Proponent Testimony on HB 37 – Lisa Boley
HB 37

Chairman Huffman, Vice Chair Antani, Ranking Member Antonio, thank you for the opportunity to share proponent testimony on HB 37. OH HB37 Kevin's Law 2.0. I am for allowing up to three emergency refills, 30-day supply each, covered by insurance, in any order that is needed, consecutively or otherwise.

My name is Lisa Boley. I am a mom to a type 1 diabetic child diagnosed at the age of 10. My husband is also a type 1 diabetic diagnosed at the age of 11. The cost of insulin is astronomical from approximately $300 for a vial of insulin such as Humalog/Novolog or Lantus to approximately $600 per box of insulin pens. I am a proponent of HB 37 that if a patient's health insurance coverage would under normal circumstances provide coverage for insulin with a prescription it should also be provided when a pharmacist dispenses that same emergency refill of a lifesaving medication of insulin. Cost or insurance policy should not be the reason to walk away from an emergency refill under Kevin's Law.

DKA, diabetic ketoacidosis is unavoidable if a T1D goes without insulin or not enough insulin with dehydration, ketones and high blood glucose unaddressed. The summer before my son was diagnosed with type 1 diabetes, flyers had gone up at my work. These flyers on the walls were for raising money for an employee's 13 yr. old son who had died. His son was a type 1 diabetic. This hit me hard as my husband is a type 1 diabetic and little did I know my son would be diagnosed that October. Insulin is life for a diabetic. Without insulin or even just the lack of enough insulin, diabetic ketoacidosis, DKA will be quick and can be deadly. For our situation with DKA, it took just 3 hours (9am to noon) sleeping in on a summer day and not eating for my son to go from being perfectly fine with good glucose readings at 9am to him needing help at noon with high glucose number and vomiting. We were able to push some fluids and insulin but still not enough that his breathing changed and was admitted to the ER at Rainbows Hospital for Children. It is scary to think that in just those few hours of not having enough insulin and being dehydrated how serious the situation became.

Rather than rationing insulin or going without insulin, emergency refills of insulin should be allowed to avoid DKA. No child or adult T1D should die from DKA because they cannot get a refill on a prescription in an emergency situation.

Sincerely,
Lisa Boley

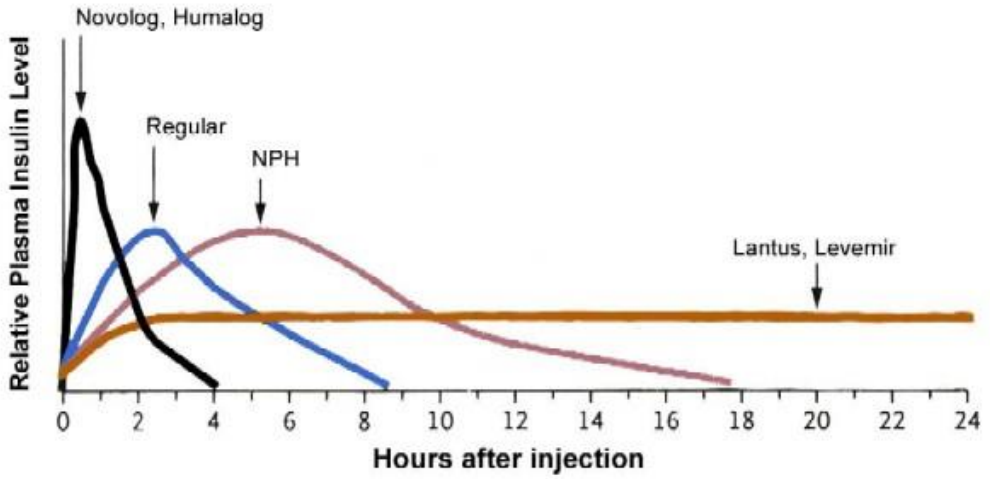
1: **Types of insulin and Walmart regular insulin:**
Physicians prescribe today certain types of insulins. There are reasons for the types of insulin, such as Humalog and Novolog and certain types of basal insulin. The reasons include **reducing low blood sugars hypoglycemia (can lead to coma and death), better control of BG mg/dL standard deviations and better long term health consequences.**

When needing emergency refills of insulin, one might just say go get a bottle of Regular insulin from Walmart. It is extremely dangerous to switch types of insulin such as a rapid acting insulin to regular insulin or NPH for cost without serious understanding and knowledge of dosing. Each insulin type has a different peak, duration and onset that affects ICR insulin carb ratio, ISF insulin sensitivity factor, and basal dosing amounts of that specific insulin along with changing prebolus timing and on top of that the 42 plus factors impacting a T1Ds blood glucose on a day to day basis.

Types of Insulin

Insulin type	How it is delivered	Expiration when opened	Onset	Peak	Duration
Rapid Acting					
Admelog	Pens and vials	28 days	15-30 min	30 min-2 ½ hours	4-5 hours
Afrezza inhaled powder	4, 8 and 12 unit Cartridges	3 days	3-7 minutes	12-15 min	1 ½-3 hours
Apidra	Vials and pens	28 days	10-20 min	30 min-1 ½ hours	2-4 hours
Fiasp	Vials and pens	28 days	15-20 min	1 ½- 2 hours	5 hours
Humalog, U-100 and U-200	Vials, pens, cartridges for refillable pen	28 days	10-20 min	30 min-1/12 hours	3-5 hours
Novolog	Vials, pens, cartridges for refillable pen	28 days	10-20 min	1-3 hours	3-5 hours
Short Acting **					
Regular	Vials and pens	31-42 days, depending upon brand	15-30 min	2 ½-5 hours	4-12 hours
U-500 (5x the concentration)	Vials and pens	28 days	30 min	4-8 hours	18-24 hours
Intermediate acting **					
NPH (created in 1946)	Vials and pens	31-42 days, depending upon brand	1-2 hours	4-12 hours	14-24 hours
Long acting					
Basaglar	Vials and pens	28 days	3-4 hours	No peak +	11-24 hours
Lantus	Vials and pens	28 days	3-4 hours	No peak +	11-24 hours
Levemir	Vials and pens	42 days	3-4 hours	No peak +	6-23 hours
Toujeo, U-300	Pen only	42 days	6 hours	No peak	24-36 hours
Tresiba, U-100 and U-200	Pen only	56 days	1 hour	9 hours	36-42 hours
Combination					
NPH/Regular 70/30	Vials and pens	31-42 d vial 10 d pen	30 min	50 min-2 hours and 6-10 hours	18-24 hours
Rapid acting 70/30	Vials and pens	28 d vial 14 d pen	15-30 min	1-4 hours	18-24 hours
Rapid acting 75/25	Vials and pens	28 d vial 10 d pen	15-30 min	1-6 ½ hours	12-24 hours
Rapid acting 50/50	Vials and pens	28 d vial 10 d pen	15-30 min		

Endocrineweb.com



https://health.ucdavis.edu/livinghealthy/topic/diabetes/index.html

2: **Difficulty in obtaining prescriptions:**
It was brought up in testimony by interested parties in the last OSMA House statement. “In many cases, if a patient is out of refills on a maintenance medication, they can easily obtain a refill by contacting their

prescriber, even in some situations that might be considered an emergency." This statement is not something I have encountered in the past 10 years and has been the extreme opposite case for the last 10 years. It is never easy to get a prescription in the web of communications between doctors, pharmacy and then meeting the insurance policy requirements plus the multiple number of supplies needed. Insurance policies change year to year.

For one small example we just recently switched insurance policies and dealing with this process where "we can easily obtain prescriptions". I called the adult endocrinology office and talked to an actual person to get two prescriptions refilled, with the new insurance plan name and required pharmacy. The following week I stopped at CVS no prescriptions. I figured I would call the automated prescription line this time with the same information. The following week, I stopped by CVS again no prescriptions. I called the endocrinology office again and asked what was going on with these prescriptions. She brought up the files and found that they were being sent to the wrong pharmacy even though the previous prescriptions filled had gone to the correct pharmacy, CVS. Note I was told at CVS, they do not allow a prescription to be transferred from another pharmacy to their pharmacy. The endocrinology office would have the prescriptions resent to the correct pharmacy. Again, the following week I stopped by CVS pharmacy only one of the prescriptions had been filled. CVS had no information on the other prescription or update. I called the endocrinology office again asked what was going on with the one prescription. I was told the prescription had been denied by insurance. The prescription required preauthorization and the paperwork would be sent into the insurance company. The following week I was able to get the prescription after 4 weeks and the "we can easily obtain a prescription". This was 4 weeks for just 1 prescription. This was followed by 4 weeks to get a Toujeo prescription because the insurance did not approve how the dosing was stated by the doctor's office and no preauthorization was needed but this was the reason the doctor's office thought it was being denied. We have the following prescriptions x 2 plus a few more: Humalog pens, Lantus Vials, Toujeo, Syringes, Pen needles, Lancets, Glucose meter, Test strips, CGM sensor and CGM transmitter. Each one requires a yearly prescription and you are changing insurance policies a minimum of once a year.

3: **Reasons for emergency prescriptions**:
There are many valid real-life reasons someone would need an emergency refill without a prescription as listed in people's testimony from not being able to get a hold of a doctor's office, a broken vial of insulin to running out of insulin. There are 42 plus factors that affect the 30 day insulin requirement amount for a diabetic. If a prescription of insulin is not prescribed taking into account the 42 factors that could raise your insulin needs in a month, you can run short on insulin. As listed under Biological number 21, stress and illness such as a 2 week cold will cause your BG to rise or skyrocket and your insulin needs will drastically increase. The pancreas is a dynamic organ and not stagnant your insulin needs change day to day and hour to hour.

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Factors That Affect BG

Food

- ↑↑ 1. Carbohydrate quantity
- →↑ 2. Carbohydrate type
- →↑ 3. Fat
- →↑ 4. Protein
- →↑ 5. Caffeine
- ↓↑ 6. Alcohol
- ↓↑ 7. Meal timing
- ↑ 8. Dehydration
- ? 9. Personal microbiome

Medication

- →↓ 10. Medication dose
- ↓↑ 11. Medication timing
- ↓↑ 12. Medication interactions
- ↑↑ 13. Steroid administration
- ↑ 14. Niacin (Vitamin B3)

Activity

- →↓ 15. Light exercise
- ↓↑ 16. High-intensity and moderate exercise
- →↓ 17. Level of fitness/training
- ↓↑ 18. Time of day
- ↓↑ 19. Food and insulin timing

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Biological

- ↑ 20. Insufficient sleep
- ↑ 21. Stress and illness
- ↓ 22. Recent hypoglycemia
- →↑ 23. During-sleep blood sugars
- ↑ 24. Dawn phenomenon
- ↑ 25. Infusion set issues
- ↑ 26. Scar tissue and lipodystrophy
- ↓↓ 27. Intramuscular insulin delivery
- ↑ 28. Allergies
- ↑ 29. A higher glucose level
- ↓↑ 30. Periods (menstruation)
- ↑↑ 31. Puberty
- ↓ 32. Celiac disease
- ↑ 33. Smoking

Environmental

- ↑ 34. Expired insulin
- ↑ 35. Inaccurate BG reading
- ↓↑ 36. Outside temperature
- ↑ 37. Sunburn
- ? 38. Altitude

Behavioral & Decision Making

- ↓ 39. Frequency of glucose checks
- ↓↑ 40. Default options and choices
- ↓↑ 41. Decision-making biases
- ↓↑ 42. Family relationships and social pressures

https://diatribe.org/poster-now-available-42-factors-affect-blood-glucose

4. **DKA**
Acidosis in **DKA** is due to the overproduction of β-hydroxybutyric acid and acetoacetic acid. At physiological **pH**, these 2 ketoacids dissociate completely, and the excess hydrogen ions bind the bicarbonate, resulting in decreased serum bicarbonate levels. Ketone bodies thus circulate in the anionic form, which leads to the development of anion gap acidosis that characterizes DKAhttps://www.ncbi.nlm.nih.gov/pmc/articles/PMC151994/ National Center for Biotechnology Information

Note: Table below the β-hydroxybutyric acid at 9100 µmol/L level in DKA is 30 times higher than normal with a standard deviation of 850 µmol/L. The acid which measured in the blood is traveling through the veins, organs and brain.

DIABETIC KETOACIDOSIS AND THE HYPERGLYCEMIC hyperosmolar state are the most serious complications of diabetic decompensation and remain associated with excess mortality. Insulin deficiency is the main underlying abnormality. Clinical diagnosis is based on the finding of dehydration along with high capillary glucose levels with or without ketones in the urine or plasma. The diagnosis is confirmed by the blood pH, serum bicarbonate level and serum osmolality. Treatment consists of adequate correction of the dehydration, hyperglycemia, ketoacidosis and electrolyte deficits.

The **acidity** or alkalinity of any solution, including **blood**, is indicated on the **pH** scale.
The **pH** scale, ranges from 0 (strongly acidic) to 14 (strongly basic or alkaline). A **pH** of 7.0, in the middle of this scale, is neutral. **Blood** is **normally** slightly basic, with a **normal pH range** of about 7.35 to 7.45. https://emedicine.medscape.com/article/118361

Table 3: Other biochemical abnormalities associated with DKA and HHS[1,18,23]

Parameter	Normal range	Condition; mean (and SD)	
		DKA	HHS
Sodium, mmol/L	136–145	134 (1.0)	149 (3.2)
Potassium, mmol/L	3.5–5.0	4.5 (0.13)	3.9 (0.2)
Blood urea nitrogen, mmol/L	2.8–7.9	11.4 (1.1)	21.8 (3.9)
Creatinine, µmol/L	38–110	97.2 (8.8)	123.8 (8.8)
Free fatty acids, mmol/L	0.4–0.7	1.6 (0.16)	1.5 (0.19)
β-Hydroxybutyric acid, µmol/L	< 300	9100 (850)	1000 (200)
Lactate, mmol/L	0.56–2.2	2.4	3.9
Insulin, pmol/L	35–145	90 (10)	270 (50)
C-peptide, nmol/L	0.26–1.32	0.25 (0.05)	1.75 (0.23)
Glucagon, ng/L	50–100	580 (147)	689 (215)
Growth hormone, µg/L	< 5	7.9	1.1
Cortisol, nmol/L	140–690	1609 (345)	1539 (490)
Catecholamines, ng/mL	0.150–0.750	1.78 (0.4)	0.28 (0.09)