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Background

Regional mapping for trachoma conducted in 2000 indicated that trachoma was a public health problem in all regions of Senegal except for Dakar and Tambacounda (now Tambacounda and Kédougou regions). District-level trachoma baseline mapping was then conducted in 57/79 health districts (HD) between 2000-2016. Of the 57 HD mapped, 27 demonstrated a prevalence of trachomatous inflammation – follicular (TF) $\geq 5\%$ among children ages 1-9 years, and MDA was conducted in 19 of those HD; re-mapping was conducted in the other 8 HD and TF was $< 5\%$. Trachoma impact surveys (TIS) between 2014 and 2018 demonstrated that the elimination threshold of TF $< 5\%$ in children ages 1-9 had been met in all 19 HDs, and trachoma surveillance surveys (TSS) between 2017-2021 indicated that the elimination threshold had been sustained for at least two years in the absence of MDA.

In the 20+ years since the regional mapping, the Tambacounda and Kédougou regions had never been re-examined for trachoma prevalence, and, given that Senegal has reached its TF elimination targets elsewhere in the country, the Programme Nationale de Santé Oculaire (PNPSO) felt that it was important to reconfirm previous decisions in these 10 HDs as part of its preparations for submission of its trachoma elimination dossier. The PNPSO therefore developed a process to determine if and where confirmatory mapping might be indicated.

Methods

The PNPSO first developed a decision-making algorithm (Figure 1) to classify districts as trachoma suspected and in need of confirmatory mapping, or not suspected/not needing confirmatory mapping. This was done through identification of risk factors for trachoma based on published literature and from a desk review exercise conducted in Senegal at the beginning of the Global Trachoma Mapping Project. The algorithm first divided HD by whether there was an Eye Health Unit or not, as clinical data would not be available in those without an Eye Health Unit (Figure 2).

Indicators were assigned a number of points, based on known or likely contribution to trachoma risk (Table 1). Each district could score between 0-32 points. Districts with scores ≤ 6 would be considered non-trachoma suspect; those between 7-19 would be considered indeterminate and a trachoma rapid assessment would be conducted; and those between 20-32 would be considered suspect and confirmatory mapping would be conducted.

The PNPSO then gathered the data through desk reviews consisting of: clinical register reviews and extracting data between 2015-2019; reviewing Regional Hygiene Office reports between 2015-2019; and interviews with key informants (healthcare workers, RHO staff, community members).

Data were then compiled into an Excel spreadsheet and assigned scores according to the pre-defining scoring system.

Figure 1. Decision-making algorithm for trachoma confirmatory mapping in Senegal

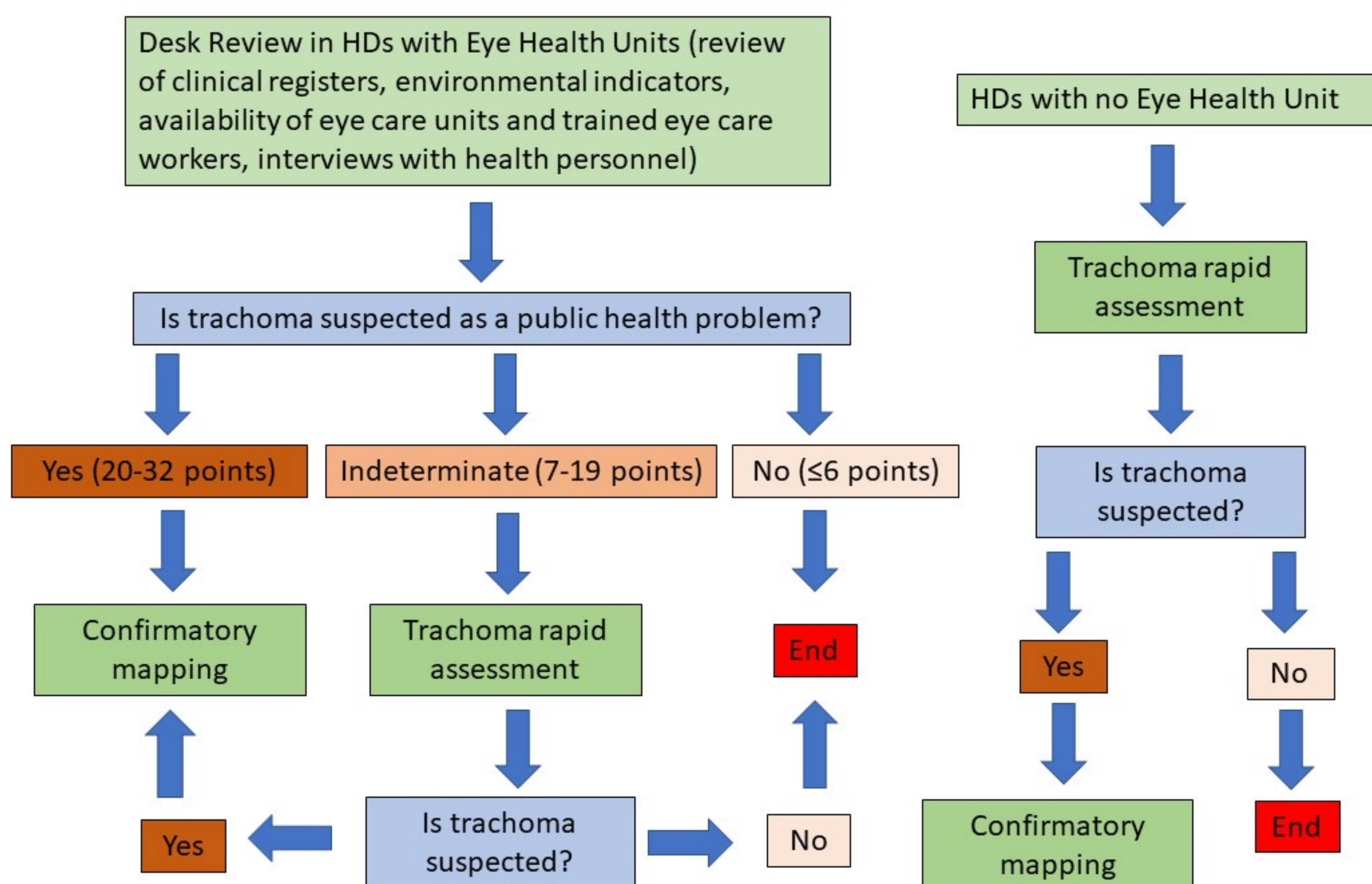
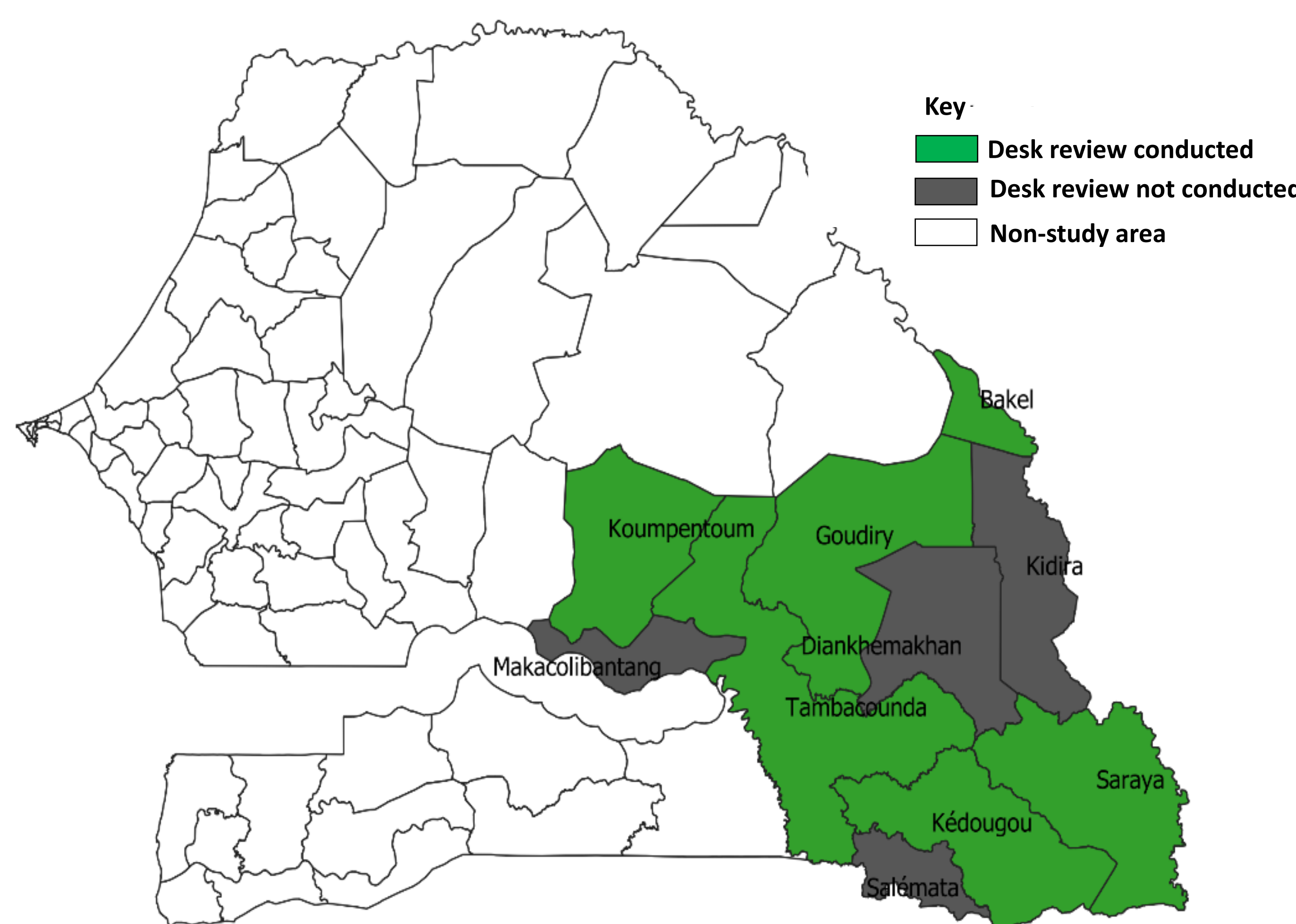


Figure 2. Tambacounda and Kédougou Regions



Results

Of the 10 HDs in the Kédougou and Tambacounda HDs of Senegal, only 6 had an eye health unit and were included in the desk reviews. The other four health districts were then targeted for trachoma rapid assessments according to the decision-making algorithm.

Of the 6 HDs where the desk reviews were conducted, five were determined to be of “indeterminate” status and in need of trachoma confirmatory mapping was indicated, and one HD was determined to be suspected as having trachoma as a public health problem and warranting confirmatory mapping (Table 2).

After a discussion between the PNPSO and Senegal’s Trachoma Expert Committee, the Committee recommended to the PNPSO to conduct confirmatory mapping in an evaluation unit consisting of Kédougou (identified as warranting confirmatory mapping), along with the HDs of Salemata and Saraya, due to the small combined population of $< 250,000$ and to economize by not needing to conduct two planned trachoma rapid assessments.

Discussion

For countries to receive validation of elimination of trachoma as a public health problem from the WHO, evidence needs to be presented that all trachoma endemic districts have been identified, reached and maintained the elimination targets.

Where trachoma mapping has not occurred, occurred many years ago, or in districts with large shifts in demography, health and/or WASH access, a process to determine confirmatory mapping needs will be useful justification for the trachoma elimination dossier. This process can help countries to have documentation to show their decisions to map or not map; enable countries to gather additional data where indicated (and implement the SAFE strategy to populations still in at-risk for trachoma. The usage of trachoma desk reviews as a first step in this process will help to gather evidence systematically while ensuring economy of resources.

Other National Trachoma Programs with unmapped HDs or for which a new look at the current status of a HD may wish to consider undertaking a similar process.

Table 1. Variables collected in desk review

Domain	Variable	Score
WASH	< 50% of HH have water provision	Yes= 1 No= 0
	< 50% of HH have a latrine or toilet	Yes= 1 No= 0
	<50% of HH have a handwashing station near latrine or toilet	Yes= 1 No= 0
Clinical	≥ 10 cases of TF among children < 15 years of age during at least one year in the past five years.	Yes= 5 No= 0
	≥ 10 cases of TF in adults 15 and older during at least one year in the past five years	Yes= 5 No= 0
	≥ 10 cases of TT in adults ages 15 and above during at least one year in the past five years	Yes= 5 No= 0
Contextual	District shares border with a known trachoma-endemic HD	Yes= 5 No= 0
	Community views trachoma as a public health problem	Yes= 1 No= 0
	Absence of trachoma elimination activities	Yes= 1 No= 0
	Absence of partners for trachoma elimination activities	Yes= 1 No= 0
	<50% of health post nurses are trained on TT	Yes= 3 No= 0
	<50% of community health workers (relais) trained to identify TT	Yes= 3 No= 0

Table 2. Results and Next Steps from Desk Reviews

District	Eye Health Unit?	Score (out of 32)	Status	Decision / Next Step per protocol*
Kidira	No	N/A	N/A	Trachoma rapid assessment
Diankemakhan	No	N/A	N/A	Trachoma rapid assessment
Makacolibantang	No	N/A	N/A	Trachoma rapid assessment
Salemata	No	N/A	N/A	Trachoma rapid assessment
Kédougou	Yes	20	Trachoma Suspected	Confirmatory mapping
Goudiry	Yes	9	Indeterminate	Trachoma rapid assessment
Bakel	Yes	16	Indeterminate	Trachoma rapid assessment
Koumpentoum	Yes	10	Indeterminate	Trachoma rapid assessment
Tambacounda	Yes	14	Indeterminate	Trachoma rapid assessment
Saraya	Yes	11	Indeterminate	Trachoma rapid assessment

*After the Senegal Trachoma Expert Committee reviewed the results of the desk reviews, the Committee recommended to the PNPSO to combine the HD of Kédougou with the HDs of Salemata and Saraya in the confirmatory mapping. This is because of the small populations in all three HDs ($< 250,000$ total population across the three HDs).