

Administering Multiple Vaccine Injections to Infants During a Single Visit

Conclusions and Recommendations

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Summary:

Can Multiple Injections Be Given?

- Provider Acceptability and Acceptance
 - HCW overestimate parental concerns
 - HCW training is essential to assure acceptance
 - Approaches to reduce pain in children
 - Communication with parents: messages and methods
 - Administration approaches
- Parent Acceptability and Acceptance
 - Parental concerns do not prohibit multiple injections or have other major behavioural consequence
 - Communication is essential
 - Disease and the purpose of the vaccine
 - Safety and benefit

Summary:

Should Multiple Injections be Given

- Biologic Rationale (Immunogenicity as proxy):
 - Past evidence supports multiple injections of focus antigens (not part of review)
 - No studies on same limb/different limb immunogenicity comparisons
 - No studies on comparison of immunogenicity from co-administration vs. different visits
- Safety:
 - Evidence shows no systematic, consistent increases in reactogenicity / other AEs

Summary:

How Can Multiple Injections be Given

- Administration:
 - Location: thigh preferred; hip acceptable; deltoid acceptable when >12-18 mos
 - Distance apart: 2.5 cm reasonable, but lacks specific evidence
 - Method of administration: IM preferred to SC
- Vaccine Preparation/Programmatic:
 - Draw up vaccines for child at once
 - Cover needles with clean caps (scoop technique)
 - Administer in quick succession

Conclusions

- Multiple injections widely used in countries of some regions for many years
 - Countries in AFR and SEAR are newly implementing
- Evidence on multiple injections indicates:
 - Immunogenicity with multiple injection supports efficacy (past studies)
 - Reactogenicity and other AEs no more common or severe
 - Importance of HCW training
 - Communication with parents
 - Coverage not reduced when multiple injections introduced
- Limited specific data on:
 - Country challenges of recent implementation efforts
 - Detailed comparisons of immunogenicity and safety
 - Administration and programmatic best practices

Good Practice Statement

- **Evidence was not subjected to GRADE (certainty of evidence and strength of recommendations)**
- GPS used when
 - confidence that benefits outweigh harms
 - evidence may be indirect, difficult (or expensive) to find or synthesize
 - Evidence emerges when intervention is of low cost and with low potential to cause harm
- GPS attributes
 - Actionable statement
 - Net benefit unequivocal
 - Rationale for benefits explicit
 - Consider or address specific public health issues such as equity

Multiple Injection Good Practice Statement

- National vaccine schedules (especially when adding new vaccines) that include multiple vaccine injections in a single visit are fully acceptable, particularly insofar as they support timely and efficient vaccination of children
- Unless specific evidence exists that multiple vaccine injections have negative repercussions outweighing the benefits, such schedules should be implemented

Recommendations

- **Training** of HCWs including
 - Safety and immunogenicity not impacted by multiple injections
 - Information about likely overestimation of parental concerns
 - Vaccinator - caregiver communication
- **Communication strategies**: Improved strategies are needed for HCWs, community and professional societies about safety, effectiveness, and value of multiple vaccine injections
- **Limitations of data and evidence** on administration of multiple injections among infants brought to light by systematic review
 - Lack of systematic comparisons of risks and benefits of various possible sites for administration
 - Additional evidence on administration and programmatic best practices needed
- Countries should **adapt their schedules** to any new evidence on immunogenicity or adverse events from specific multiple injection vaccine combinations that may emerge in future
- Countries should consider **monitoring the acceptance and effects** of multiple injection visits to inform approaches to reduce any challenges

Recommendations (2)

- **SAGE endorsement** of WHO IPV recommendations
 - DTP-Hepatitis B-Hib vaccine (pentavalent vaccine), IPV, and PCV can be administered in the same visit
 - IM administration for all 3 vaccines acceptable
 - DTP-Hepatitis B-Hib vaccine in one thigh and IPV and PCV in another thigh, at least 2.5 cm apart can be done safely and effectively
- Modifications to infant and childhood vaccination schedule, as new vaccines or doses are added, should be **open to including multiple injections**
 - The need for multiple injections in a single visit is very likely
 - Encourage countries to adapt schedules to local environment, but hold as key principles
 - Earliest vaccination
 - Biologic requirements of dosing interval, dosing number, product combinations
 - Attaining highest coverage