

THE MEDIC'S KNIFE

Clinical Toolkit

User Manual & Onboarding Guide

Field: Niche But Brilliant · Knife 26 of 50 · \ Offline.Ltd

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Clinical Tools

100%

Offline

26

Drugs in Database

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Protocols

This manual covers every tool in The Medic's Knife — from drug dose calculations and Glasgow Coma scoring to the Digital Broselow Tape, Protocol Autopilot, and the Shadow Patient system that ties them all together. Whether you are a paramedic, nurse, flight medic, or emergency physician, this guide will help you work the knife confidently from your first session.

Version 2.0 · For use with `The_Medic_s_Knife.html`

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1. Getting Started

The Medic's Knife is a single HTML file. No installation, no internet connection, no account. Open the file in any modern browser and every tool is ready immediately.

System Requirements

Browser	Version	Notes
Chrome / Edge	90+	Recommended. Full localStorage support.
Firefox	88+	Fully supported.
Safari	14+	Supported. iOS and macOS.
Opera	76+	Chromium-based. Fully supported.
Any mobile browser	—	Responsive layout adapts to small screens.

How to Open

Double-click `The_Medic_s_Knife.html` or drag it into your browser. The welcome modal will appear with a quick orientation. Click **Got it — open the knife** to begin.

■ PRO TIP

Email this HTML file to your webmail. It will always be waiting on any computer, phone, or tablet. Export your state JSON and email that too — your portable clinical toolkit forever.

The Welcome Screen

On first open, a modal explains the two-file system: the HTML toolkit file and your state JSON file. The knife saves your work automatically to localStorage, but exporting a state file lets you move your data between devices or back it up safely.

2. Interface Overview

The interface is divided into five zones: the header, the patient bar, the tab bar, the content area, and the footer.

The Header

Displays the product name with the knife emoji (🔪) and the field classification. The left border accent uses the medical teal colour that identifies this knife's domain.

The Shadow Patient Bar

A persistent bar below the header holds the current patient's weight, height, age, sex, allergies, notes, and five quick-save presets (P1–P5). Changing the weight here instantly recalculates Drug Dose, IV Drip Rate, BMI/BSA, and all Protocol Autopilot drug doses. See Section 4 for full details.

The Tab Bar

Nine clinical tool tabs on the left, two system tabs on the right. Click any tab to switch. The active tab is highlighted with a red underline.

Tab	Shortcut	Type
Drug Dose	Ctrl+1	Clinical tool
BMI / BSA	Ctrl+2	Clinical tool
Glasgow Coma	Ctrl+3	Clinical tool
APGAR	Ctrl+4	Clinical tool
Unit Converter	Ctrl+5	Clinical tool
IV Drip Rate	Ctrl+6	Clinical tool
🔪 Peds Quick	Ctrl+7	Clinical tool
🔪 Protocols	Ctrl+8	Clinical tool
🔪 Files	—	System
? Help	Ctrl+H	System

Tooltips

The 🔪 icons next to input fields show contextual help on hover (desktop) or tap (mobile).

The Footer

A persistent clinical disclaimer: calculations are for reference only and not a substitute for professional judgement. The version number appears on the right.

3. Saving & File Management

The knife auto-saves your work to localStorage every 15 seconds. To move your data between devices or create a backup, use the export/import system in the ■ Files tab.

Exporting Your State

1. Open the ■ Files tab.
2. Click **Export All** ↓ to download a JSON file containing all tool states and patient data.
3. The file is named `medic.knife.state_YYYY-MM-DD.json`.

Importing State

1. Open the ■ Files tab.
2. Click **Import All** ↑ and select a previously exported JSON file.
3. All tools and patient data are restored instantly.

■ CAUTION

Importing a state file overwrites all current data in the knife. Export first if you want to keep your current work.

Per-Tool Export

Each tool can be exported and imported independently from its card in the Files tab. Useful for sharing a single tool's configuration.

Clearing All Data

The **Clear All Data** button in the Files tab permanently deletes all localStorage for this knife. A confirmation dialog prevents accidental deletion.

■ PRO TIP

Name your exported state files by scenario: `peds_arrest_drill.json`, `adult_trauma_template.json`.
Build a library of ready-to-go patient setups.

4. Shadow Patient Profile

Set once, calculate everywhere.

The Shadow Patient bar sits permanently below the header. Enter a patient's weight once and every tool that needs it — Drug Dose, IV Drip Rate, BMI/BSA, Peds Quick, Protocol Autopilot — recalculates instantly. No more re-entering the same weight across five different screens.

Patient Fields

Field	Format	Cross-Tool Effect
Weight	Number (kg)	Auto-fills Drug Dose weight, IV Drip weight, BMI weight
Height (cm)	Number	Auto-fills BMI height
Age	Number (years, decimal ok)	Context for Broselow / protocols
Sex	M / F / —	Auto-fills BMI sex for IBW calculation
Allergies	Multi-select + custom	Triggers allergy warnings in Drug Dose and Protocols
Notes	Free text	Quick clinical notes, saved with state

Allergy Cross-Reference

Each drug in the database has allergy cross-reference tags. When you flag an allergy in the patient bar (e.g. Opioid), any drug with that tag (Morphine, Fentanyl) shows a red warning in Drug Dose results and Protocol Autopilot steps. Built-in allergy options: Penicillin, Sulfa, Latex, Opioid, NSAID, Aspirin, Iodine, Egg, Codeine, plus a custom "Other" option.

Patient Presets

Five preset slots (P1–P5) with default labels. Click a preset button to load that patient instantly. Click the Save button to overwrite a preset with the current patient data. Presets persist in localStorage independently of the main state.

Preset	Default Name	Default Weight
P1	Adult MVA	80 kg
P2	4yo seizure	16 kg
P3	Infant	5 kg
P4	Elderly	65 kg
P5	Empty	—

■ PRO TIP

Customise presets for your most common patient types. Flight medics might save paediatric weight ranges; ER nurses might save common triage scenarios.

5. Drug Dose Calculator

Tab: Drug Dose · Shortcut: Ctrl+1

Calculates weight-based drug doses with automatic allergy cross-referencing. Supports 26 common emergency and clinical drugs with standard mg/kg dosing, maximum single doses, route, and frequency information.

Inputs

Field	Description
Patient weight	Body weight. Auto-filled from Shadow Patient if set.
Weight unit	kg or lb. Internally converted to kg for calculations.
Drug	Select from 26 drugs. Each has standard dose rate, route, frequency, and max.
Custom dose (mg/kg)	Override the default dose rate. Leave blank for standard.
Concentration (mg/mL)	Drug concentration to calculate volume in mL. Optional.

Outputs

Field	Description
Weight (kg)	Confirmed weight used for calculation
Dose rate (mg/kg)	Standard or custom rate
Dose (mg)	Calculated dose, capped at max single dose if exceeded
Volume (mL)	Dose ÷ concentration. Shown only if concentration entered.
Allergy warning	Red alert if patient has a flagged allergy matching this drug

Drug Database (26 drugs)

The database includes: Paracetamol, Ibuprofen, Amoxicillin, Amoxicillin-Clavulanate, Ceftriaxone, Azithromycin, Morphine, Fentanyl, Midazolam, Ketamine, Ondansetron, Dexamethasone, Epinephrine, Atropine, Adenosine, Naloxone, Diazepam, Phenytoin, Mannitol, Furosemide, Diphenhydramine, Methylprednisolone, Succinylcholine, Rocuronium, Lidocaine, and Amiodarone.

■ CAUTION

Always verify drug doses independently before administration. This calculator does not account for renal/hepatic impairment, drug interactions, or contraindications beyond allergy flags. It is a reference aid, not a substitute for pharmacy verification.

6. BMI / BSA Calculator

Tab: BMI / BSA · Shortcut: Ctrl+2

Calculates body mass index (BMI), body surface area (BSA) using Du Bois and Mosteller formulae, ideal body weight (Devine), adjusted body weight, and lean body weight (Boer). Height and weight are auto-filled from the Shadow Patient bar when set.

Inputs

Field	Description
Height	In cm, inches, or decimal feet
Weight	In kg or lb
Sex (for IBW)	Male or Female — determines Devine formula variant

Outputs

Output	Formula
BMI (kg/m ²)	Weight (kg) ÷ Height (m) ²
BMI Category	Underweight / Normal / Overweight / Obese I / Obese II+
BSA Du Bois (m ²)	$0.007184 \times H^{0.725} \times W^{0.425}$
BSA Mosteller (m ²)	$\sqrt{(H \times W \div 3600)}$
Ideal Body Weight	Male: $50 + 2.3 \times (Ht'' - 60)$ · Female: $45.5 + 2.3 \times (Ht'' - 60)$
Adjusted BW	$IBW + 0.4 \times (\text{Actual} - IBW)$
Lean BW (Boer)	Male: $0.407W + 0.267H - 19.2$ · Female: $0.252W + 0.473H - 48.3$

■ PRO TIP

BSA is critical for chemotherapy dosing, burn assessment (rule of 9s), and cardiac index calculations.

7. Glasgow Coma Scale

Tab: Glasgow Coma · Shortcut: Ctrl+3

A click-to-score GCS assessment. Select one option in each of the three categories (Eye Opening, Verbal Response, Motor Response) to calculate the total GCS score and severity interpretation.

Scoring Components

Component	Range	Options
■ Eye Opening (E)	1–4	4 Spontaneous · 3 To voice · 2 To pressure · 1 None
■ Verbal (V)	1–5	5 Orientated · 4 Confused · 3 Inappropriate · 2 Incomprehensible · 1 None
■ Motor (M)	1–6	6 Obeys · 5 Localises · 4 Normal flexion · 3 Abnormal flexion · 2 Extension · 1 None

Severity Interpretation

Score	Severity	Intubation Guidance
13–15	Mild	Not typically indicated
9–12	Moderate	Consider if declining
3–8	Severe	Typically indicated

■ PRO TIP

Record components (E3V4M5) not just totals — different component breakdowns have different clinical implications.

8. APGAR Scorer

Tab: APGAR · Shortcut: Ctrl+4

Click-to-score APGAR assessment for newborns. Select assessment time (1, 5, or 10 minutes) and click each criterion's score (0, 1, or 2). The total and interpretation update automatically.

Criterion	0	1	2
Appearance	Blue/pale all over	Acrocyanosis	Completely pink
Pulse	Absent	<100 bpm	≥100 bpm
Grimace	No response	Grimace/feeble cry	Cry/pull away
Activity	Limp	Some flexion	Active motion
Respiration	Absent	Weak/irregular	Good/crying

Interpretation

Score	Interpretation	Action
7–10	Reassuring	Routine care
4–6	Moderately abnormal	May need intervention
0–3	Low	Immediate resuscitation

■ PRO TIP

If the 5-minute score is below 7, continue scoring every 5 minutes up to 20 minutes.

9. Unit Converter (Medical)

Tab: Unit Converter · Shortcut: Ctrl+5

Converts between SI, conventional, and clinical units across nine categories: Weight, Volume, Length, Temperature, Pressure, Glucose, Creatinine, Cholesterol, and Energy.

Categories

Category	Units Available	Clinical Note
Weight	kg, g, mg, mcg, lb, oz	Drug dosing, fluid calculations
Volume	L, mL, dL, fl oz, tsp, tbsp	IV volumes, medication volumes
Length	cm, mm, in, ft, m	Patient height, wound measurement
Temperature	°C, °F, K	US uses °F; most countries use °C
Pressure	mmHg, kPa, cmH ₂ O, atm	Blood pressure, ventilator settings
Glucose	mg/dL, mmol/L	US uses mg/dL; factor: ÷ 18.016
Creatinine	mg/dL, μmol/L	US mg/dL vs international μmol/L
Cholesterol	mg/dL, mmol/L	Lipid panels
Energy	kcal, kJ	Nutritional calculations

10. IV Drip Rate Calculator

Tab: IV Drip Rate · Shortcut: Ctrl+6

Calculates mL/hr, gtt/min, and gtt/sec from total volume, infusion time, and drop factor. When patient weight is available (from Shadow Patient), also calculates mL/kg/hr and 4-2-1 maintenance rate.

Inputs

Field	Description
Total volume (mL)	Total IV fluid volume to infuse
Infusion time (hours)	Duration of infusion
Drop factor (gtt/mL)	Tubing type: 10, 15, 20 (macro) or 60 (micro)
Patient weight (kg)	Optional. Auto-filled from Shadow Patient.

Outputs

Output	Formula
mL/hr	Volume ÷ Hours
gtt/min	(Volume × Drop factor) ÷ (Time in min)
gtt/sec	gtt/min ÷ 60
mL/kg/hr	mL/hr ÷ Weight (if weight provided)
4-2-1 Maintenance	4 mL/kg/hr first 10 kg + 2 next 10 kg + 1 above 20 kg

■ PRO TIP

Microdrip (60 gtt/mL) trick: gtt/min = mL/hr. Mental maths made trivial.

11. Peds Quick — Digital Broselow Tape

Tab: ■ Peds Quick · Shortcut: Ctrl+7

A digital implementation of the Broselow paediatric emergency tape. Enter a child's length in cm or select an approximate age to instantly see the Broselow colour zone, estimated weight, age-appropriate vital sign ranges, defibrillation energy, fluid bolus volume, and equipment sizes.

Broselow Colour Zones

Zone	Length (cm)	Est. Weight	ETT Size	Blade	Defib (2J/kg)
Grey	46–53	3.5 kg	3.0 uncuffed	Miller 0	7 J
Pink	54–62	6 kg	3.5 uncuffed	Miller 1	12 J
Red	63–73	8 kg	3.5–4.0	Miller 1	16 J
Purple	74–85	10 kg	4.0 cuffed	Miller 1–2	20 J
Yellow	86–97	12 kg	4.5 cuffed	Miller 2	24 J
White	98–109	15 kg	5.0 cuffed	Mac 2	30 J
Blue	110–121	18 kg	5.5 cuffed	Mac 2	36 J
Orange	122–131	24 kg	6.0 cuffed	Mac 2–3	48 J
Green	132–150	30 kg	6.5 cuffed	Mac 3	60 J

Load into Patient

Click ■ **Load into Patient** to push the zone's estimated weight into the Shadow Patient bar. All drug doses and IV rates instantly recalculate for that child.

■ CAUTION

Broselow is an estimation tool for emergencies when actual weight is unavailable. Always use actual measured weight when possible. Equipment sizes are starting recommendations.

12. Protocol Autopilot

Tab: ■ Protocols · Shortcut: Ctrl+8

Six evidence-based clinical protocols with step-by-step checklists and pre-calculated drug doses based on the current Shadow Patient weight. Each step shows the specific drug, calculated dose in mg, volume, route, and clinical notes. Allergy warnings fire automatically.

Available Protocols

Protocol	Key Drugs	Steps
■ Anaphylaxis	Epinephrine IM, Diphenhydramine, Methylprednisolone	6
■ RSI / Airway	Ketamine, Succinylcholine/Rocuronium, Lidocaine	6
■ Status Epilepticus	Midazolam/Diazepam, Phenytoin	5
♥■ PALS Cardiac Arrest	Epinephrine, Amiodarone	7
■ Sepsis / Septic Shock	Ceftriaxone, Epinephrine infusion	6
■ Burn Resuscitation	Parkland formula ($4 \text{ mL} \times \text{kg} \times \% \text{TBSA}$), Morphine	6

How It Works

1. Set a patient weight in the Shadow Patient bar.
2. Open the ■ Protocols tab and select a scenario.
3. Each step shows the drug name, pre-calculated dose, route, and notes.
4. Click the checkbox to mark steps complete as you work through the protocol.
5. Click ✕ Exit Protocol to return to the protocol list.

■ CAUTION

Protocols are general references based on widely-used guidelines (AHA, ACLS, PALS, ATLS). Always follow your local agency protocols and medical direction. Drug doses are calculated aids, not orders.

13. Keyboard Shortcuts

All keyboard shortcuts available in the knife.

Global

Ctrl + S	Export full state
Ctrl + H	Open Help tab
Esc	Close modal / dialog

Tool Tabs

Ctrl + 1	Drug Dose
Ctrl + 2	BMI / BSA
Ctrl + 3	Glasgow Coma Scale
Ctrl + 4	APGAR Scorer
Ctrl + 5	Unit Converter
Ctrl + 6	IV Drip Rate
Ctrl + 7	Peds Quick (Broselow)
Ctrl + 8	Protocol Autopilot

14. Troubleshooting

Calculations Are Not Updating

Ensure JavaScript is enabled in your browser. The knife requires JS for all calculations. Some corporate browsers or privacy extensions disable JS by default.

My Data Disappeared

localStorage can be cleared by browser cleaning tools, private/incognito mode, or manually clearing site data. Always export your state file as a backup. The 15-minute reminder toast is there for a reason.

Patient Bar Not Syncing

The Shadow Patient bar updates Drug Dose, IV Drip, and BMI automatically when you change the weight. If a tool is not reflecting the new weight, switch to that tool's tab to trigger a recalculation.

Import Fails or Shows Wrong Knife

State files are knife-specific. The file must contain "knife": "medic" to be accepted. Files from other Offline.Ltd knives will be rejected with an error message.

Tabs Scroll on Mobile

On narrow screens, the tab bar scrolls horizontally. Swipe left/right to access all nine tool tabs and two system tabs. The patient bar also wraps to multiple lines on small screens.

Protocol Doses Show mg/kg Only

Protocol Autopilot requires a patient weight to calculate absolute doses. Set a weight in the Shadow Patient bar before opening a protocol.

15. Accuracy & Limitations

Every tool in the knife is built from standard clinical formulae and widely-used reference data. Here is what you can rely on and what requires independent verification.

Tool	Accuracy	Notes
Drug Dose	Standard mg/kg references	Does not account for renal/hepatic function or interactions
BMI / BSA	Exact formulae	Du Bois, Mosteller, Devine, Boer — peer-reviewed
Glasgow Coma	Standard GCS scale	No inter-rater reliability correction
APGAR	Standard scoring	Clinical interpretation varies
Unit Converter	Exact conversion factors	IEEE 754 floating-point precision limits
IV Drip Rate	Exact arithmetic	4-2-1 rule is a guideline, not absolute
Peds Quick	Standard Broselow zones	Estimation tool — use actual weight when available
Protocol Autopilot	Based on AHA/ACLS/PALS guidelines	Follow local protocols; doses are aids, not orders

■ DISCLAIMER

This tool is a clinical reference aid. It is not a medical device, not FDA-cleared, and not a substitute for professional clinical judgement, pharmacy verification, or institutional protocols. Always verify calculations independently before patient care decisions.

16. Glossary

Clinical terms used throughout this manual and the knife interface.

APGAR	Appearance, Pulse, Grimace, Activity, Respiration — a scoring system for newborn assessment.
BMI	Body Mass Index — weight (kg) divided by height (m) squared.
Broselow Tape	A colour-coded length-based tape used to estimate weight and equipment sizes in paediatric emergencies.
BSA	Body Surface Area — used for chemotherapy dosing and cardiac calculations.
Cuffed / Uncuffed	Refers to whether an endotracheal tube (ETT) has an inflatable cuff for sealing the airway.
Du Bois	A formula for calculating body surface area: $0.007184 \times H^{0.725} \times W^{0.425}$.
ETT	Endotracheal Tube — a tube inserted into the trachea for airway management.
GCS	Glasgow Coma Scale — a 3–15 point scale measuring consciousness via eye, verbal, and motor responses.
gtt/min	Drops per minute — the rate of IV fluid delivery through drip tubing.
IBW	Ideal Body Weight — estimated healthy weight for a given height, using the Devine formula.
IM	Intramuscular — injection into muscle tissue.
IO	Intraosseous — access to the vascular system through bone marrow, used in emergencies.
IV	Intravenous — delivered directly into a vein.
localStorage	A browser feature that saves data locally on the device. No server or internet required.
mg/kg	Milligrams per kilogram — the standard unit for weight-based drug dosing.
Mosteller	A BSA formula: $\sqrt{(\text{Height} \times \text{Weight} \div 3600)}$.
PALS	Paediatric Advanced Life Support — standardised algorithms for paediatric cardiac arrest.
Parkland Formula	Burn resuscitation formula: $4 \text{ mL} \times \text{body weight (kg)} \times \% \text{TBSA burned over 24 hours}$.

PRN	Pro re nata — as needed.
RSI	Rapid Sequence Intubation — a technique using sedation and paralysis for emergency intubation.
Shadow Patient	The persistent patient profile bar in the knife that auto-fills weight across all tools.
State File	A JSON export of all tool data and patient information, used for backup and transfer.
%TBSA	Total Body Surface Area percentage — used in burn assessment.

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Stay sharp.

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