Multimedia Appendix 1. Sample questions for the semistructured interviews.

Patients

1. Do you or your family think this software is easy to use?
2. Can you talk about the process and content of the nurse's guidance on how to use this app?
3. What is the biggest challenge for you or your family in using the app?
4. Can you talk about the advantages and disadvantages of the App?
5. Can you talk about the further expectations of the App?

Nurses

1. What type of tasks do you give your patients to conduct their volume balance monitoring at home?
2. What types of information should be delivered via I-Self-Care?
3. What is the greatest challenge in teaching patients to use I-Self-Care?
4. What is the biggest challenge for you to use I-Self-Care?
5. What are the advantages and disadvantages of I-Self-Care?
6. What are the further expectations for the use of I-Self-Care?

README FILE OF I-Self-Care

How to do fluid balance management for patients with heart failure

Shanghai China

Zhongshan Hospital, Fudan university

PART ONE

For the

Patient

How to log in?

Method 1：Click the login link：

https://fluid.zs-hospital.sh.cn/

Method 2：Scan the WeChat QR code：

How to log in?

Account No.: medical record No.

Password: last 4 digits of ID card

Account No. ➡️ *住院号   请输入住院号

Password ➡️ *身份证后4位   请输入身份证最后4位

Remember info ➡️ ✅ 记住上述信息

Login ➡️ 登录

liquid-app | 登录

中山医院出入水量自管理App

© 复旦大学附属中山医院

How to Record?

Fluid intake: Select dining according to your situation

Fluid outflow: Enter the number according to your

situation

Basic info →
基本信息
床号：43，入院时间：2016-12-18

Time of input →
录入时间　　2022-04-13 20:18:52　　＞

Fluid intake →
食物入水量(毫升)
选择你本次时间食用的食物

Breakfast　**Lunch**　　**Dinner**

Select dining →
早餐　　　午餐　　　晚餐

Add meal　　　**Drinks**

加餐　　　水和饮品

Fluid outflow →
出水量(毫升)
请根据实际情况手动输入出水量

Urine　　　尿量　　0　　　清空

Defecate　　大便　　0　　　清空　　　**Emptying function**

Vomit　　　呕吐　　0　　　清空

Symptoms Hospitalization Diuretics

Other records →
症状记录　　住院记录　　利尿药

☆ 保存

Save

How to Record?

Whether you choose breakfast, lunch, dinner or add meals, the following interface will appear.

Return ➡	〈返回　　　选择早餐
Search Box ➡	Q 请输入搜索关键词
Sweet potato and beans, staple food ➡	⊟ 谷薯、杂豆及主食
Dishes, meat ➡	⊟ 菜肴、肉类
Eggs ➡	⊟ 蛋类
Vegetables ➡	⊟ 蔬菜
Fruits ➡	⊟ 水果
Seafood ➡	⊟ 海产品
Bean products ➡	⊟ 豆制品
Dairy ➡	⊟ 奶制品
Drinks ➡	⊟ 饮料、水

Food categories

liquid-app | 选择食物

How to Record?

You can use the search function or select food categories.

Return →

If you choose
sweet potato and beans, staple food →

The selection boxes for
various kinds of food will appear →

How to Record?

You can choose the food you have eaten,

for example steamed buns.

Enter the number of steamed buns you eat →

Choose the unit of steamed bread you eat →

Save →

How to Record?

After you save the food you eat, you can see a number in the upper right corner of the interface.

1

Click the number

2

The food you eat will appear
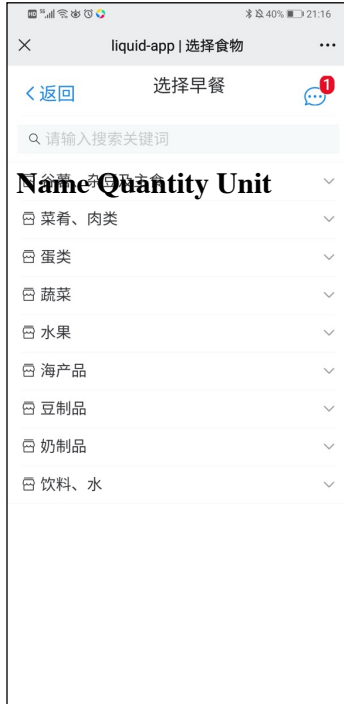
3

If you input wrong, slide left and delete

Name Quantity Unit

Delete

How to Record?

Tips

The above shows the recording method of only

one kind of food, and the recording methods of

other foods are the same as above.

How to Record?

Symptoms record

Return ➡	〈返回
	症状记录
	No　**Yes**
Edema ➡	水肿:　⭕ 否　✅ 是
Dyspnea ➡	呼吸困难:　✅ 否　⭕ 是
Fatigue ➡	疲乏:　⭕ 否　✅ 是
Gain weight ➡	体重增加（在饮食运动习惯没有变化的情况下，3天内体重突然增加2kg以上）:　⭕ 否　✅ 是
Delicate appetite ➡	食欲不振:　⭕ 否　✅ 是
Chest tightness, palpitation ➡	胸闷、心悸:　✅ 否　⭕ 是
Other symptoms ➡	其他症状:
Save ➡	保存

liquid-app | 症状记录

How to Record?

Tips

When you log in the next time after inputting symptoms, a box will automatically pop up in the main interface to ask whether your symptoms have changed. If there are changes, you can modify them directly in the message box, and then click OK. If not, click Cancel.

How to Record?

Hospitalization record

Return →

Time of hospitalization →

Reason for hospitalization →

Aggravation of HF

Other diseases

Outcome of hospitalization →

Heal

Better

No change

Other

Save →

📶 ⏱ ☀ ⏰ 🔵 ✳ 🔕 35% 🔋 21:42

✕　　liquid-app | 住院记录　　•••

〈返回　　　　住院记录

住院时间:　　2022-04-13 21:42:01　　〉

住院原因:　　○ 心脏病情加重
　　　　　　　○ 其他疾病

其他疾病自定义

住院结局:　　○ 痊愈

　　　　　　　○ 好转

　　　　　　　○ 无改变

　　　　　　　○ 其他

其他自定义

保存

How to Record?

Diuretic record

Return

Add

No   **Yes**

Kinds of Diuretic
How many times a day
How many milligrams each time

Save

---

liquid-app | 利尿药记录

服用利尿药

〈返回   添加

以下内容用于记录您口服利尿药的情况，如果用药情况发生改变，您可以随时修改并记录

呋塞米: ○ 否   ○ 是
每天   次
每次   毫克

螺内酯: ○ 否   ○ 是
每天   次
每次   毫克

托拉塞米: ○ 否   ○ 是
每天   次
每次   毫克

氢氯噻嗪: ○ 否   ○ 是
每天   次
每次   毫克

吲达帕胺: ○ 否   ○ 是
每天   次
每次   毫克

托伐普坦: ○ 否   ○ 是
每天   次
每次   毫克

阿米洛利: ○ 否   ○ 是
每天   次
每次   毫克

保存

Data analysis and summary

Slide to select date →

Data analysis and summary

Total amount of fluid intake and outflow →

Detailed data of fluid intake and outflow →
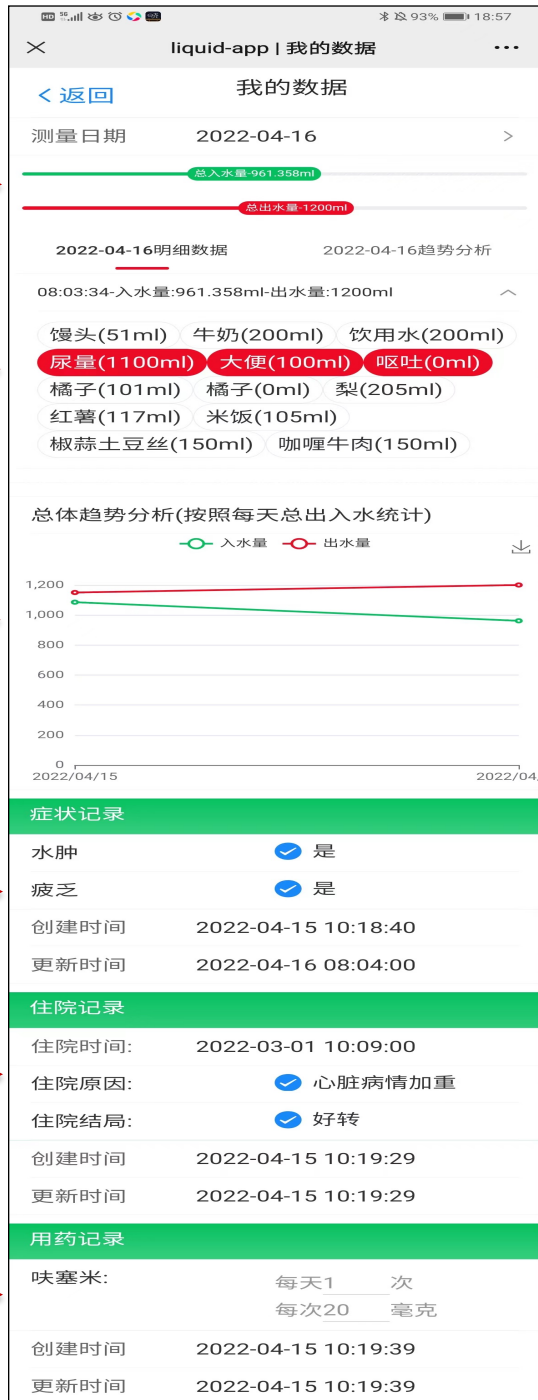
Daily trend of fluid intake and outflow →

Patient self-reported symptoms →

Patient self-reported hospitalization →

Patient self-reported diuretics usage →

liquid-app | 我的数据

我的数据

| 测量日期 | 2022-04-16 | > |

总入水量-961.358ml

总出水量-1200ml

2022-04-16明细数据   2022-04-16趋势分析

08:03:34-入水量:961.358ml-出水量:1200ml

馒头(51ml) 牛奶(200ml) 饮用水(200ml)
尿量(1100ml) 大便(100ml) 呕吐(0ml)
橘子(101ml) 橘子(0ml) 梨(205ml)
红薯(117ml) 米饭(105ml)
椒蒜土豆丝(150ml) 咖喱牛肉(150ml)

总体趋势分析(按照每天总出入水统计)
○— 入水量 ○— 出水量

1,200
1,000
800
600
400
200
0
2022/04/15   2022/04,

症状记录
水肿	✓ 是
疲乏	✓ 是
创建时间	2022-04-15 10:18:40
更新时间	2022-04-16 08:04:00

住院记录
住院时间:	2022-03-01 10:09:00
住院原因:	✓ 心脏病情加重
住院结局:	✓ 好转
创建时间	2022-04-15 10:19:29
更新时间	2022-04-15 10:19:29

用药记录
呋塞米:	每天1 次
	每次20 毫克
创建时间	2022-04-15 10:19:39
更新时间	2022-04-15 10:19:39

PART TWO

For Medical Staff

How to log in?

Method 1：Click the login link：

https://fluid.zs-hospital.sh.cn/#/doctorlogin

Method 2：Scan the WeChat QR code：

How to log in?

Account No.: Medical record No.

Password: A unified password

Account No. ➝ *住院号   请输入住院号

Password ➝ *查询密码   医生查询密码

Login ➝ 查询

liquid-app | 医护登录

中山医院出入水量自管理App

ⓒ 复旦大学附属中山医院

How to Record?

Based on the self-reported data by the patients, medical staff can also add and modify the data according to the actual situation of the patient.

Basic info →

Start time →

End time →

Enter medical record No. and query
Then，switch to another patient →

Fluid intake: custom input →

Fluid outflow: custom input →

Save →

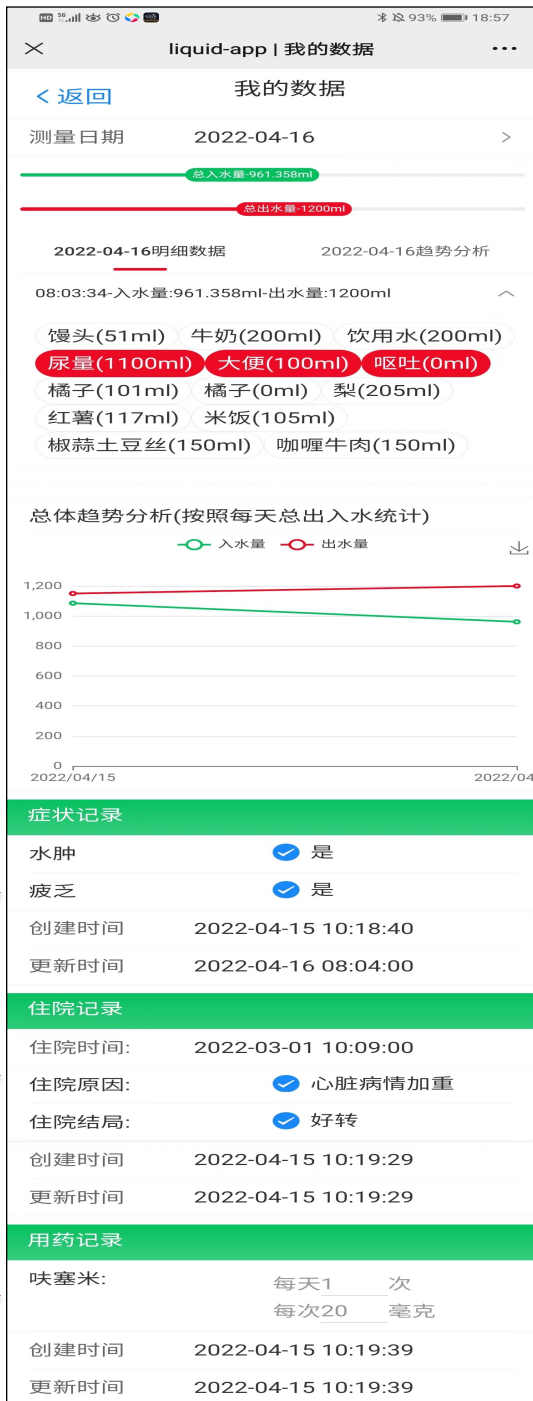**liquid-app | 数据查询**

病人出入水量管理

基本信息

　　床号：43，入院时间：2016-12-18

起始时间　　2022-04-14 08:27　　>

截至时间　　2022-04-14 08:27　　>

住院号　　1010694　　查询

入水量(ml)
来自护理记录系统的数据可以根据实际情况增删

增加

出水量(ml)
来自护理记录系统的数据可以根据实际情况增删

增加　　引流

出入水量(ml)
病患自报数据

保存

Data analysis and summary

Total amount of fluid intake and outflow

Detailed data of fluid intake and outflow

Daily trend of fluid intake and outflow

Patient self-reported symptoms

Patient self-reported hospitalization

Patient self-reported diuretics usage

liquid-app | 我的数据

我的数据

测量日期　2022-04-16

总入水量-961.358ml

总出水量-1200ml

2022-04-16明细数据　　　2022-04-16趋势分析

08:03:34-入水量:961.358ml-出水量:1200ml

馒头(51ml)　牛奶(200ml)　饮用水(200ml)
尿量(1100ml)　大便(100ml)　呕吐(0ml)
橘子(101ml)　橘子(0ml)　梨(205ml)
红薯(117ml)　米饭(105ml)
椒蒜土豆丝(150ml)　咖喱牛肉(150ml)

总体趋势分析(按照每天总出入水统计)
入水量　出水量

1,200
1,000
800
600
400
200
0
2022/04/15　　　　　　　　　　2022/04,

症状记录

水肿　　　✅ 是
疲乏　　　✅ 是
创建时间　2022-04-15 10:18:40
更新时间　2022-04-16 08:04:00

住院记录

住院时间:　2022-03-01 10:09:00
住院原因:　✅ 心脏病情加重
住院结局:　✅ 好转
创建时间　2022-04-15 10:19:29
更新时间　2022-04-15 10:19:29

用药记录

呋塞米:　每天1　次
　　　　　每次20　毫克
创建时间　2022-04-15 10:19:39
更新时间　2022-04-15 10:19:39

Hand in hand to protect your heart!

Shanghai China

Zhongshan Hospital, Fudan university