

IMMUNIZATION SYSTEM ACTIVITIES PROJECT

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**START
CENTER**

STRATEGIC ANALYSIS,
RESEARCH & TRAINING CENTER
Department of Global Health | University of Washington

ROADMAP



PROJECT OBJECTIVE



METHODS: Countries & Approach



FINDINGS: Synthesis & Comparison



DISCUSSION: Takeaways & Limitations

IMMUNISATION
INJECTION ROOM



PROJECT OVERVIEW

Objective: Summarize current work to strengthen immunization systems and increase vaccine coverage for children in low- and middle-income countries

Methods: Qualitatively analyze content and themes from country-level GAVI documents.

Primary focus

- Current country priorities and challenges
- Trends across BMGF Vaccine Delivery team's "country segments"

PROJECT TEAM



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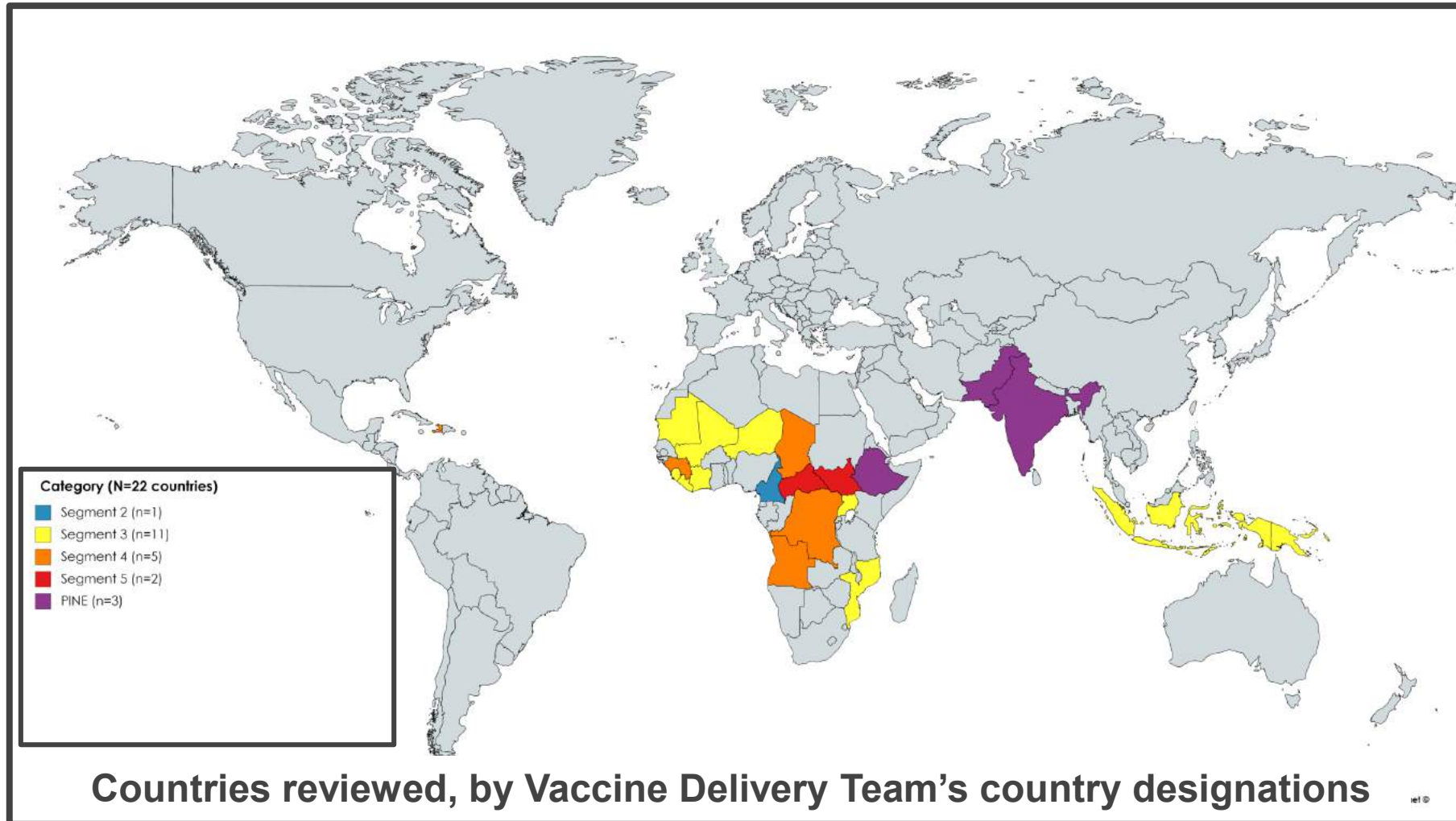
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ROADMAP



COUNTRIES REVIEWED

22 COUNTRIES INCLUDED ACROSS TWO REVIEW PHASES



COUNTRIES

Segment 2: Cameroon*

Segment 3: Cote d'Ivoire, Indonesia*, Liberia, Mali, Mauritania, Mozambique, Niger, PNG, Sierra Leone, Timor Leste, Uganda*

Segment 4: Angola, Chad*, DRC*, Guinea*, Haiti

Segment 5: CAR*, South Sudan*

PINE: Pakistan, India, Ethiopia

*Countries from Phase I of review

COUNTRY SEGMENTATION



Developed by Vaccine Delivery Team

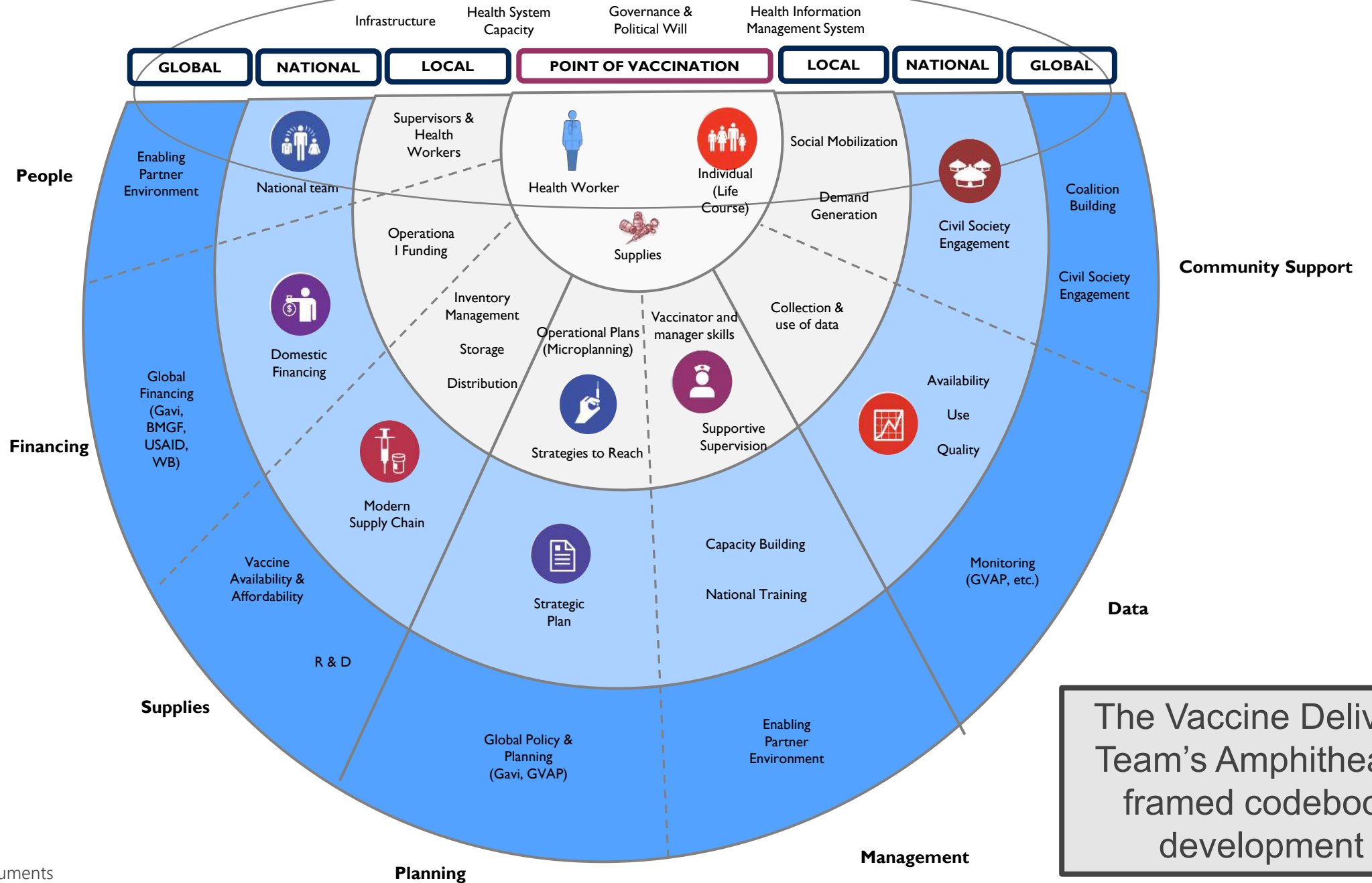


Criteria used to categorize countries includes coverage of DTP1, coverage of DTP3, DTP dropout, and level of conflict



Assumption that countries within a segment share some common characteristics and challenges with system barriers

VACCINE AMPHITHEATER



The Vaccine Delivery Team's Amphitheater framed codebook development

*Slide pulled from BMGF documents

PHASED APPROACH

PHASE 1: Developed and Piloted Approach (8 countries)

- Developed strategy and codebook
- Coded texts line-by-line with Dedoose
- Summarized and synthesized findings across domains and segment

April – June

July & August

August – November

PHASE 2: Applied Revised Approach (14 countries)

- Reviewed content and themes using revised codebook
- Summarized and synthesized findings

INTERIM: Refined Approach

- Presented to Foundation
- Revised strategy
- Created new codebook

APPROACH

1

Develop codebook: Determine themes based on “amphitheater” and Vaccine Delivery Team priorities

2

Review documents: Abstract information using predefined codes

3

Summarize country data: Highlight activities and gaps by country, topic, and content areas in large table

4

Synthesize findings: Identify similarities and differences across countries and segments by reviewing summary table

SOURCE DOCUMENTS

- Proposal for Health System Strengthening Supports (HSS)
 - Joint Appraisal Reports (JA)
 - Targeted Country Assistance (TCA) plans
 - Country-specific Gavi evaluations*
 - Country Metrics documents*
- *Only available for select countries*

CODES FOR ANALYSIS

1. TOPIC CODES

- **Context**

- **Data**
- **Demand**
 - *General*
 - *Intent*
 - *Access*
- **Financing**
- **Management**
- **Planning**
- **Supplies**
 - *General*
 - *Outreach*
- **Workforce**
 - *General*
 - *Motivation*
 - *Training*



2. CONTENT CODES

- **Political & Health System Context**
- **Vaccine Delivery Context**
- **DTP Coverage**



- **Barriers/Challenges**
- **Successes**
- **Proposed Plans**
- **Current Situation**
- **Partners**

SUMMARY TABLE: Approach



Information summarized from source documents into Excel file



Information organized by country, topic, and content area



Filterable cells, enabling comparison within and across countries

SUMMARY TABLE: Characteristics

Columns: Countries

Rows: Topic and Content Areas

Topic Country Segment	Content Country Segment	ANGOLA 4	COTE D'IVOIRE 3	ETHIOPIA PIE	HAITI 4
Sources	Document Citations	[1] HSS 2016 [2] JA 2017 [3] TCA 2018	[1] HSS 2016 [2] JA 2017 [3] TCA 2018	[1] HSS 2016 [2] JA 2017 [3] TCA 2018 [4] Country Metrics 2018	[1] HSS 2012 [2] JA 2016 [3] TCA 2018
Perceived Document Reliability	Quality of Sources	High. All documents are from past two years and were in English.	Medium. TCA was in French. Lack of detail in documents.	High. All sources in English and published within last two years.	Medium. HSS is old (from 2012). Information from this document has been explicitly noted to be from that timeframe.
Key Acronyms	Frequently occurring or significant country-specific acronyms	MINSA: Angolan Ministry of Health	NHIS: National Health Information System NHDP: National Health Development Plan	WUENIC: WHO/UNICEF Estimates of National Immunization Coverage	MPHP: Haitian Ministry of Public Health and Population ICC: Interagency Coordinating Committee NIS: National Information System cMYP: Comprehensive Multi-Year Plan CHU: Community Health Units
Context	Vaccine Delivery Context	2016 estimated immunization coverages from administrative data: [2] - 80% Penta3 (40% by IIMS; 64% by WHO) - 74% PCV13 - 63% Rota 2nd dose Coverage is difficult to estimate due to 45+ year-old census data. [1]	Only 45% of children 12-23 months of age are completely immunized, inclusive of: BCG (1 dose), DTP-HepB-Hib (3 doses), oral polio vaccine (3 doses), measles vaccine (1 dose), and yellow fever vaccine (1 dose). Immunization coverage improved from 2015 to 2016 --Shown in both administrative data and WHO-UNICEF estimates. --Although there were improvements, immunization coverage target of 92% was not reached for three antigens (IPV, yellow fever and DT2+). [2] p.3 --For MCV in 2016, all regions had coverage higher than 80%, and half the regions had coverage higher than 90%." [2] p.3 Geographical disparities exist for immunization coverage. --Low coverage geographical areas are North (39.1%), Northeast (24.8%), Northwest (29.0%), West (42.0%) and the Southwest (34.6%). [1] p.19	National coverage for vaccines has increased in recent years, but certain woredas/zones (i.e., in southwest Ethiopia) have actually seen lower coverage. [2], p. 23-24. --The four developing regions in Ethiopia, which are largely pastoral - Afar, Somali, Benishangul Gumuz and Gambella—continue to have low immunization coverage [2], p. 3 --Elsewhere statistics on coverage appear to have improved Exact coverage numbers are disputed because of large discrepancies between external estimates (e.g., WHO-UNICEF, DHS) and Ethiopia's administrative data. [2], p. 6. Ethiopia achieved polio free status and eliminated maternal and neonatal tetanus in 2017. [2], p. 4 Ethiopia has a birth cohort of approximately 3.2 million. [4], p. 1.	The population is only 46% urbanized, which varies greatly between departments. Around 2/3 of people live in scattered community settlements, complicating care provision strategies for remote communities. Immunization is challenged by limited access to healthcare. [1] p.8-9 Disparities between departments and communes still exist for 2015. Most communes in Artibonite, Nord, Nord-Ouest, Nord-Est, Sud, and Nippes have accessibility between 50% and 79%, but those in the others may have lower accessibility (<50%). [2] p.4 The earthquake of 2010 severely damaged or destroyed 60% of hospitals in the three hardest hit departments (West, Southeast, and Nippes). The offices of the Ministry of Health were badly affected, with the main building completely destroyed. Further, 1.2 million people were displaced and moved around, placing additional strain on the health system. Thousands were injured and more than 4,000 amputations were performed. New participants increased access to care but challenged the weak coordination of the health system. [3] p.44
Context	DTP coverage	In 2014, 73% DTP3 estimated by WHO, 80% by administrative data [1]	Immunization coverage improved from 2015 to 2016 --In 2016, all health regions achieved coverage of 90% or higher for Penta3. [2] p.3 Improvement in the disparities for these two tracer antigens (Penta3 and MCV). --Evidence from analysis of administrative data from 2012-2016 [2] p.3	No agreement exists on estimate. [4], p. 1 --Per Ethiopia's administrative data, coverage is 98%. --Per WUENIC, coverage is 77%. Coverage v	For Penta3, 42% of municipalities have a service utilization rate of <50%, while 35% are above 80%. The dropout rate from 2015 is 8.6%, above the target of 5%. [2] p.4
Context	Political & health system context	Conflict and financial crisis has severely affected Angola's health system. --80% of Angola's economy tied up in petroleum, which was heavily hit in 2014-2015 when global oil prices fell [1] --Investments in infrastructure stopped, leaving construction halted. The EPI building was not completed and the team works in trailers. [2] --Yellow Fever outbreak in late 2016, which affected 16 of 18 Angolan provinces, caused thousands of deaths and the diversion of health resources. [2]	Health system has 2 sides: administrative and care provision Administrative structure has 3 levels --The central level: define national health policy; support and overall coordination for health --The intermediate level: comprised of 20 regional directorates, coordinate and support health districts in implementing health policy --The peripheral level: made up of 82 health districts. operational unit of health system, coordinate activities and provide essential services	Political system has been shaken by Ethiopia has a health system Unrest continues to rock the country. --The country's prime minister resigned in February 2018 and was replaced by a new PM in April, which caused a nationwide state of emergency to be declared. [4] p. 4	Overall challenges include: [1] p.3, 11 --Weak supervisory capacity at national level --Weak supervisory capacity at national level

1,466 cells with country-level content
Phase 1: 416 cells
Phase 2: 1,050 cells

SYNTHESIS: Approach



Reviewed information from summary tables by country segment, topic, and content area



Identified key themes by topic
Identified similarities and differences by segment

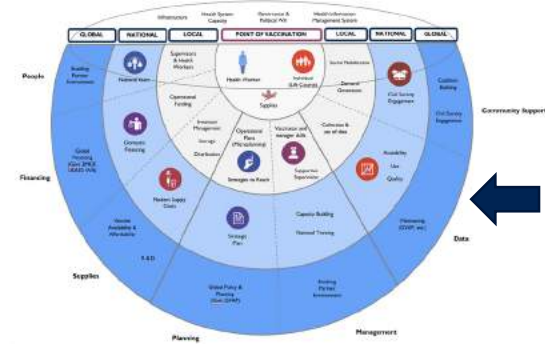


Documented high-level synthesis in PPT

ROADMAP



SYNTHESIS BY TOPIC



CURRENT FOCUS



SEGMENT COMPARISON

PINE

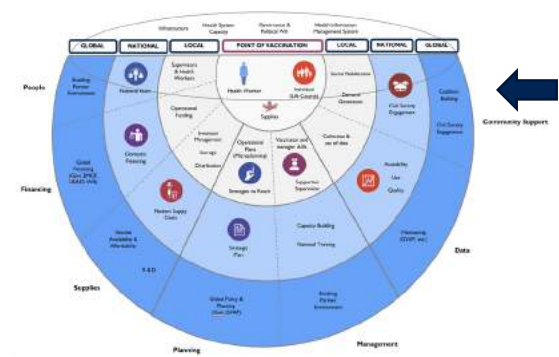
Segment 3

Segment 4

CHALLENGES



DEMAND



CURRENT FOCUS



- Focus on intent & access, but access not framed as “demand” issue
- Communication with communities primary way to improve demand
- UNICEF main partner for demand work

CHALLENGES



- Little evidence on impact of demand on vaccine coverage
- Mismatch between proposed activities and specified problems they seek to address

SEGMENT COMPARISON

PINE

- Increasing demand top priority
- Reasons for low demand vary widely

Segment 3

- Increasing demand prioritized in national plans
- Main focus on intent (e.g., communication, IEC, community services)

Segment 4

- Increasing demand not uniform priority
- Demand interventions may be cut when other issues arise

FINANCING



CURRENT FOCUS

- Decentralizing funds for vaccination
- Increasing financial audits and response to recommendations



CHALLENGES

- Inadequate funds
- Dependence on external funding
- Limited capacity to manage and use funds at subnational levels post decentralization
- Uncertainty about future funding as polio programs close-out

SEGMENT COMPARISON

PINE

- Multiple accounting systems make financial management complicated
- Large focus on domestic funding

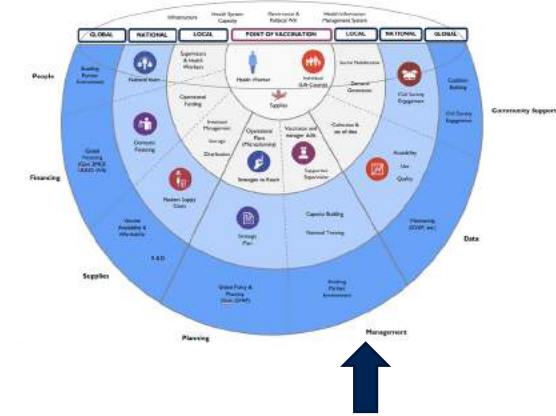
Segment 3

- Consideration of results-based financing
- Initiating domestic funding

Segment 4

- Struggles with timely disbursement and low utilization of funds
- High dependence on external funding

MANAGEMENT



CURRENT FOCUS

- Decentralization of responsibilities
- Capacity building for all levels of managers in decentralized systems
- Training focus for mid-level managers

CHALLENGES

- Insufficient quantity and quality of workforce
- Lack of management and supportive supervision
- *Note:* Little information provided on context-specific challenges

SEGMENT COMPARISON

PINE

- Focus on new technology and tools, especially for financial management

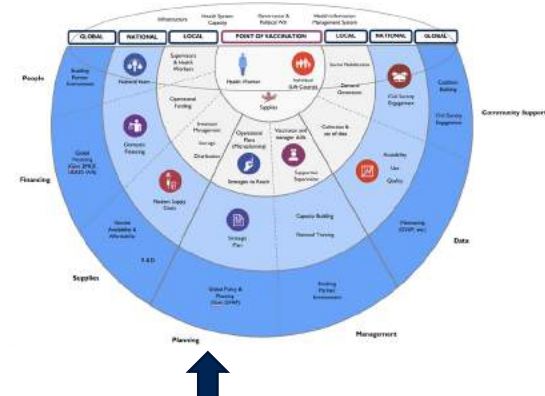
Segment 3

- Focus on improving supervision

Segment 4

- Focus on general capacity building and basic training
- Decentralization of management in initial stages

PLANNING



CURRENT FOCUS

- Microplanning to reach the unreached
- Aligning immunization and health plans
- Meetings with national steering committees to guide strategy

CHALLENGES

- Inconsistent implementation of plans
- Inadequate microplanning
- Inconsistent coordination between national and subnational levels

SEGMENT COMPARISON

PINE

- Focus on microplanning
- Attempts to leverage polio infrastructure for routine immunization
- Build partnerships with other domestic government entities

Segment 3

- Focus on national and microplanning

Segment 4

- Focus on national planning

SUPPLIES: Routine



CURRENT FOCUS

- Procuring new equipment for cold chain
- Building capacity to manage and maintain cold chain (i.e., supporting logistics and technical skill-building)



CHALLENGES

- Outdated equipment
- Broken equipment
- Limited management and capacity available to maintain cold chain

SEGMENT COMPARISON

PINE

- Cold chain functional, but requires updates
- Progress made in logistics and procurement

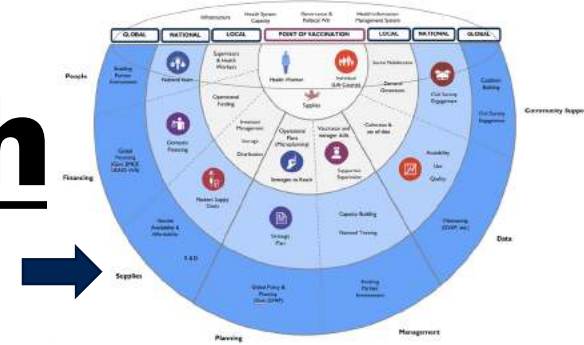
Segment 3

- Mixed functionality of cold chain
- Focus on cold chain modernization, management, and maintenance

Segment 4

- Widespread challenges with cold chain functionality due to broken equipment, gaps, and lack of human resources
- System stressed by introduction of new vaccines

SUPPLIES: Outreach



CURRENT FOCUS



- Increasing efforts to improve equity through communication, social mobilization, and outreach
- Periodic targeted campaigns (SIAs/PIRIs) to reach isolated areas

SEGMENT COMPARISON

PINE

- Prioritization of outreach activities
- Outreach developed based on polio infrastructure or polio vaccination activities

Segment 3

- Irregular outreach activities due to cold chain limitations, insufficient human resources, and geographic barriers

Segment 4

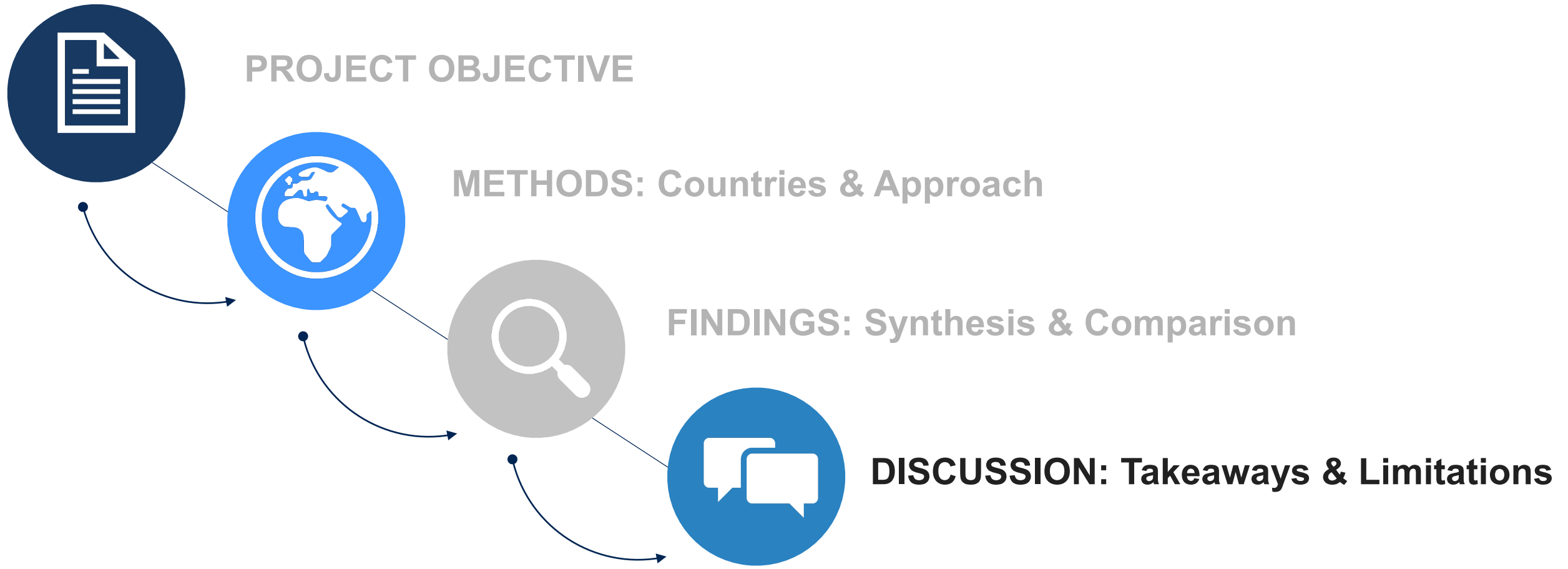
- Attempts made to initiate outreach activities but limited success due to cold chain limitations, insufficient human resources, and geographic barriers

CHALLENGES



- Limited outreach activities due to insufficient funding and human capacity
- Inability to regularly get to isolated or “hard-to-reach” communities

ROADMAP



CROSS-CUTTING FINDINGS

1. Interconnectedness of supply and demand

- Supply and demand challenges are related and should be assessed together
- Interventions to increase demand are connected to interventions related to increase supply

2. Growing pains due to decentralization

- Countries need to align systems, e.g., management and finance, to overcome challenges with decentralization
- Limited capacity exists at lower subnational levels to assume decentralized responsibilities

3. Prioritization of “hard-to-reach” populations with little success

- Hard-to-reach populations are unique to each setting but exist in every country, regardless of segment
- Little/no successes noted in finding approaches that work to provide immunizations to these groups

4. Further emphasis on workforce needed to ensure sustainable gains, especially in cold chain

- Investment in cold chain infrastructure is on-going and new equipment is needed in most countries
- Workforce to manage and maintain equipment is insufficient and not focus of most investment

SPECIAL CONSIDERATIONS

COUNTRIES WITH RECENT POLIO INVESTMENT

Possibilities to leverage polio infrastructure for routine immunization

- Much infrastructure in place for Polio Special Immunization Activities
- Polio vaccine infrastructure can be used for routine immunization outreach and monitoring after polio eliminated

Polio eradication could impact immunization workforce

- Polio workforce sometimes helped support routine immunization
- Loss of polio funding could mean loss of vaccination healthcare workers

COUNTRIES RECOVERING FROM EBOLA EPIDEMIC

Ebola positively affected health funding

- Increase in health systems strengthening post Ebola
- New funding is improving overall healthcare workforce, including in immunization sector
- Sustainability of changes unknown


Ebola negatively affected demand for vaccines

- Citizens lack trust in healthcare workers and health system post-Ebola

SEGMENT COMPARISON

	PINE	SEGMENT 3	SEGMENT 4
DATA	Poor data quality and use	Poor data quality and use	Poor data quality and use
DEMAND	Top priority	Increasingly prioritized	Not uniform priority
FINANCING	Prioritizing domestic funding	Considering domestic funding	Full dependence on external funding
MANAGEMENT	Focus on new technology and tools	Focus on improving supervision	Focus on general capacity building
PLANNING	Focus on microplanning & leveraging polio infrastructure	Focus on microplanning & national planning	Focus on national planning
SUPPLIES: Routine	Need to optimize details of cold chain	Mixed functionality of cold chain	Widespread challenges with cold chain
SUPPLIES: Outreach	Regular outreach	Inconsistent outreach	Attempts to initiate outreach
WORKFORCE	Insufficient quantity and quality of immunization workers	Insufficient quantity and quality of immunization workers	Insufficient quantity and quality of immunization workers

LIMITATIONS

- 
- Findings based on Gavi documents written to procure grants
 - Small sample size (n=22 countries from all segments)
 - Translation required for documents from select Francophone countries
 - Time period of documents varied between countries
 - Analysis could experience confirmation bias (e.g., artificially amplifying patterns to match 'common sense')



CONCLUSIONS

- **Broad focus**
Countries focus on array of issues, but difficult to assess priorities due to bias of source documents
- **Much progress made**
E.g., Prioritizing demand, shift to microplanning
- **Long-standing challenges remain**
E.g., Inadequate workforce, funding, data
- **Possibilities for innovation**
E.g., Use of Polio, Ebola funds to support routine immunization
- **Country segmentation useful to extent**
Broad patterns occasionally observed, but countries do not fit neatly into categories