

Detailed Symptom Evaluation Logic Framework

Overview The logic uses a **curated decision-tree** structure based exclusively on public NHS England resources (2025). It prioritizes safety by immediate red-flag detection, then guides to appropriate pathways. **No diagnostic language** is used — outputs are navigational only (e.g., "Consider visiting a pharmacy for this common condition").

Primary Sources (December 2025):

- NHS Pharmacy First Advanced Service: 7 clinical pathways.
- Public NHS urgent/emergency red-flag symptom lists (e.g., chest pain, stroke signs).
- General minor illness guidance from NHS websites.

Pharmacy First Eligible Conditions (Exact 7 Pathways, England 2025):

1. Acute otitis media (earache) – Ages 1 to 17 years
2. Impetigo – Ages 1 year and over
3. Infected insect bites – Ages 1 year and over
4. Shingles – Ages 18 years and over
5. Sinusitis – Ages 12 years and over
6. Sore throat – Ages 5 years and over
7. Uncomplicated urinary tract infections in women – Ages 16 to 64 years

Red-Flag Symptoms (Immediate "Call 999" Escalation Examples):

- Severe chest pain or suspected heart attack
- Signs of stroke (face drooping, arm weakness, speech difficulty)
- Severe bleeding that won't stop
- Difficulty breathing or choking
- Sudden severe headache or confusion
- Loss of consciousness
- Major trauma or suspected broken bones

Full Decision Tree Structure (Recommended for visualization in Draw.io/Lucidchart):

1. **Input Collection:** Age group, postcode (for location services), primary symptoms (multi-select).
2. **Priority Red-Flag Check:** If any red-flag matched → Immediate "Call 999" + disclaimer.
3. **Pharmacy First Match:** If symptoms align with one of 7 conditions + age eligibility → Recommend "Community Pharmacy (Pharmacy First)" + nearest pharmacies.
4. **Minor/Self-Care:** Common mild symptoms (e.g., mild cough, headache without red flags) → Self-care advice + optional pharmacy.
5. **GP/Primary Care:** Ongoing or moderate issues → Recommend booking GP.

6. **Urgent Care:** Minor injuries → Nearest Urgent Treatment Centre.

7. **Fallback:** If unsure/no match → Advise contacting NHS 111 or GP + disclaimer.

Expanded Rules Table (Sample 30+ Pathways for Implementation):

ID	Symptom Combination	Age Group	Severity/Red Flags	Recommended Pathway	Rationale/Source (NHS 2025)
1	Severe chest pain	Any	Red flag	Call 999 immediately	NHS urgent symptoms list
2	Face drooping, arm weakness, speech issues	Any	Red flag	Call 999 (possible stroke)	NHS Stroke red flags
3	Sore throat	5+ years	Mild/no red flags	Community Pharmacy (Pharmacy First)	Pharmacy First eligible
4	Earache	1-17 years	Mild	Community Pharmacy (Pharmacy First)	Pharmacy First (acute otitis media)
5	Uncomplicated UTI symptoms	Women 16-64	Mild	Community Pharmacy (Pharmacy First)	Pharmacy First eligible
6	Sinusitis symptoms	12+ years	Mild	Community Pharmacy (Pharmacy First)	Pharmacy First eligible
7	Shingles rash/pain	18+ years	Mild	Community Pharmacy (Pharmacy First)	Pharmacy First eligible
8	Impetigo (skin infection)	1+ years	Mild	Community Pharmacy (Pharmacy First)	Pharmacy First eligible
9	Infected insect bite	1+ years	Mild	Community Pharmacy (Pharmacy First)	Pharmacy First eligible
10	Mild headache, no red flags	Any	Mild	Self-care or Pharmacy	General NHS minor illness guidance

Implementation Guidance: Store as JSON decision rules for scalability.