

REACHING “ZERO BY 30”: THE GLOBAL STRATEGIC PLAN

Unleashing the Power of Rabies Vaccines

24 May 2018, DCVMN Webinar

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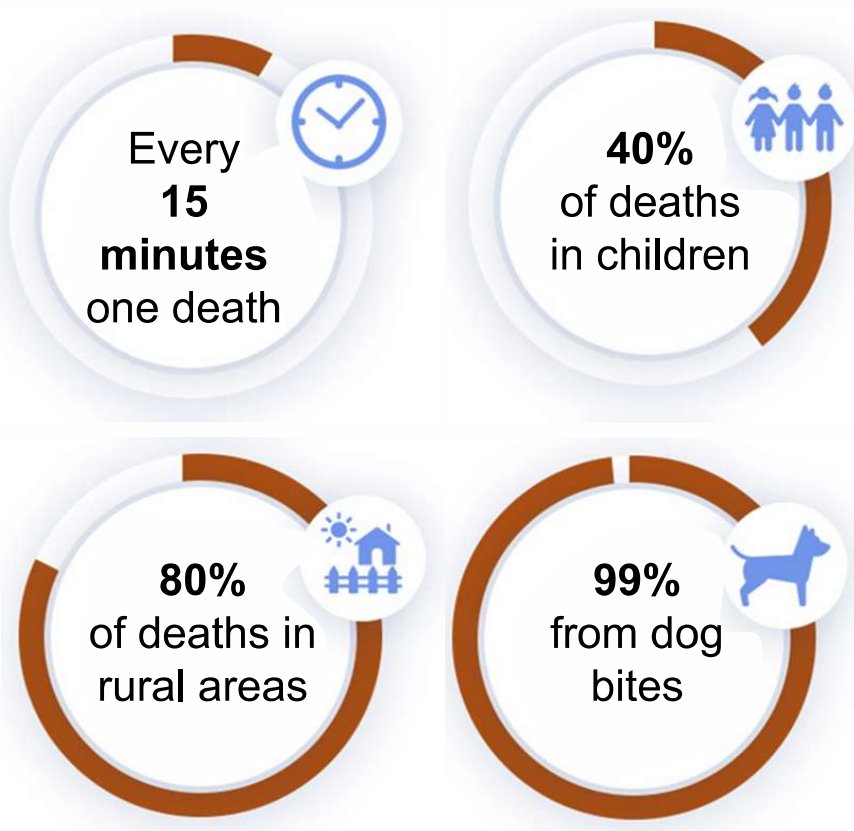
Dr Annette Ives, Immunologist, Scientific Consultant



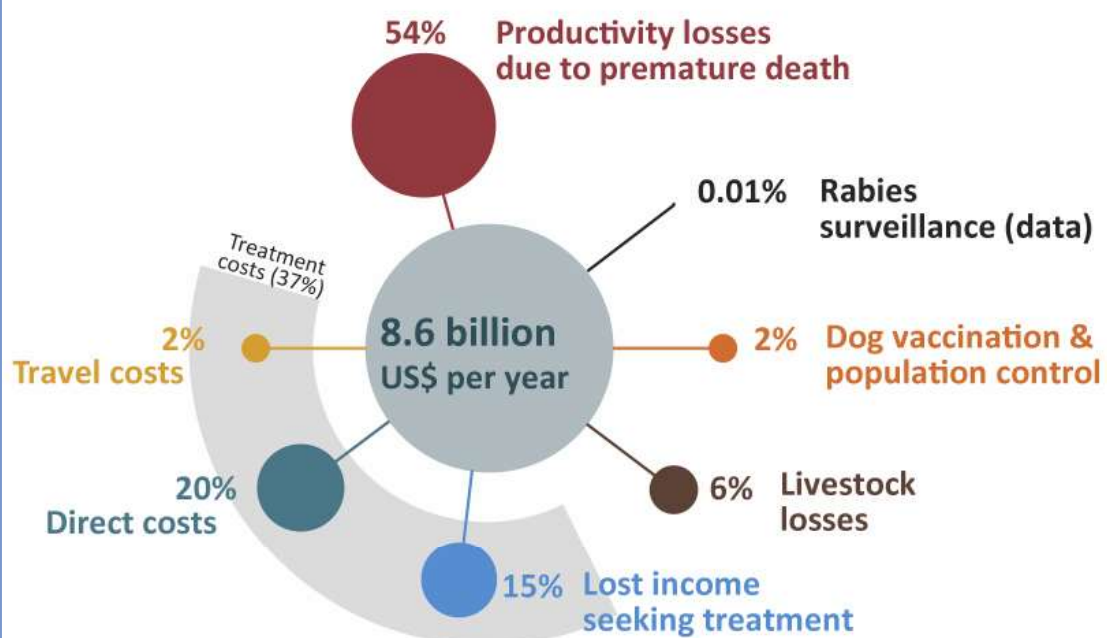
Rabies is a lethal zoonotic disease



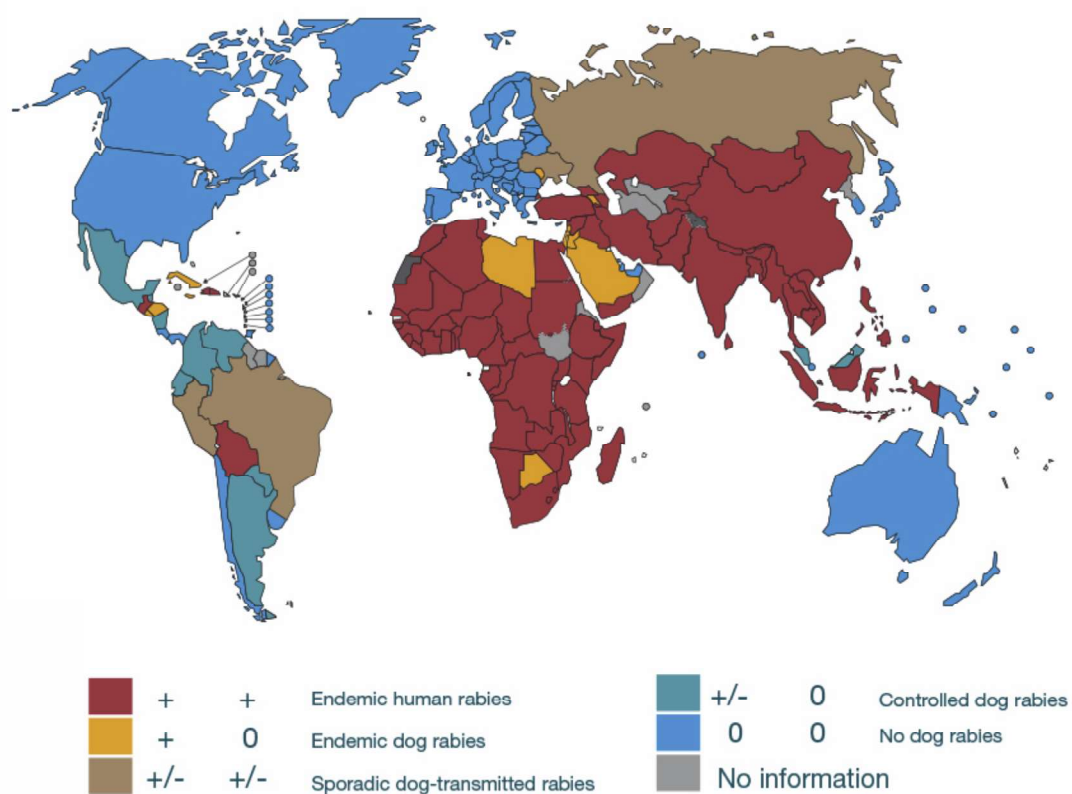
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It burdens
vulnerable
populations



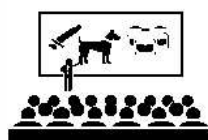
Endemicity of dog transmitted rabies



Rabies is preventable

Needs safe, efficacious and optimally priced biologicals

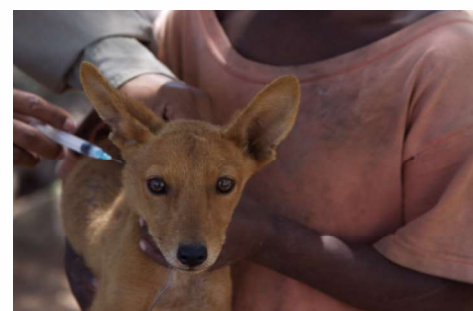
Awareness



Timely care



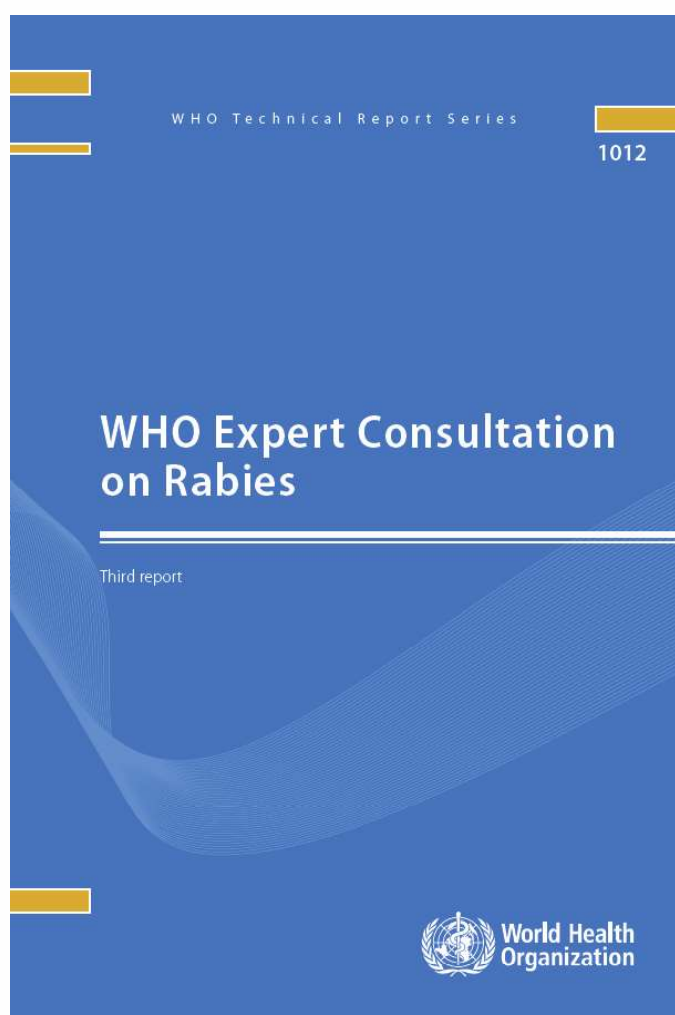
Dog vaccination



New WHO position on rabies immunization:

Safety - programmatic savings - feasibility

Topic	2010	2018
PEP regimen duration	3-4 weeks 4-5 visits	1-2 weeks 3-4 visits
Vaccine savings PEP	ID: 0.8 ml IM: 5 ml	ID: -20% (0.6 ml) IM: -20% (4 ml)
RIG infiltration	Wound + distant IM	Wound only - 40% RIG vials - 80% RIG volume/ person
RIG allocation	All category III exposures	When scarce: High risk cat. III exposures



Updated Report

Some highlights include:

- Practical approaches to improve surveillance in animals and humans
- Updates on laboratory techniques
- Guidelines for palliative care of rabies patients
- Safe and feasible human and animal immunization policies
- Potential of new rabies biologics to improve delivery to (rural) communities
- Role of oral vaccination in dog campaigns
- Processes for countries to validate 0 human rabies deaths, verify breaking of dog-mediated rabies transmission and rabies freedom
- Research agenda

http://www.who.int/rabies/resources/who_trs_1012/en/

A mission driven coalition to eliminate dog-mediated human rabies by 2030 “Zero by 30”



The **UNITED AGAINST RABIES** collaboration

EMPOWER

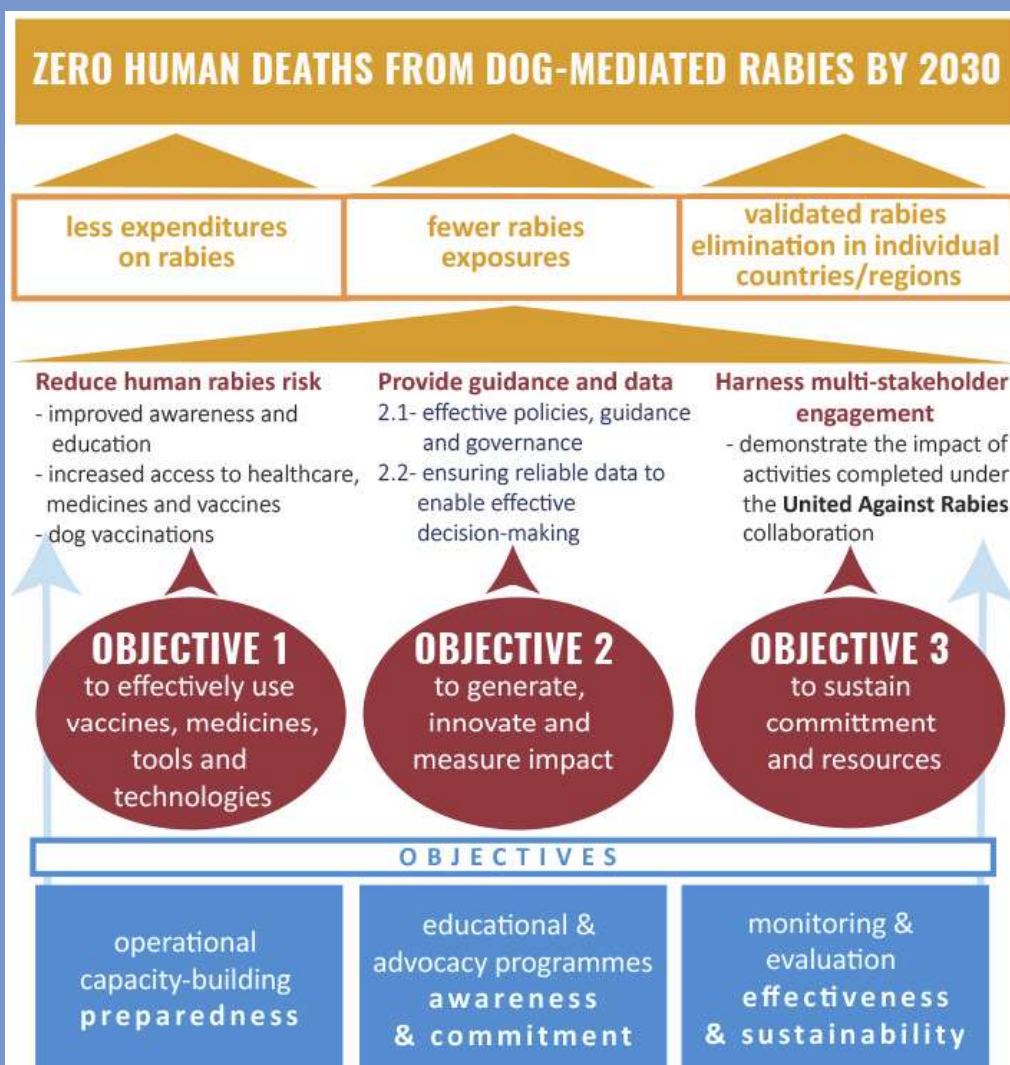
ENGAGE

ENABLE

Puts countries at the centre



Theory of change to reach 'Zero by 30'



Objectives

Survey



42 companies contacted

Data collected
anonymously

Map global rabies biologic market



Production capabilities

Product characteristics

Inform global strategy to end human rabies deaths

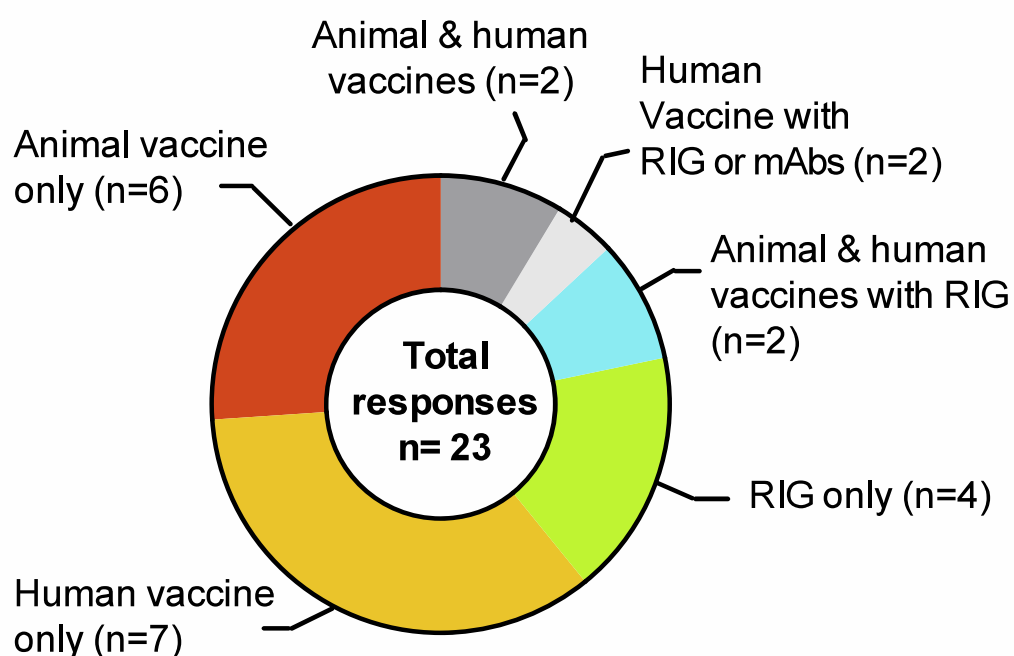


Can market support
country demand? ↑

Inform stockpile & bank
development?

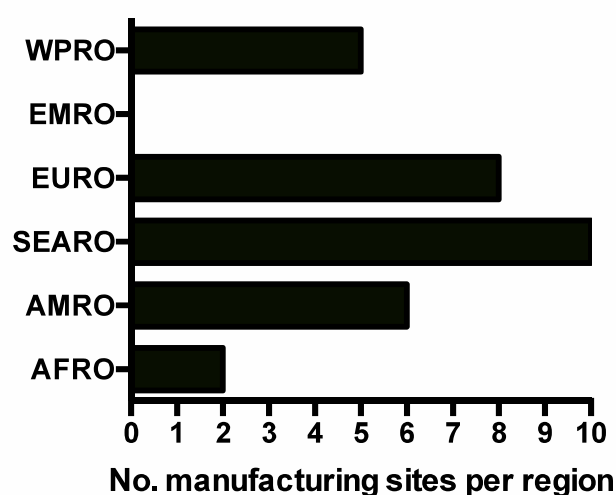
Summary statistics of respondents

- 54.8% response rate
(23 of 42 manufacturers)
- Human vaccines n=13
- RIG and mAbs, n=7
- Animal vaccines, n=10

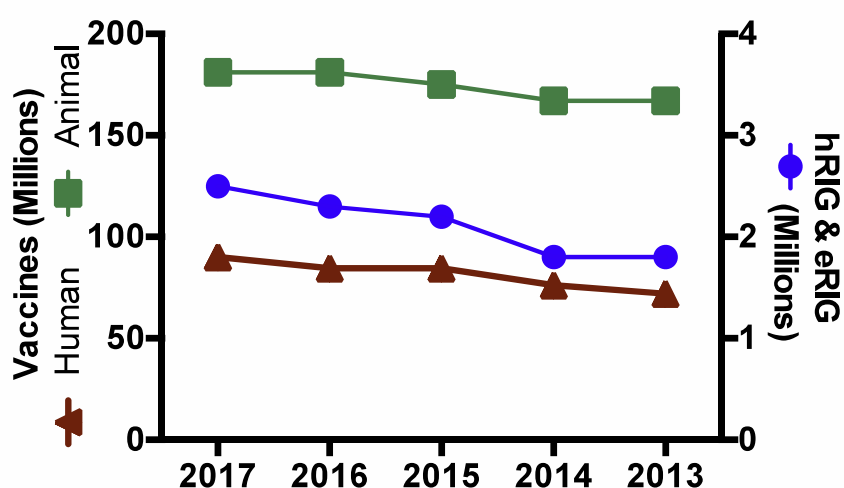


Global manufacturing locations & capacity

Regional manufacturing

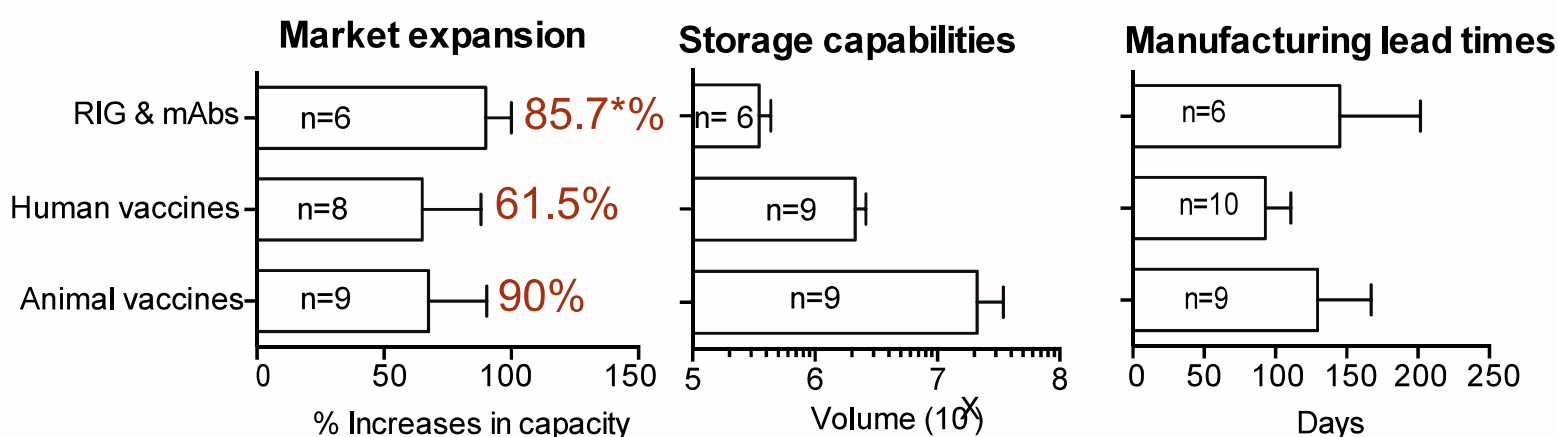


Total manufacturing capacity



- China and Indian manufacturers are likely highly represented in SEARO
- The production of RIG doses was lower than vaccines; reflects lower demand compared to vaccines.
- For 2017, one manufacturer indicated a production capacity 2 million vials of mAbs




Characteristics of market



* Percentage of total respondents who could expand production

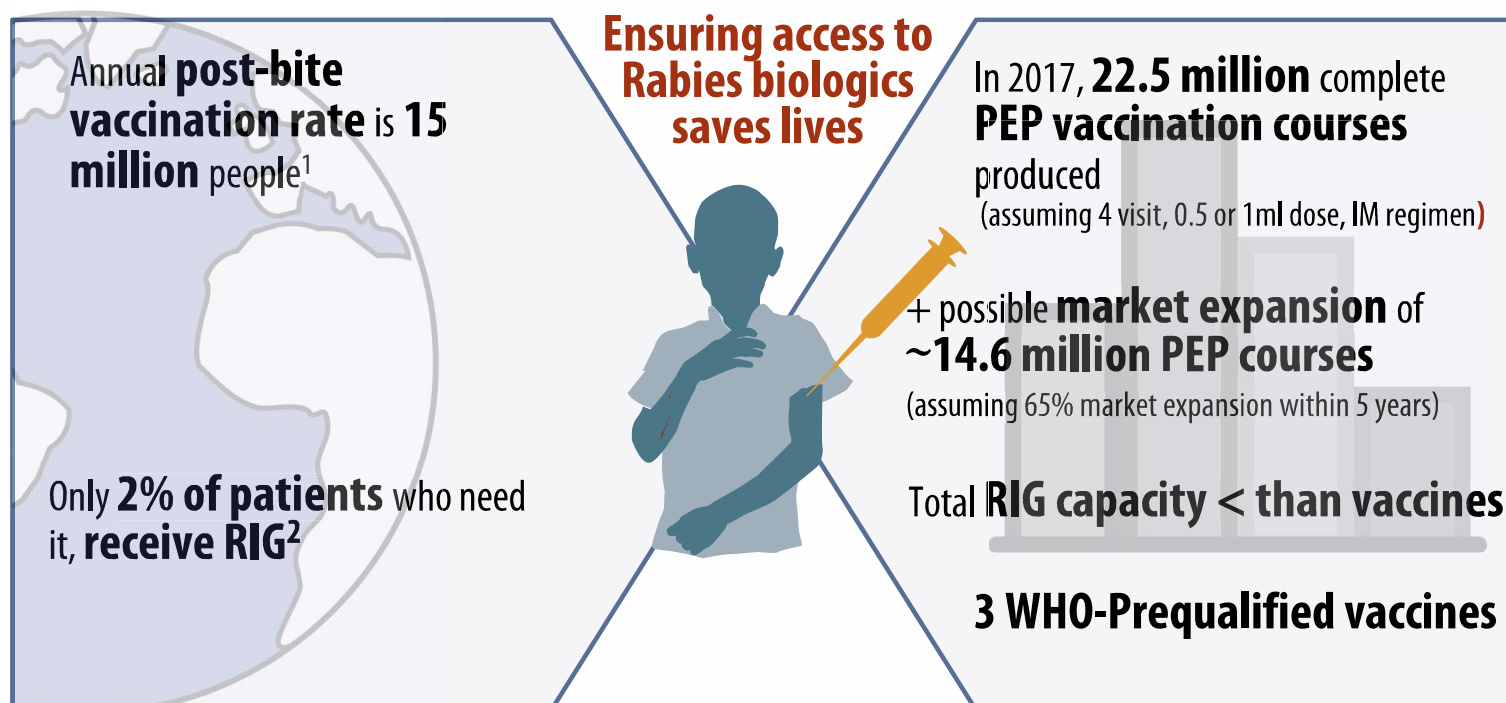
- Many manufacturer's could expand production
- Many could store biologics; important consideration for rabies biologic banks
- Vaccine and RIG lead times ranges were 0-420 days, and 30-420 days, respectively

Biological characteristics / formulation of vaccines & immunoglobulins

	 human vaccines	 RIG & mAbs	 animal vaccines
Biological source	Cell derived, n=13	Cell line, n=2 eRIG, n=2 hRIG=3	Cell derived, n=9
Formulation vial size (mean \pm SEM)	Lyophilized 92% 0.67 \pm 0.07	Liquid 86% 3.13 \pm 1.13	Liquid 100% 1.02 \pm 0.09
Storage 2-8°C (No. responses) Thermotolerance (%) Vial monitors	13 69% 8	7 57% 1	7 29% 2
Administration Route (% of responses)	IM only, n=4 IM:ID, n= 9	IM only, n=4 IM:ID, n=3	IM and/or SC, n=8 Oral, n=1

3 vaccines were WHO pre-qualified

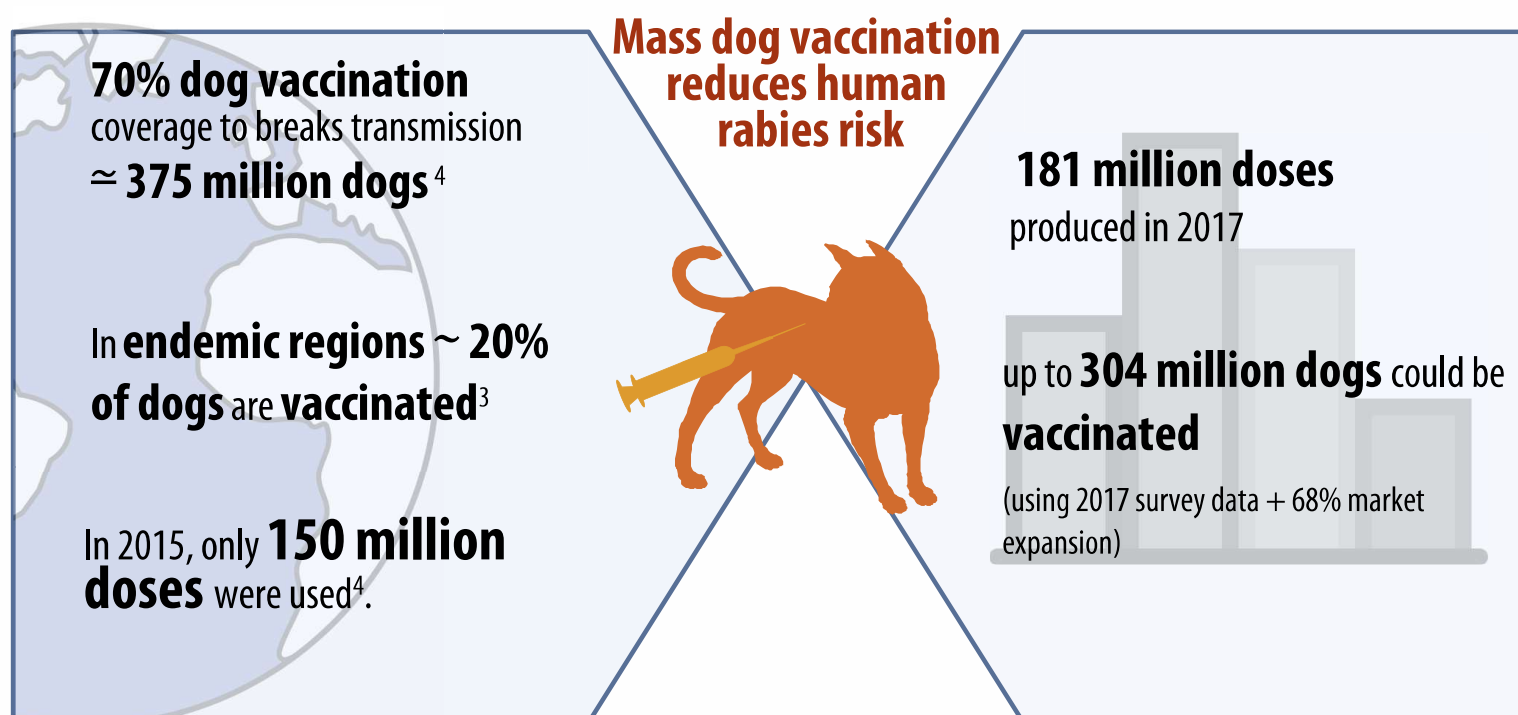
Conclusions: Rabies biologics for human PEP



¹World Health Organization. WHO fact sheet on rabies. 2017; Available from: www.who.int/mediacentre/factsheets/fs099/en

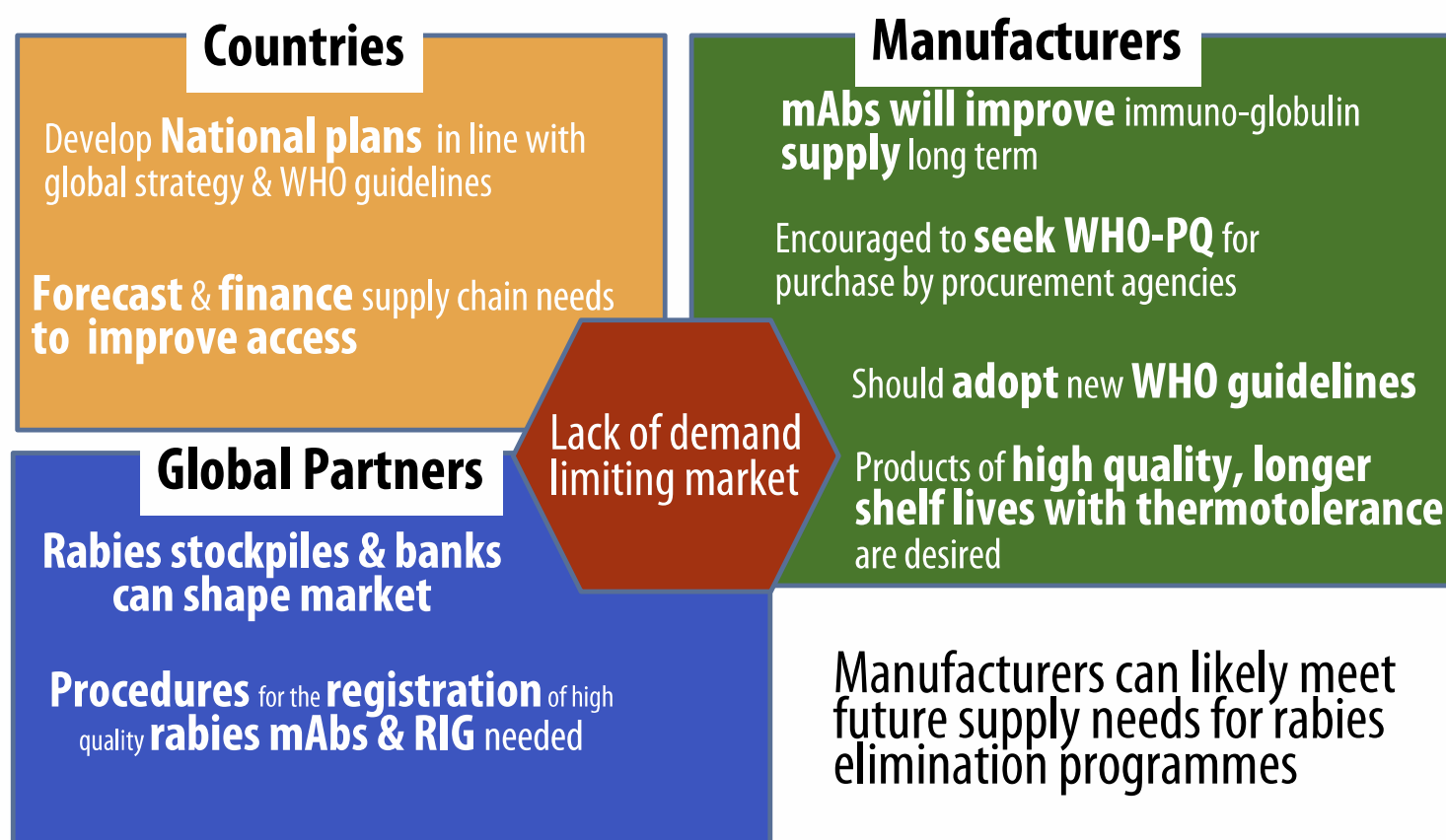
²WHO. Background paper: Proposed revision of the policy on rabies vaccines and rabies immunoglobulins. 2017; Available from: http://www.who.int/immunization/sage/meetings/2017/october/1_Background_paper_WG_RABIES_final.pdf

Conclusions: Animal vaccines for dog vaccination



³ Rupprecht, C., I. Kuzmin, and F. Meslin, Lyssaviruses and rabies: current conundrums, concerns, contradictions and controversies. F1000Res, 2017. 6: p. 184.

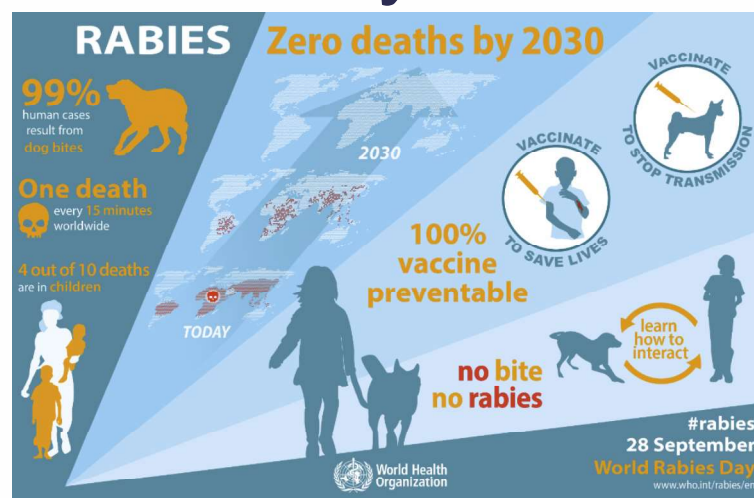
⁴ Wallace, R.M., et al., Elimination of Dog-Mediated Human Rabies Deaths by 2030: Needs Assessment and Alternatives for Progress Based on Dog Vaccination. Front Vet Sci, 2017. 4: p. 9



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Thank you!



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<http://www.who.int/rabies/en/>