Catch-up Scheduling for Childhood Vaccination

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PROJECT SUMMARY

- Optimization based decision support tool to help caregivers and providers construct catch-up immunization schedules
- Ensure timely vaccination against vaccine preventable diseases as recommended by the Advisory Committee on Immunization Practices (ACIP)

OBJECTIVES

- Timely vaccination rates
- Eliminate human error
- Expedite schedule generation
- Awareness and parental participation
- Public access to vital information
- Alleviate missed opportunities

SCHEDULING

Given past vaccination history for a child, each remaining dose that can be feasibly administered and is not contraindicated must be scheduled:

Dominance criteria

Schedule SX dominates SY if:
1. The number of doses administered in SX is no less than SY for each vaccine.
2. The timing of each critical dose administered in SY is no earlier than in SX.
3. The total delay in administering doses in common is less in SX.

Proposition

If SX dominates SY then any completion of SX cannot be better than the best completion of SX and thus, SY is unwarranted.

CURRENT SITE FEATURES

- Print schedule
- Save, upload, update vaccination history
- Display feasibility warnings
- Accelerated schedule option
- Links to CDC vaccine information sheets
- Footnotes for vaccine special cases
- Sign up for email updates
- Send feedback

SCHEDULER USAGE

- 96,000+ site visits
- 3500+ accessed the site via iPad, 3300+ via iPhone
- Over 50% of visitors self-identify as healthcare providers

FUTURE WORK

Online adolescent and adult immunization schedulers

PUBLICATIONS