences Economiques & Sociales de la Santé & Traitement de l'Information Médicale, ISSPAM, Marseille, France; [5]IRD-TransVIHMI UMI 233/ INSERM 1175 University of Montpellier, France; [6]FIND, Geneva, Switzerland; [7] Infectious Diseases Department, CHU Hôpital du Mali, Bamako, Mali; [8]Faculty of Medicine, Pharmacy, and Odonto-Stomatology, Malaria Research and Training Center, University of Sciences, Techniques and Technologies of Bamako, Mali; [9]Infectious Diseases Department, CHU du Point G, Bamako, Mali

Background

In Mali, COVID-19 diagnosis is based on PCR whose accessibility remains limited. In health facilities, screening is done at entry, but the search for clinical signs during consultation, whose duration is 5 min on average, is not systematic, leading to a sub-diagnosis. We evaluate a strategy combining systematic triage for COVID-19 for adults during consultation and Ag-RDTs for suspected cases.

Method

Prospective study from October 2021 to January 2022 in medical and emergency departments in 7 health facilities at different levels of the health care system. A median of 5 HCWs was recruited and trained in each health facilities. PCR was requested for positive Ag-RDT (SD Biosensor).
Inclusion criteria: adults, medical consultation, written informed consent.
Operationality was defined by the proportion of patients who received triage and Ag-RDT for suspected cases among patients who consulted.

Results

A total of 9.744 patients presented for routine and emergency medical consultations at the study sites. A total of 3.607 patients (38%) were offered participation in the study and 2.407 (25%) accepted to participate. 23% of patients refused to participate. The main reasons for refusal to participate were: lack of time (34%), denial of COVID-19 (28%), refusal to sign consent (14%) and fear of a positive test and/or stigmatisation (12%). A total of 2.407 patients were included, women represented 59% of the population, the median age was 36 years, the proportion of patients aged 50 years and over was 28%.

Table: inclusion, COVID-19 screening, SARS-CoV-2 Ag-RDTs , PCR and operationality of the ECoVAM strategy

	Community health facilities (n=2)	Reference health facilities (n=3)	Hospital (n=2)	TOTAL	p
Consultation, N	1 253	5 694	2 797	9744	
Inclusions, N	537 (43%)	1252 (22%)	618 (22%)	2407	<0,0001
COVID-19 suspected cases already identified by triage at entry to HCF, N (%)	158 (37%)	47 (7%)	100 (33%)	305 (22%)	<0,0001
COVID-19 suspected cases identified by triage during medical consultation, N (%)	422 (79%)	679 (54%)	304 (49%)	1405 (58%)	<0,0001
SARS-CoV-2 Ag RDT performed among COVID-19 suspected cases N, (%)	398 (94%)	584 (86%)	284 (93%)	1266 (90%)	<0,0001
Positive SARS-CoV-2 Ag RDT, N (%)	86 (22%)	116 (20%)	127 (45%)	329 (26%)	<0,0001
PCR performed, N (%)	80 (93%)	81 (69%)	78 (61%)	239 (73%)	<0.0001
PCR results available, N (%)	0	78 (96%)	55 (71%)	133 (55%)	<0.0001
Positive PCR, N (%)	ND	69 (88%)	50 (91%)	119 (89%)	ns
Operationality of the strategy, %	41%	20%	21%	23%	<0.0001

Triage and Ag-RDTs were highly accepted by health authorities, HCWs, patients (data not shown)
Among patients with COVID-19, most have cough and fever 63%, 4% anosmia/ageusia and 33% minor symptoms. 34 patients had severe symptoms and were hospitalised, one died. Severity was associated with co-morbidities (29% vs 18% p=0.03) and age≥50 years old (59% vs 26%), p<0.01.

Conclusions

This study highlighted the importance of the circulation of COVID-19 in people presenting at the study sites: 58% of patients had WHO criteria for suspected COVID-19 and 26% of them had a positive SARS-CoV-2 Ag RDT.
The systematic triage strategy based on WHO criteria increased the identification of suspected cases by 360% compared to the strategy of triage by non-medical staff at entry of HCF.
SARS-CoV-2 Ag RDTs are widely appreciated by health professionals and, given the difficulty of obtaining PCR results, particularly at the Community health facility level, has made it possible to increase the number of cases of COVID diagnosed by 170% compared to PCR.
Despite its feasibility, acceptability and effectiveness, the strategy is not operational since a majority of patients were not offered triage due to he large flow of patients and the increase in consultation time linked to triage due to the limited human resources.
Given the very low mortality, a strategy of prioritising the most at-risk patients (age ≥50 years and/or presence of comorbidities) may be more appropriate and should be evaluated in order to develop responses that are more adapted to the realities of the health system and face future pandemics.

Solthis — Therapeutic Solidarity and Initiatives for Health

IRD — Institut de Recherche pour le Développement FRANCE

INSP — INSTITUT NATIONAL DE SANTE PUBLIQUE

Ministère de la Santé et de l'Hygiène Publique www.sante.gov.ml

FIND — Diagnosis for all