CHLA Insulin Pump Sick-Day Protocol Improvement Initiative

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BACKGROUND & AIM

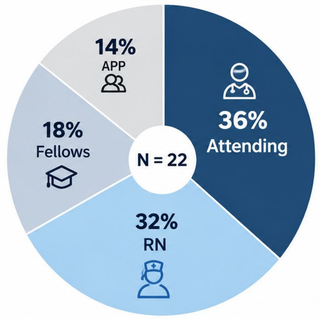
- Sick-day management in pediatric insulin pump users requires timely responses to hyperglycemia, ketones, and insulin-delivery interruptions.
- Variable device-specific recommendations can complicate escalation decisions and family education.
- To develop and implement a standardized, practical sick-day protocol that promotes consistent clinical management, guides escalation of care, and strengthens family education for pediatric insulin pump users.

METHODS

- Anonymous 13-item survey (12 multiple-choice, 1 open-ended) assessing barriers among multidisciplinary team members managing T1D insulin pump users.

RESULTS

- 64% provided sick-day guidance weekly or more frequently.
- Only 36% reported having a resource or protocol clearly defining escalation of care.
- 18% were very comfortable, 68% somewhat comfortable, and 14% neutral or uncomfortable providing AID-specific sick-day guidance.
- Key gaps included pump failure trouble-shooting, brand-specific guidance, basal adjustment recommendations, ketone management and documentation.
- Staff expressed need for simple, standardized, device-aware guidance usable across clinic visits, phone triage, and after-hour care.



Top Requested Resources

Device-specific guidance	68%
Troubleshooting common scenarios	55%
Backup insulin doses	32%
Sick-day protocol	27%

PDSA Cycle

PLAN
- Baseline survey identified gaps
- **36%** felt escalation of care was clearly defined
- **32%** knew where to find backup insulin dose guidance
- **18%** felt comfortable providing AID guidance

DO
- Added brand-specific AID guidance

SMART GOAL: Increase the proportion of providers reporting they are very comfortable providing AID-specific sick-day guidance from 18% to 30% within 6 months.

ACT
- Refine the algorithm
- Integrate into onboarding and clinical workflow
- Plan next PDSA cycle

STUDY
- Distribute 9-month post-survey
- Compare knowledge, confidence, and workflow access
- Review clinician feedback

Baseline survey respondents: n = 22

Hyperglycemia while on AID: Continue Auto Mode

	iLet	Medtronic 780G	Omnipod 5	Tandem X2/MOBI	Twiist
Strengthen ICR	—	30–50%	30–50%	10–30%	10–30%
Strengthen ISF	—	—	30–50%	10–30%	10–30%
Strengthen basal rate	—	—	—	10–20%	10%
Lower BG target if applicable	✓ (110–120)	✓ (100–150)	✓ (110–150)	—	✓ (87–180)
Use pump to correct hyperglycemia q2h	—	—	✓	✓	✓
Others	Consider adding basal insulin	Reduce active insulin time to 2 h; Consider adding basal	—	In **Control IQ**, can create sick day profile to strengthen the settings above. If **Control IQ+**, turn on temp basal (10–20% for 6–12 h), and also strengthen ICR and ISF by 10–30%	—

CONCLUSIONS

- Survey findings informed the first Plan-Do-Study-Act (PDSA) cycle, which focused on developing a concise, device- and brand-specific sick-day management guide to address identified knowledge gaps and promote standardized care delivery.

NEXT STEPS

Standardize Care	Consistent sick-day guidance and escalation criteria
Build Provider Confidence	Practical, device-specific AID guidance
Enhance Patient Safety	Pump troubleshooting, insulin adjustments, and ketone management
Integrate Into Practice	Clinic visits, telephone triage, and after-hours care