Appendix B

Examples of patient-specific, risk-adapted pharmaceutical training in the intervention group (IG).

Patient 1: 6-year-old boy, generalized epilepsy, while medication reduction

Prescribed medication and dosage	**Sodium-Valproate 300 mg modified-released capsule, hard ½-0-½**		
Handling processes	Opening capsule Dose splitting Crunching of modified-released minitablets (capsule content) Sprinkling capsule content onto food Storing half of the capsule content that was not immediately administered		
Committed medication errors (ME) prioritized to patient-specific intervention		***Clinical risk of ME***	***Intervention***
Storage	**Missing labelling of sub-quantity of the capsule (= modified-released minitablets)** **Incorrect storage of solid drugs:** hygroscopic modified-released minitablets are not stored protected to humidity	4 3	Handout of **written information about medication storage**; **Provision of a helping tool**: Eppendorf vial for humidity protected storage, further labeled with brand name/active ingredient/strength
Preparation	**Inaccurate dosing of solid drugs - Intended dosage not exactly obtained:** Capsule could not have been split into two equal doses	4	Handout of an **illustrated handling algorithm and dummy-model based practical training of the use of a helping tool: division spoon** provided by the manufacturer
Oral administration	**Crunching of modified-released minitablets** that may lead to adverse drug reactions (e.g., dose dumping or unintended drug loss when minitablets remain in interdental spaces) **Inappropriate body position for drug**	4	Handout of a **drug individualized written information**, among others, recommending using sparkling water or piece-less food to sprinkle the minitablets on; Handout of **written information on correct drug intake of solid oral dosage forms,** among

	administration: patient does not sit in an upright position	4	others, recommending taking medication with an upright position of at least 45° of the upper body; **both interventions** were **highlighted by color in the text and explained to the parents**

Patient 2: 5-year-old boy, epileptic syndrome with complex focal seizures

Prescribed medication and dosage	**Lacosamid 10 mg/mL Sirup** 11 mL-0-11 mL		
Handling processes	Dosing sirup by syringe without bottle adapter		
Committed medication errors (ME) prioritized to patient-specific intervention		***Clinical risk of ME***	***Intervention***
Storage	**Opening date missing on liquid drug** (e.g., date of opening is not noted on the package)	5	Handout of **written information about medication storage**, among others, recommending labeling medication bottle with date of opening and end of expiry period, which was **highlighted by color in the text** and **explained to the parents**
Preparation – package removal	**Difficulties in removing the drug from the primary packaging**	5	**Provision of a helping tool:** bottle adapter and oral syringe; handout of an **illustrated handling algorithm on correct liquid drug use,** among others, demonstrating shaking suspensions properly and exact dosing via bottle adapter and oral syringe (**both highlighted by color in the text**); **dummy-model based practical training** on correct suspension handling with bottle adapter and oral syringe
Preparation – Dosage	**No appropriate shaking of sirup** **Inaccurate dosing of liquid drug - Intended dosage not exactly obtained** (imprecise measuring)	5 5	
Hygiene	**Pouring excess fluid back into the bottle**	5	

Patient 3: 4-month-old boy, complex focal epilepsy, neonatal seizures

Prescribed medication and dosage	**Newly prescribed medication: Phenobarbital 15 mg tablets 1-0-1**		
Handling processes	Crushing tablet Suspending tablet		
Committed medication errors (ME) prioritized to patient-specific intervention		***Clinical risk of ME***	***Intervention***
Preparation – Package removal	**Opening primary package not possible** (not able to open child-resistant fastening)	5	Handout of a **drug individualized written information**, among others, demonstrating how to open primary package (**highlighted by color in the text**); **dummy-model based practical training** on how to open primary package
Preparation – Manipulation of dosage form	**Prescribed preparation of solid drug not possible** (not able to suspend tablet)	5	**Provision of a helping tool:** oral syringe; handout of an **illustrated handling algorithm on correct suspending of tablets in an oral syringe; dummy-based practical training** of entire process of safely suspending a tablet in an oral syringe and **explanation of correct liquid drug administration** via oral syringe and with an uptight body position by putting the patient on a voluminous pillow
Oral administration	**Inappropriate body position for drug administration:** patient does not sit in an upright position **Unintended loss of drug during medication administration** (e.g., user spills content of syringe while administering or loss of drug in neonates/infants due to intense salivation or tongue thrust reflex)	4 5	
Hygiene	**No use of gloves in presence of CMR (carcinogenic/ mutagenic/toxic for reproduction) drugs** (while crushing tablet)	3	Intervened by **changing preparation process** to suspending in an oral syringe without crushing
Knowledge	**Missing knowledge as to whether prescribed drug that is solved/ suspended/diluted is soluble/suspensible/dilutable**	5	Handout of a **drug individualized written information**, among others, specifying allowed manipulation of prescribed tablets

Additional to patient-specific interventions and general written information handouts used for patient-specific interventions, parents have been further provided basic information on safe drug storage.