Table S1. Input Variables Required for Populating the TSE Model

| Variables                                                                 | Description                                                                 |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Size of target population                                                | Size of birth cohort                                                        |
| Coverage of existing vaccines for different population segments          | Coverage of existing BCG/DTP1-3 vaccines in Thailand by wealth quintiles and administrative regions |
| Vaccine schedules with which rotavirus is expected to be administered    | Schedule of BCG and DTP 1,2,3 vaccine programs                              |
| Mortality rates                                                          | Background mortality, infant mortality and neonatal mortality                |
| Disease incidence and related statistics                                  | Incidence of rotavirus infection by severity levels and related mortality    |
| Use of healthcare services                                                | Distribution of inpatient and outpatient visits by healthcare setting - primary, secondary, tertiary and healthcare centres |
| Healthcare costs                                                         | Healthcare costs for outpatient and inpatient cases by health care setting – primary, secondary, tertiary and healthcare centres |
| Adverse events incidence                                                 | Background intussusception rate per 100,000                                 |
| Vaccine storage and delivery                                             | Thailand specific costs for vaccine transport and storage                   |

Abbreviations: DTP, a combined vaccine against diphtheria, tetanus, and pertussis; BCG, Bacille Calmette Guerin vaccine.
| Vaccine characteristics | Rotavirus vaccine products* |
|-------------------------|-----------------------------|
|                         | RVV-1 | RVV-2 | RVV-3 | RVV-4 | RVV-5 |
| Number of doses needed  | 3     | 2     | 1     | 3     | 3     |
| Vaccine efficacy        | 50%   | 50%   | 65%   | 60%   | 72%   |
| Duration of protection  | 52    | 52    | 52    | 78    | 52    |
| (weeks)**               |       |       |       |       |       |
| Dosing schedule of first dose | DTP-1 | DTP-1 | DTP-1 | BCG   | DTP-1 |
| Price per dose (USD)    | 3.6   | 2.2   | 5     | 8.2   | 6.1   |
| Doses per vial          | 1     | 1     | 1     | 2     | 1     |
| Volume of the vaccine per dose (cm³) | 46.3  | 17.6  | 24.3  | 22.1  | 34.2  |
| Does it need a diluent? | Yes   | Yes   | No    | No    | Yes   |
| Volume of diluent/ other component (cm³) | 45  | 17.6 | - | - | 42 |
| Is an injection syringe/applicator required? | No | Yes | No | No | Yes |
| Volume of injection syringe (cm³) | - | 2 | - | - | 12 |
| Price of injection syringe/applicator (USD) | - | 0.04 | - | - | 0.02 |
| Is a reconstitution syringe/adapter required? | No | No | No | No | Yes |
| Volume of reconstitution syringe/adapter (cm³) | - | - | - | - | 21 |
| Price of reconstitution syringe/applicator | - | - | - | - | 0.01 |
| Method of cooling, Vaccine |     |     |     |     |     |
| National level          | Cold chain | Cold chain | CTC   | Cold chain | Freezer |
| Regional level          | Cold chain | Cold chain | CTC   | Cold chain | Freezer |
| Vaccine characteristics | Rotavirus vaccine products* |
|--------------------------|-----------------------------|
|                          | RVV-1 | RVV-2 | RVV-3 | RVV-4 | RVV-5 |
| District level           | Cold chain | Cold chain | CTC | Cold chain | Freezer |
| Health centre level      | Cold chain | Cold chain | CTC | Cold chain | Freezer |

**Method of cooling, Diluent**

| National level           | Cold chain | Cold chain | - | - | Freezer |
| Regional level           | Cold chain | Cold chain | - | - | Freezer |
| District level           | Cold chain | Cold chain | - | - | Freezer |
| Health centre level      | Cold chain | Cold chain | - | - | Freezer |

**Relative risk of an intussusception adverse event in the 1-7 days risk period**

| Dose | 1 | 2 | 3 | 4.2 | 2 | 3 |
|------|---|---|---|-----|---|---|

**Relative risk of an intussusception adverse event in the 8-21 days risk period**

| Dose | 1 | 2 | 3 | 4.2 | 2 | 3 |
|------|---|---|---|-----|---|---|

**Wastage**

| Wastage | 5% | 5% | 5% | 5% | 5% | 5% |

**Buffer vaccines**

| Buffer vaccines | 10% | 10% | 10% | 10% | 10% | 10% |

*All 5 vaccine products considered are hypothetical*

**The mean duration of protection offered by the vaccine product**

**Abbreviations:** cm³, cubic centimetre; CTC, controlled temperature chain; DTP, a combined vaccine against diphtheria, tetanus, and pertussis; BCG, Bacille Calmette Guerin vaccine; RVV, rotavirus vaccine; USD, United States Dollar.
Table S3. Scores and ranks for the 5 hypothetical rotavirus vaccine products using the TSE approach

| Decision criteria     | Absolute scores | Weighted scores |
|-----------------------|-----------------|-----------------|
|                       | RVV1 | RVV2 | RVV3 | RVV4 | RVV5 | RVV1 | RVV2 | RVV3 | RVV4 | RVV5 | RVV1 | RVV2 | RVV3 | RVV4 | RVV5 |
| Safety                | 0    | 42   | 77   | 83   | 74   | 0    | 8    | 15   | 17   | 15   | 20%  | 0    | 8    | 15   | 17   | 15   |
| Health impact         | 17   | 17   | 23   | 34   | 24   | 17   | 3    | 5    | 7    | 5    | 20%  | 3    | 3    | 5    | 7    | 5    |
| Delivery costs        | 7    | 79   | 98   | 65   | 0    | 8    | 17   | 20   | 15   | 0    | 20%  | 8    | 17   | 20   | 15   | 0    |
| Cost-effectiveness    | 0    | 61   | 27   | 0    | 0    | 0    | 12   | 15   | 0    | 0    | 20%  | 0    | 12   | 15   | 0    | 0    |
| Budget impact         | 54   | 85   | 87   | 0    | 26   | 22   | 58   | 72   | 39   | 25   | 20%  | 11   | 17   | 17   | 0    | 5    |

Vaccine ranking

|               | 5th | 2nd | 1st | 3rd | 4th |
|---------------|-----|-----|-----|-----|-----|
| RVV, rotavirus vaccine |     |     |     |     |     |