Vaccinations in Emergencies:

A Framework for Decision-Making

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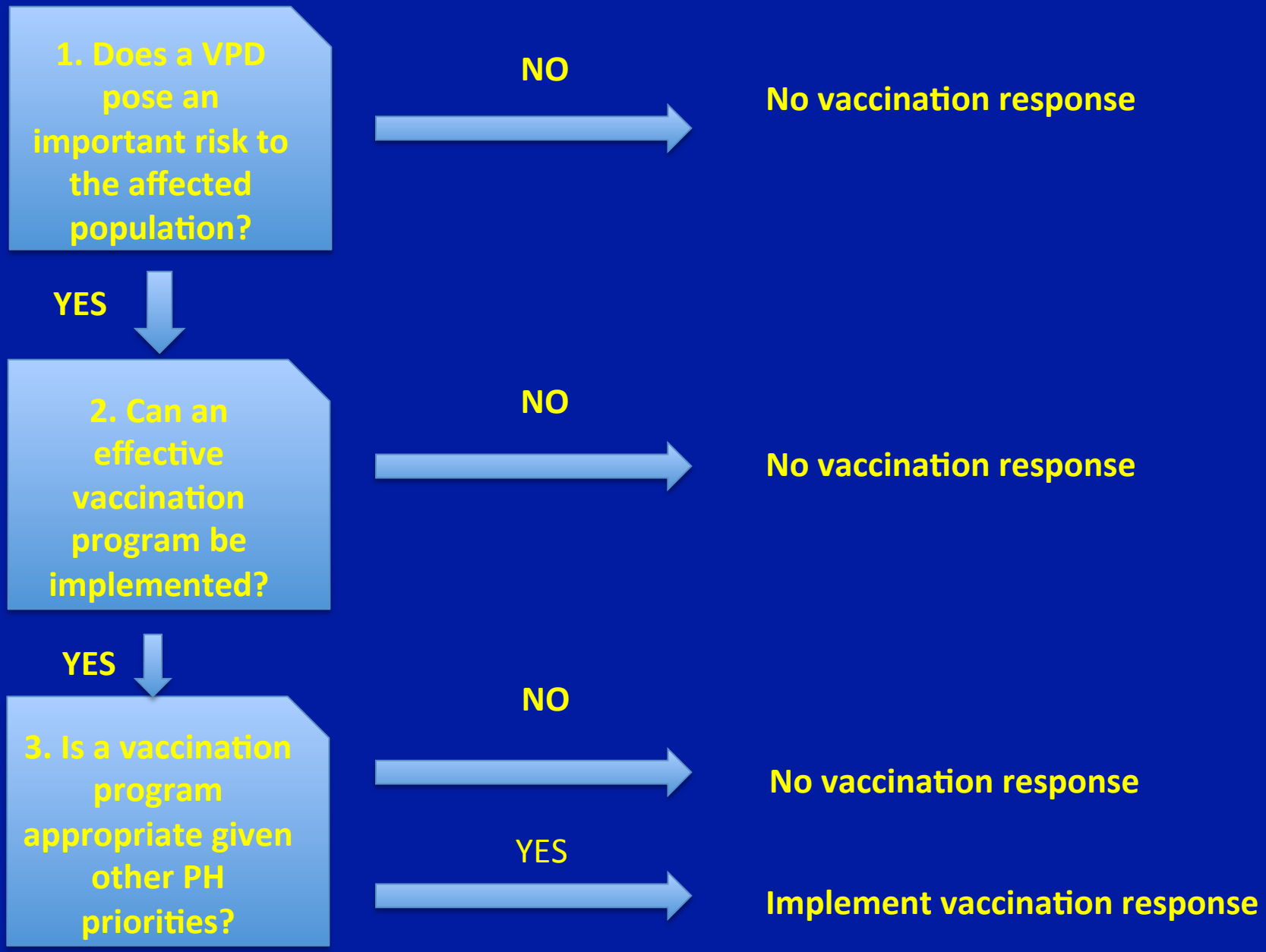
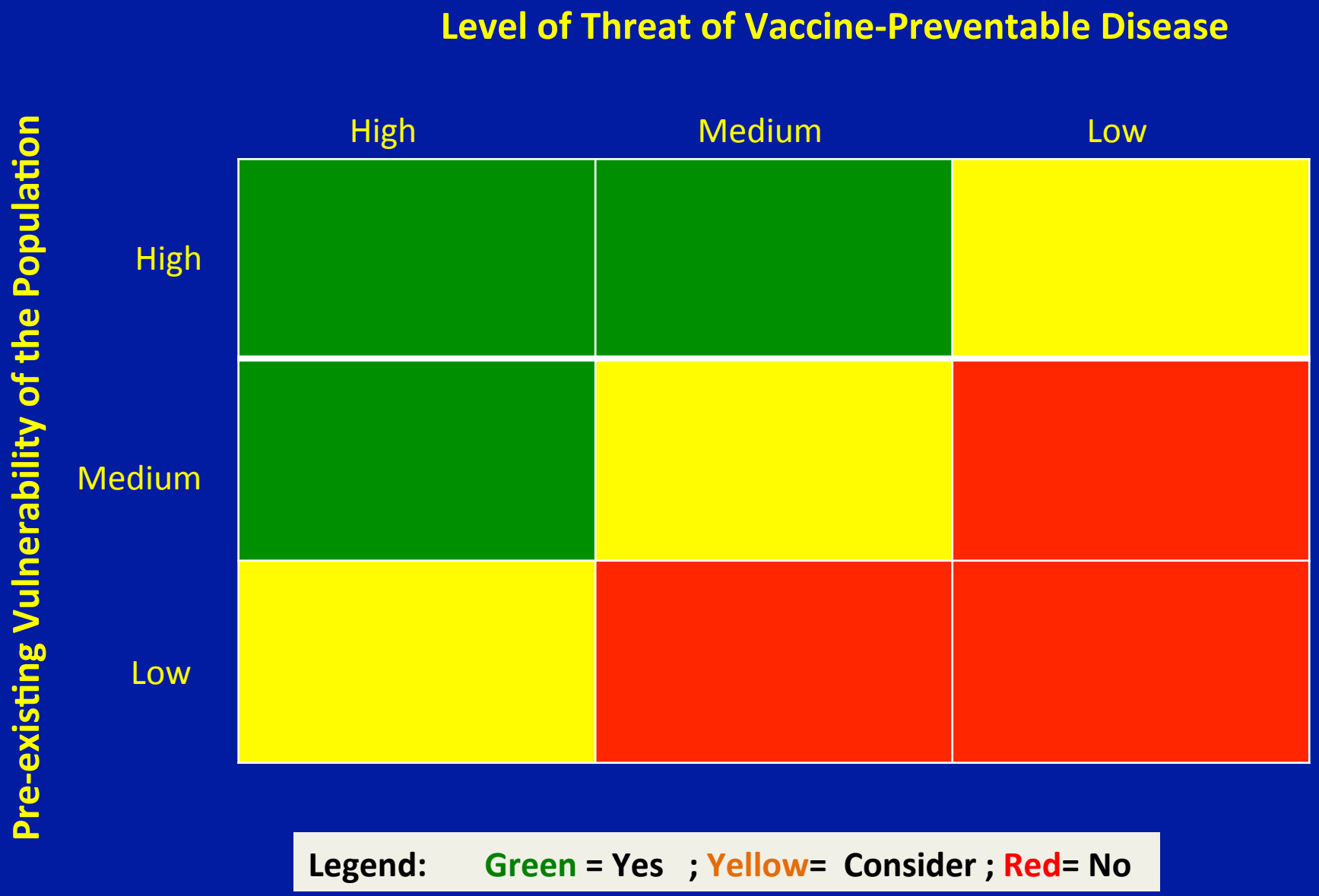
Introduction

- **Scope of the framework**
  - **Principal focus is on mass vaccination as an immediate emergency response**
  - **Does not address re-establishment of routine immunization, vaccination response to a VPD outbreak, or 'using' the emergency as a means to boost sub-optimal routine coverage**

Decision Making Steps



Step 1. Epidemiological Risk Assessment



Determinants of Pre-existing Vulnerability

- level of vaccination coverage (routine + SIA)
- epidemiological data (reported cases & recent outbreaks)
- nutritional status
- HIV sero-prevalence
- demographic characteristics

Determinants of Level of Threat

- migration to/from endemic area
- access to health services
- population density
- access to water/sanitation/hygiene
- increased level of sexual violence
- seasonality of disease

Step 2. Vaccine Characteristics& Amenability to Mass Campaigns

- Availability of vaccine
- Vaccine presentation
- Cost per dose
- Single dose vaccine efficacy
- Number of doses required to achieve efficacy
- Full recommended schedule

Step 2. Vaccine Characteristics& Amenability to Mass Campaigns

- Logistic considerations
  - –Doses per vial
  - –Cold chain availability and adequate volume
  - –Ease of administration
  - –HR capacity and skills
  - –Assuring vaccine safety

Scoring/Weighting Vaccine-Specific Characteristics: An Example

Vaccine (s)	Will the vaccine work?				Is it logistically feasible?		
	Disease burden	Vaccine efficacy			Vaccine cost/dose	Cold chain volume	Dose per vial
		Serotypes	Full schedule	1 dose	USD ($)	cm^3/dose	
Measles	🟢	🟢	🟢	🟢	🟢 <0.20	🟢 2-4	🟢 20
PCV (10-valent)	🟢	🟡	🟡	🟡	🔴 7-26	🟡 4-13	🔴 2
Hib (conjugate)	🟢	🟢	🟢	🔴	🟢 3-4	🟡 10-14	🟡 10
Rota virus	🟡	🟡	🟡	🔴	🔴 7-100	🔴 11-75	🔴 1
Cholera	🟢	🟢	🟡	🟡	🟢 0.7-6	🔴 74	🟡 20

Legend: ***Green** = Yes ; **Yellow**= Consider ; **Red**= No*

Step 3. Context-Specific Considerations

- Security
- Political benefit
- Acceptable to population
- Reduces fear and panic
- Replaces or reduces need for other interventions
- Does not interfere with other high priority relief interventions

Remaining Work

- Specifying variables for all three steps
- Developing scoring/weighting system
- Formal presentation of case studies
- Developing work sheets for each vaccine-preventable disease and for each vaccine
- Writing “tool book”
- Field testing (?)