SKUPIE RESEARCH · WHITE PAPER No. 2
Technical companion to White Paper No. 1

The Findability Problem

What one day of engineering revealed about how a parent finds vaccine information. The measurements behind "Why Families Cannot Find This," recorded as they were taken.

Eric Klasson, Founder, Skupie Inc. · Measurements taken August 6, 2026 · Published November 2026 · Reading time 8 min

The question we set out to answer

On August 6, 2026, our engineering team spent a full working day trying to answer one question: **which FDA-approved vaccines exist for each infectious disease, and what does the government say about them?**

The team had a written specification, federal API documentation, a scripted environment, and no time pressure. It took the entire day, produced eleven distinct dead ends, and required six separate corrections to the specification.

> Every fact below was measured, not assumed. This document exists because the difficulty itself is the finding.

Measured	What it is
1 day	Engineering time to scope, not build, the vaccine feature
11	Distinct dead ends
6	Corrections to our own specification
261,420	Records in the federal drug-label API; vaccines among them: 0
97	Rows in the FDA's list of licensed vaccines; disease column: none
21 of 76	Products (28%) with a parent-readable FDA information sheet
403	HTTP status the CDC returned for every automated request for a Vaccine Information Statement

1. What actually happened

The obvious front door was closed

Vaccines.gov is the site a parent would reach first. Its search functionality and substantially all of its vaccine information were removed in December 2025. What remains is a pharmacy locator powered by Google, whose own footer tells the user to

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phone the pharmacy and ask. VaccineFinder.org, widely cited as the alternative, is the same website under a second domain.

The obvious data source contained no vaccines

The federal drug label API, the natural place to look and the one our own specification named, holds 261,420 records and **not one vaccine**. Vaccines are licensed as biologics under a different center of the FDA, on a different regulatory pathway, in a different dataset. A search for Gardasil returns nothing. A search for Tylenol returns 118 results.

A parent would never learn this. Neither would most engineers.

The list of licensed vaccines exists, as a web page

The complete FDA list of vaccines licensed in the United States is one HTML table, 97 rows, two columns: product name and trade name. No API. No version number. **No column saying which disease any of them prevents.**

And you cannot work out the disease from the name

> Row 20 reads "Haemophilus b Conjugate Vaccine (Meningococcal Protein Conjugate)". It is a Hib vaccine. The word *meningococcal* names the carrier protein, not what the vaccine protects against. A parent, or a piece of software, reading that row and concluding "meningitis" is wrong, and would be wrong in a way that sends them to the incorrect product for their child.

Mapping 97 products to the diseases they prevent cannot be automated. It requires a person reading each product's licensed indication.

The plain-language document mostly does not exist where you would expect

FDA labels can include a Patient Information Sheet, a plain-language version for the person receiving the vaccine. It is **optional**. Checked across the labels of 76 products:

Measured	Result
Products with a parent-readable FDA sheet	21 of 76 (28%)
Products without one	55 of 76 (72%)
Vaccines a school typically requires	Almost entirely in the 72%

Adacel, a Tdap vaccine, has one. Boostrix, the other Tdap vaccine, does not. Same requirement, same grade, same purpose. One manufacturer wrote a parent version and one did not.

The right document exists, is federally produced, and is legally required

The Vaccine Information Statement is the document a provider **must** hand a parent before every dose, under the National Childhood Vaccine Injury Act. It is written for parents. It describes benefits and risks by statute. It is public domain. It exists for every routine childhood vaccine.

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The CDC website that hosts them refuses automated access entirely. Every attempt returned 403 Forbidden: the HTML page, the PDF, the RTF, and the CDC's own archival repository. The documents are reachable in practice only through a nonprofit partner's website, as PDFs, with inconsistent filenames. Three constructed URLs produced two working links and one dead one; the dead one was hepatitis B.

> **A team with a documented plan got a 67% hit rate guessing where federal vaccine safety documents live.**

2. The compounding problems

Beyond retrieval, three further conditions make this hard for anyone, parent or professional.

Two national authorities now disagree

In January 2026 the CDC revised the childhood immunization schedule without the usual advisory process, removing routine recommendations for several vaccines. The American Academy of Pediatrics published its own schedule covering eighteen diseases against the CDC's eleven, declined to endorse the federal one, and is litigating. Twelve medical organizations endorsed the AAP position.

A parent searching for "what vaccines does my child need" in 2026 can find two federal-adjacent answers that differ, both current, both authoritative-looking.

Documents disagree with their own index

The CDC's own table of current VIS editions lists hepatitis B as one date. The live hepatitis B page shows a different date and is marked **interim**. The index has not been updated since May 2025. A reader trusting the index would be reading a superseded document while believing it current.

School requirements are set by states, not by Washington

Fifty-one jurisdictions, each publishing independently. Some publish a dated regulation; at least one publishes an undated information sheet with no version marker of any kind. Two states whose parent-facing charts were checked against their actual regulations showed three discrepancies each. The simplified chart and the binding rule did not agree.

3. What this means

Nobody is at fault, and that is the point

Every institution here is doing its job. The FDA regulates products and publishes labels for prescribers. The CDC informs providers and produces statutorily required patient documents. States set school policy. Manufacturers write labels for regulators.

Nobody's job is to answer a parent's question.

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The information is complete, accurate, federally produced, and free. It is also distributed across four agencies, two regulatory pathways, fifty-one jurisdictions and one nonprofit, in formats designed for professionals, with no index that crosses them.

The gap is not information. It is findability.

This distinction matters for how Skupie describes itself. Skupie does not create health information, does not improve on federal sources, and does not decide anything for a family. It finds sourced information, organizes it around the question a parent actually has, and routes them to the people who can answer: their doctor and their school.

The moment matters too

A parent at 2 a.m. with a sick child does not need vaccine labels. They need to know whether this is an emergency and what to do right now, which is a different feature and a different urgency.

> **The vaccine question is a Tuesday-afternoon question.** The school sent a form saying Tdap is required before seventh grade. The parent has never heard of Tdap, does not know whether it is the same as a shot their child already had, and has twenty minutes between work and pickup.

Today, that question is answered by a search engine. The authoritative sources are not written for them, are not indexed together, and, as measured above, are not straightforwardly reachable even by people who know exactly what they are looking for. What ranks well instead is content written by people with something to sell or something to prove.

What this implies for how the product is built

Principle	Why the measurements support it
The difficulty is the moat	Anyone can link to the CDC. Assembling a maintained, cross-referenced, state-aware, bilingual corpus took a full engineering day to merely scope.
The sources are free and public domain	No licensing cost, no content commissioning, no clinical writing. The cost is engineering and source-fidelity review, both one-time per artifact plus maintenance.
Maintenance is the product	Every source found today changes on its own schedule: annually, seasonally, or without notice. A one-time scrape is worthless within a year. The recurring work is the defensible part.
The state layer is unique	Federal recommendations are contested; state school requirements are the operative rule for a family, and no consumer product organizes them.

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Principle	Why the measurements support it
Trust comes from attribution, not voice	Every claim carries its source and its date. A parent skeptical of vaccines and a parent anxious about deadlines are both served by showing them the government's own words rather than a summary.

What it does not mean

Skupie does not diagnose, does not assess whether a child is compliant, does not determine eligibility, does not recommend a vaccine, and does not tell a family where to go. It is an awareness and education product operating within the FDA General Wellness framework, and every architectural decision recorded on August 6, 2026 reinforced that boundary rather than testing it.

Method and provenance

HOW THE NUMBERS WERE TAKEN

Every measurement was taken on August 6, 2026, from the development environment or by direct fetch of the public source, and recorded with its evidence in the same-day engineering decision records. Nothing in this paper is an estimate. Where a number appears, it was counted.

WHAT HAS CHANGED SINCE

The sources named here have since been built into the Skupie app as 41 vaccine cards, each carrying its source and date. Skupie summarizes named public sources and does not seek clinical sign-off on them; each card is checked for fidelity to its source before it reaches a parent. The federal and state sources themselves may have changed since August 6, 2026; the figures are reported as of that date.

Researchers and public-health practitioners who want the underlying evidence for any figure may request it; we will show the measurement.

Cite this paper

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Skupie™ is an awareness and education product. It does not provide medical advice, diagnosis or treatment. Measurements in this paper were taken on August 6, 2026 and reflect federal and state sources as published on that date.

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