

Multimedia Appendix 1. Workshop overview

Workshop	Participants	Needs and possibilities approached	Main ideas identified	Functionality and modes of interaction - based on workshop ideas
Workshop 1: My Diabetes	Young people (7), Parents (2), Health care providers (2), Persons with special expertise and knowledge (3)	Retrospective study <ul style="list-style-type: none"> A general need to improve glycemic control Support those not attending clinic visits Interviews with young people and parents <ul style="list-style-type: none"> Support young people and parents to share concerns and challenges. Talk about and identify concerns, challenges and strategies in regard to hypoglycemia, worries about future, feeling different and incompetent in T1DM management. Interviews with health care providers <ul style="list-style-type: none"> Messages from young people should be sent to health care providers' work mail. The app could be a potential icebreaker to elucidate challenges and concerns. A need for ongoing support 	Ice-breaker <ul style="list-style-type: none"> <u>What</u> do you want to tell us? <ul style="list-style-type: none"> HEADS This is me... (look at the "whole" person) Support from surroundings? What support do you need? How openly do you speak about your T1DM? How much do you want your friends to know about diabetes? What is most important for you right now? Where do you see yourself and your diabetes in 5 years? The biggest challenge about T1DM? Positive/negative experiences What do you want us to know? <u>How</u> do you want to tell us? (Pictures, Unfinished sentences, Diary, Agenda for the consultation) Other ideas <ul style="list-style-type: none"> My measures, pump, insulin, goals, next consultation, ordering equipment, favorite web pages 	Main-function <ul style="list-style-type: none"> "My Page" Functions, modes and interactions: <p>Contact your provider/notebook</p> <ul style="list-style-type: none"> Unfinished sentences/questions Add photos Next consultation Diary (post a photo/text) My measures, pump, insulin, goals, favorite web pages
Workshop 2: The app's functions	Young people (4), Parents (3), Health care providers (2), Persons with special expertise and knowledge (2)	Retrospective study <ul style="list-style-type: none"> A general need to improve glycemic control Support those not attending clinical visits Interviews with young people and parents <ul style="list-style-type: none"> Support young people and parents to share concerns and challenges. Support parents to help them support their young people. Talk about and identify concerns, challenges and strategies in regard to hypoglycemia, worries about future, feeling different and incompetent in T1DM-management. Interviews with health care providers <ul style="list-style-type: none"> The moderator role cannot be provided by health care providers Messages from young people should be sent to health care providers' work mail. The app could be a potential icebreaker to elucidate challenges and concerns. A need for ongoing support Identified and met the security regulations <ul style="list-style-type: none"> Contact function fulfills security regulations Chat room fulfills security regulations 	Reminder function <ul style="list-style-type: none"> Set a reminder (predefined, define your own) How to get a reminder (repeat, notification, share with parents) Sync with calendar Contact-function <ul style="list-style-type: none"> Contact info: provider's picture, name, phone number, hours available Share blood glucose measures/cancel/book appointments/set the agenda Info about answering time Message notification Chat room <ul style="list-style-type: none"> Profile (picture, gender, age, department, be anonymous) Predefined groups (party/alcohol, food, sport) Open/private rooms Find someone with similar interest Share good and bad experiences/share knowledge/ask peers/upload tips/help to accept T1DM/ post an invitation For young people only Mentor <ul style="list-style-type: none"> Find/write a mentor Apply to be mentor Private room, mentor/mentee To help accept diabetes/To gain knowledge Mentor supervision 	Main function <ul style="list-style-type: none"> Reminder Chat room "My Page" Functions, modes and interactions: <p>Reminder</p> <ul style="list-style-type: none"> Predefined/define your own reminders Set reminder interval Notification <p>Chat with peers</p> <ul style="list-style-type: none"> Create a profile Predefined groups Create a message/ post a comment or invitation Open chat rooms Receive a message notification <p>Mentor</p> <ul style="list-style-type: none"> Create a mentor profile Contact mentor Reply to be mentor/to get a mentor Mentor supervision <p>Contact your provider</p>
Workshop 3: The sensitive topics	Young people (3), Parents (2), Health care providers (3), Persons with special expertise and knowledge (17)	Retrospective study <ul style="list-style-type: none"> A general need to improve glycemic control Interviews with young people and parents <ul style="list-style-type: none"> Support young people and parents to share concerns and challenges. Support parents to help them support their young people. 	Methods to identify the real challenge ("icebreaker") <ul style="list-style-type: none"> Contact your health care provider (share diary/share unfinished sentences/post a picture/set the agenda) Video self-portraits Information about "the soft themes..." <ul style="list-style-type: none"> Information about... (text, tips, video self-portraits, links) Others' experiences (sharing knowledge and experiences)	Main functions <ul style="list-style-type: none"> "My Page" Chat room Information-section Tips-packages To parents Functions, modes and interactions:

		<ul style="list-style-type: none"> • Talk about and identify concerns, challenges and strategies in regard to hypoglycemia, worries about future, feeling different and incompetent in T1DM management. <p>Interviews with health care providers</p> <ul style="list-style-type: none"> • The app could be a potential ice-breaker to elucidate the challenges and concerns. • A need for ongoing support 	<ul style="list-style-type: none"> ○ Peer stories ○ Events ○ Mentor ○ Interactive diary/blog (with gate-keeper) 	<p>Contact your provider/notebook</p> <ul style="list-style-type: none"> ○ Diary/Unfinished sentences/Post a picture <p>Chat with peers</p> <ul style="list-style-type: none"> ○ Pre-defined groups (feeling different, best/worst thing about diabetes, fuck diabetes) <p>Information (Text, links, tips, video self-portraits, animations)</p> <ul style="list-style-type: none"> ○ my body/diabetes stress/feeling different/hypo <p>Tips-notifications</p> <ul style="list-style-type: none"> ○ Receive a tip-notification about (my body, diabetes stress, feeling different, hypo) <p>To parents (text, links, tips, video self-portraits)</p> <ul style="list-style-type: none"> ○ what challenges can young with diabetes face/how to support
Workshop 4: Future	Young people (5), Parents (3), Health care providers (3), Persons with special expertise and knowledge (1)	<p>Retrospective study</p> <ul style="list-style-type: none"> • A general need to improve glycemic control <p>Interviews with young people and parents</p> <ul style="list-style-type: none"> • Support young people and parents to share concerns and challenges. • Support parents to help them support their young people. • Talk about and identify worries about future. <p>Interviews with health care providers</p> <ul style="list-style-type: none"> • The app could be a potential icebreaker to elucidate the challenges and concerns. 	<p>Information about...</p> <ul style="list-style-type: none"> ○ Pregnancy/T1DM complications/travel/education/family, alcohol/research update ○ Support parents to get an overview, how can it be to be a parent. <p>Sharing experiences</p> <ul style="list-style-type: none"> ○ Mentor ○ Chat ○ Positive stories ○ Video self-portraits ○ Contact your provider <p>Youth consultations</p> <ul style="list-style-type: none"> ○ Give space to difficult thoughts ○ Talk about potential challenges (worries about future) ○ What is actually challenging ○ Treatment should fit our lives, not the opposite ○ Praise and be positive ○ Motivate, ask ○ App and patient at the same level/address problems earlier ○ Personal consultations – what do you want to talk about <p>My adult department</p> <ul style="list-style-type: none"> ○ Movie (how was it to move to adult department, what can adult department offer/who are we) ○ Transfer information ○ My new provider team (to be able to contact new provider, work experience, picture) 	<p>Main functions</p> <ul style="list-style-type: none"> ○ “My Page” ○ “My department” ○ Chat room ○ Information section ○ Tip packages ○ To parents <p>Functions, modes and interactions:</p> <p>Contact your provider/notebook</p> <ul style="list-style-type: none"> ○ Diary/unfinished sentences/post a picture/set the agenda <p>My department (text/movies/photos of providers)</p> <ul style="list-style-type: none"> ○ Information (welcome, transfer to adult care, contact) <p>Chat with peers</p> <ul style="list-style-type: none"> ○ Predefined groups (future, pregnancy, travel) <p>Information (text, links, tips, video self-portraits, animations)</p> <ul style="list-style-type: none"> ○ Late complications/pregnancy/travel/sport/ what to tell others (e.g., at work) <p>Tips notifications</p> <ul style="list-style-type: none"> ○ Late term complications/pregnancy/travel/sport <p>To parents (text, links, tips, video self-portraits)</p> <ul style="list-style-type: none"> ○ Challenges the app can address/how to support
Workshop 5: To my parents	Young people (3), Parents (3), Health care providers (2), Persons with special expertise and knowledge (5)	<p>Retrospective study</p> <ul style="list-style-type: none"> • A general need to improve glycemic control • Families with divorced parents need extra support <p>Interviews with young people and parents</p> <ul style="list-style-type: none"> • Support young people and parents to share concerns and challenges. • Support parents to help them support their young people. • Talk about and identify the parties’ concerns, challenges and strategies in regard to hypoglycemia, worries about future, feeling different and incompetent in T1DM management. <p>Interviews with health care providers</p> <ul style="list-style-type: none"> • A need for ongoing support 	<p>A main function “To parents” (facts and information/chat, link to Facebook/tools (conflicts, anxiety)/video self-portraits)</p> <p>Information about being young with diabetes</p> <ul style="list-style-type: none"> ○ Brain development/What can be challenging (feeling different, “creating space” to measure blood glucose before everyone else runs out to school break)/normal reaction/information about alcohol, turning 18, diabetes etc. – provided with the basic knowledge to support. <p>Information about being a parent to a young person with diabetes</p> <ul style="list-style-type: none"> ○ Acknowledge the challenge. It is normal to be afraid/frustrated/You know your teen the best. Keep support/partner relationship – can be a challenge <p>Information about how young people wants to be supported</p> <ul style="list-style-type: none"> ○ Ask what kind of support we need/be available when we need you/talk about how we are doing (not only measurements)/show interest/help us during the difficult 	<p>Main functions</p> <ul style="list-style-type: none"> ○ “My department” ○ Information section ○ Tips packages ○ To parents ○ Reminder <p>Functions, modes and interactions:</p> <p>My department (What happens when my teen turns 18 and moves to adult department?)</p> <ul style="list-style-type: none"> ○ Information (welcome, transfer, contact, can parents join consultations?) ○ Movies ○ Pictures of providers <p>Information section (Text, links, tips, video self-portraits, animations)</p> <ul style="list-style-type: none"> ○ Information about T1DM and ...

			<p>days/listen to our frustrations/and stand by our side when we are not able to meet the expectations/do not hide/avoid diabetes – we then feel alone/don't be too controlling. We do not want to be interviewed by our parents. It makes us feel even more different/focus on realistic goals/support healthy lifestyle, education etc./do not seem like you know more about diabetes than us/do not interrupt when someone asks about our diabetes</p> <ul style="list-style-type: none"> ○ Parent tools (conflict management/dialogue tools/how to let go) <p>Peer experiences</p> <ul style="list-style-type: none"> ○ Parent to parent chat/meetings/link to face book ○ Young people present/tell their experiences (video self-portraits) 	<p>Tips notifications</p> <ul style="list-style-type: none"> ○ Tips about T1DM and... ○ About being young with diabetes ○ How to support your teen <p>To parents (text, links, tips, video self-portraits)</p> <ul style="list-style-type: none"> ○ Challenges faced by young with T1DM ○ How to support ○ What happens when my teen turns 18? ○ Siblings and relationship <p>Reminder</p>
<p>Workshop 6: Knowledge and skills</p>	<p>Young people (6), Parents (4), Health care providers (6), Persons with special expertise and knowledge (2)</p>	<p>Retrospective study</p> <ul style="list-style-type: none"> • A general need to improve glycemic control • Families with divorced parents need extra support <p>Interviews with young people and parents</p> <ul style="list-style-type: none"> • Support parents to help them support their young people. • Talk about and identify concerns, challenges and strategies in regard to hypoglycemia and being incompetent in T1DM management. <p>Interviews with health care providers</p> <ul style="list-style-type: none"> • A need for ongoing support 	<p>How to receive information?</p> <ul style="list-style-type: none"> ○ Text/animation/alcohol list/video self-portraits/links/tips ○ Seek information - box <p>Information about...</p> <ul style="list-style-type: none"> ○ Turning 18: What support can I get from community before/after turning 18/My social rights/What should I do when I turn 18? ○ Drugs: Don't/how it influences blood glucose level/diabetes/consequences/where to get help/why drugs are dangerous? ○ Drivers' license: What does it take to get a drivers' license (blood glucose level, insulin shock, complications)/renewal of drivers' license/tips – before driving/getting low during driving etc. ○ Sex: How sex influences your blood glucose/how to prevent being low/"lines" – how to tell your partner about diabetes/prevention/pump – keep it on/or not/something not possible ○ Sport: How does sport influence my body/help my diabetes/protein supplement and diabetes/food before and after exercise/insulin dosing tips/tips before, during, after exercise /when to measure blood glucose (before, during, after)/how to keep a stable blood glucose level during sport/how do different types of sport influence my blood glucose ○ Alcohol: how alcohol influences my body/blood glucose/list of carbs in alcohol/pump settings and alcohol/info to friends (drunk vs. having hypoglycemia)/what is best to drink ○ Travel: SOS, what do I do when losing insulin/break down of pump/how to store insulin/different time zones/what to remember – list/different food influences on blood glucose/from pump to pen/pump passport/how does heat/cold influence blood glucose/change in physical activity) ○ Hypoglycemia: What to eat?/how should I prepare friends?/glucagon/prevent hypoglycemia when exercising/symptoms/definition/what happens?/hotline) ○ Ketoacidosis: what is it/symptoms/why does it happen?/can I measure it?/what should I do?) ○ Pump/pen: Accessories/note insulin dosing/how to convert pump to pen/how and where to inject/SOS: acute pump failure/how to calculate insulin sensitivity/insulin nodes/type of insulin/ump pros/cons) ○ Food: List of carbohydrates in food/link to other apps/fast 	<p>Main functions</p> <ul style="list-style-type: none"> ○ "My page" ○ Carbohydrate counting ○ Chat room ○ Information section ○ Tips packages <p>Functions, modes and interactions:</p> <p>"My page"</p> <ul style="list-style-type: none"> ○ Ask a question of your health care provider ○ Set the agenda ○ Note "My insulin" ○ Calculate and note "Insulin sensitivity" <p>Carbohydrate counting</p> <ul style="list-style-type: none"> ○ Information/tips/how to count/quiz/description and links to other carbohydrate-counting apps <p>Chat room</p> <ul style="list-style-type: none"> ○ Ask peers (predefined groups of different diabetes sections) <p>Information (Text, links, tips, video self-portraits, animations)</p> <p>Tips notifications</p>

			<p>and slow carbs/insulin dosing/food to keep blood glucose level stable/what does a dietician offer?/food and sport/protein supplement/how to avoid gaining weight/simple recipes/when does my blood glucose rise after different food intake/how to count carbohydrates</p> <p>Carbohydrate counting, main function</p> <ul style="list-style-type: none"> ○ Introduction to carbohydrate counting apps/food and sport/insulin dosing/social (chat/ask your dietician/blog)/party (alcohol lexicon, eat before sleep)/tips/fast and slow carbs/hypoglycemia – what can I eat? 	
<p>Workshop 7: Design, Language and Message</p>	<p>Young people (5), Parents (1), Health care providers (0), Persons with special expertise and knowledge (15)</p>	<p>Interviews with young people and parents</p> <ul style="list-style-type: none"> • Support young people and parents to share concerns and challenges. • Support parents to help them support their young people. • Talk about and identify concerns, challenges and strategies in regard to hypoglycemia, worries about future, feeling different and incompetent in T1DM management. <p>Interviews with health care providers</p> <ul style="list-style-type: none"> • The app could be a potential icebreaker to elucidate the challenges and concerns. 	<p>Layout</p> <ul style="list-style-type: none"> ○ Simple/like customizing/blue and green colors with icons/should not remind about diabetes/funny/Main functions should be distinct/sub-menus at the side of the screen/icons instead of text/no color-box pictures ○ Article layout (heading, short summary, detailed description – all articles should be designed the same way, tips/good ideas) <p>Navigation</p> <ul style="list-style-type: none"> ○ Easy to navigate/main categories with submenus <p>Content</p> <ul style="list-style-type: none"> ○ No log book – too much work ○ Place “Seek information” function at the top of the screen ○ Tips/articles/chat <p>Language</p> <ul style="list-style-type: none"> ○ Neutral language - not threatening. (e.g., be careful about writing “this is dangerous...” – instead “take precautions”) <p>Message</p> <ul style="list-style-type: none"> ○ Focus on possibilities/positive things instead of limitations/negative things 	<p>Layout</p> <ul style="list-style-type: none"> ○ Blue and green colors/icons with illustrations/main functions distinct/submenus at the side of the screen ○ Article layout (heading, short summary, detailed description, including tips, possible to choose to see video) <p>Navigation</p> <ul style="list-style-type: none"> ○ Easy to navigate/main categories with submenus <p>Content</p> <ul style="list-style-type: none"> ○ “My page” (including the unfinished sentence “The best about diabetes...”)/articles/chat (including the pre-defined group: “the best about diabetes”)/ ○ “Seek information” function in the top of information section <p>Language</p> <ul style="list-style-type: none"> ○ Neutral – not threatening <p>Message</p> <ul style="list-style-type: none"> ○ Positive/focus on possibilities