

Home Telemanagement for Patients with Ulcerative Colitis (UC HAT)

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Barriers to Successful Outcomes in Patients with Ulcerative Colitis (UC)

- Ineffective medical therapy
- Nonadherence
- Side effects
- Inadequate monitoring
 - Access to care
- Discordance
- Poor patient education

Home Automated Telemanagement (HAT)



- A telemedicine system designed to assist:
 - Health care practitioners treat and monitor their patients
 - Clinicians in educating patients
 - Patients in following self-care plans

How Can HAT Improve Outcomes Patients with UC?



- May assess adherence to medical therapy
- May detect drug side effects
- May improve monitoring of bowel symptoms
 - Will improve access to care
- May be an effective mechanism to provide inflammatory bowel disease (IBD)-focused education
- May decrease discordance

Chronic Disease Informatics Group Server



Provider's PC



Electronic Scale



Home Unit



UC HAT



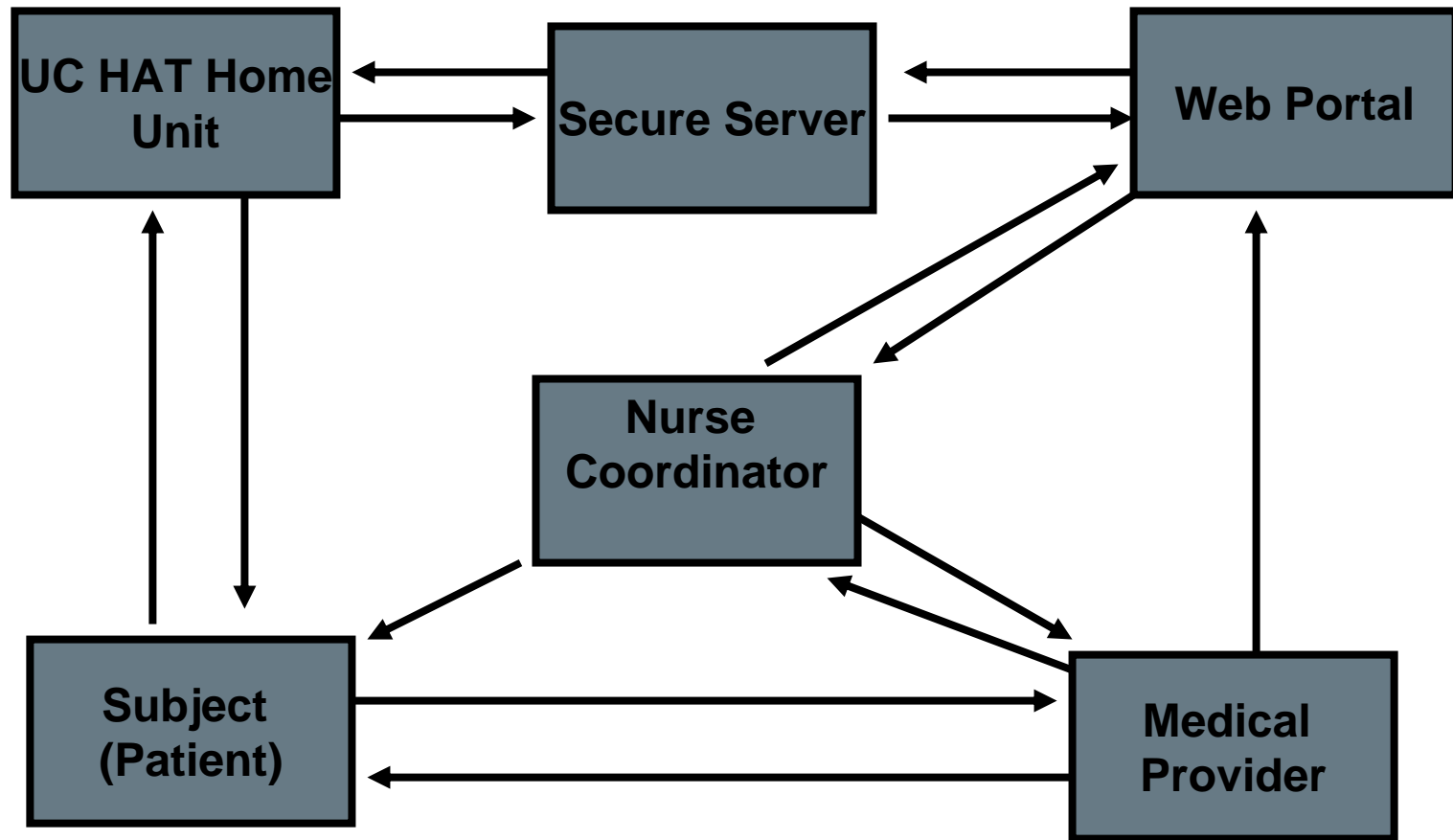
- Patient Home Unit contains:
 - Laptop
 - Weight scale
- Laptop contains:
 - UC Symptom Diary
 - Medication Adherence Check
 - Side Effects Inventory
 - Assessment of Body Weight
 - Patient Educational Curriculum
 - Messaging system
 - Action plan
- Physician Web Portal contains:
 - Alerts and action plans
 - Customized medication list
 - Data trends

How many Tablets of Azulfidine have you taken since your last test?

14

Use arrow keys and then press ENTER

Information Flow in HAT System



UC HAT Action Plans: Yellow Zone

Yellow Zone	Symptoms	Actions
Moderate Sxs	Overall health poor	Cont. your current meds; it can take a few weeks to take effect
	4-6 BM's/day	Take one Canasa supp nightly
	1-3 nocturnal awakenings	Take one Rowasa enema nightly
	More than trace blood in stool	Double the dose of oral 5-ASA
		Start prednisone
		Call your RN or MD to schedule infliximab
		Call your RN or MD



UC HAT Action Plans: Red Zone

Red Zone	Symptoms	Actions
Severe Sxs	Overall health very poor or terrible	Cont. your current meds; it can take a few weeks to take effect
	>7 BM's/day	Start prednisone
	>3 nocturnal awakenings	Call your RN or MD to schedule infliximab
		Call your RN or MD
		Report to the ER



Preliminary Data: IBD HAT 6 Month Pilot Study



- Study Design: Quasiexperimental study design (Pre/Post test)
- Duration: 6 months
- Subjects: Patients with Crohn's disease, indeterminate colitis, and UC
- Intervention: Weekly assessment with IBD HAT
- Primary Outcomes:
 - Feasibility (**80% adherence with system over 6 months**)
 - Patient Acceptance
 - Attitudinal Survey



IBD HAT Secondary Outcomes

End Point	Variable	Baseline	6-month Visit	p value
Clinical Disease Activity	<i>Harvey Bradshaw Index</i>	3.8+/-4.3	2.2+/-3.6	0.09
Disease-Specific Quality of Life	<i>Short Inflammatory Bowel Disease Questionnaire</i>	49.2+/-15.1	55.6+/-14.5	0.06
Patient Knowledge	<i>Crohn's and Colitis Knowledge Questionnaire</i>	9.2+/-5.3	12+/-4.4	0.0007



Preliminary Data: UC HAT Studies

- Ten patients from the IBD program at the University of Maryland (UM) were enrolled
- Each patient received a 30-minute instruction session followed by
 - Self-testing with assistance
 - Self-testing with assistance on request
 - Self-testing without assistance
- At end of training session
 - 10 item attitudinal survey
 - Structured qualitative interview

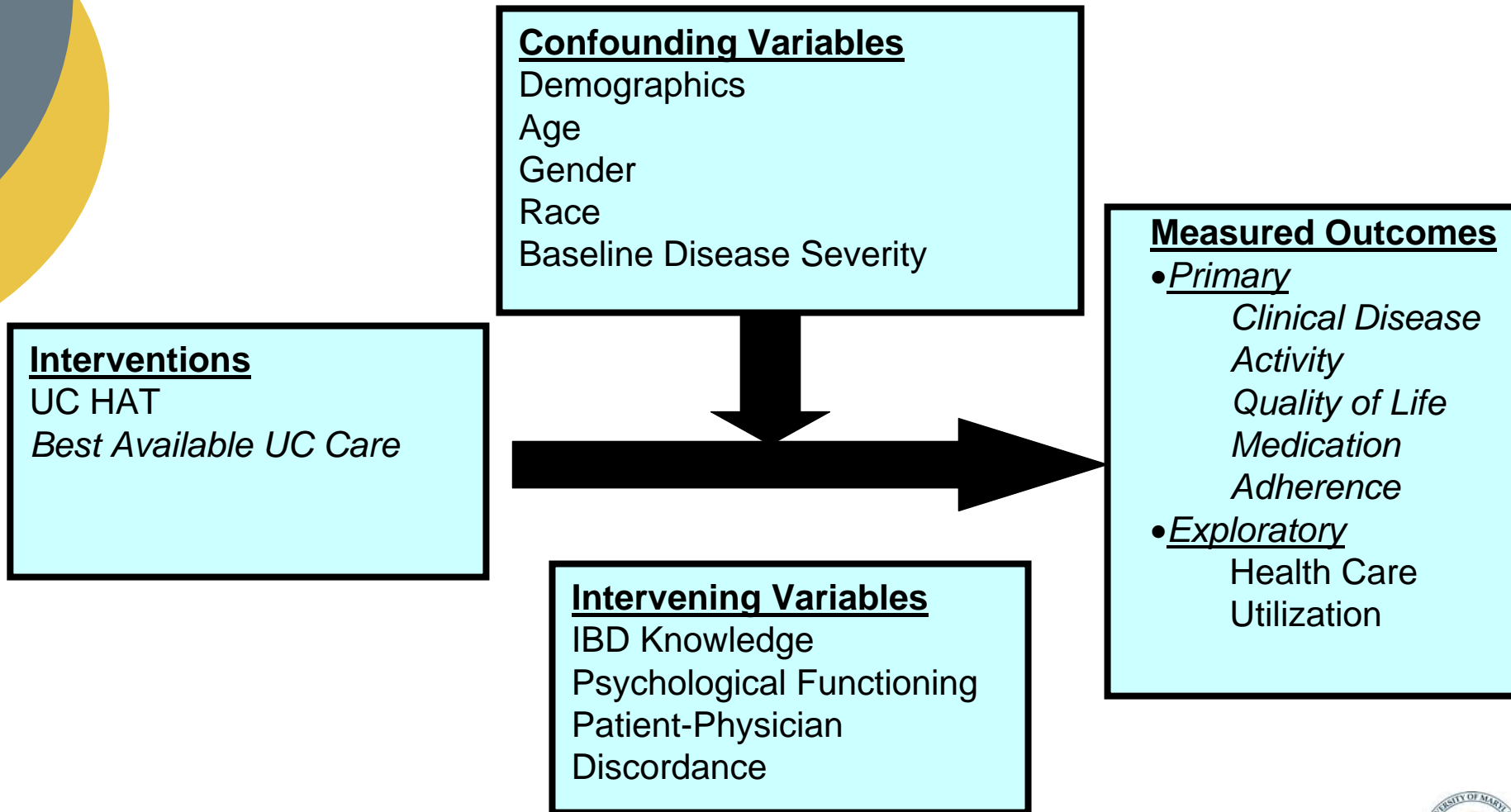
UC HAT Results of Attitudinal Survey



How complicated were the self-test procedures?	Very complicated 0 (0%)	Moderately complicated 0 (0%)	Slightly complicated 0 (0%)	Not complicated at all 10 (100%)
How difficult was working with the computer?	Very difficult 0 (0%)	Moderately difficult 0 (0%)	Slightly difficult 0 (0%)	Not difficult at all 10 (100%)
How much of your time did the self-testing take?	Very significant amount 0 (0%)	Considerable 0 (0%)	Little 3 (30%)	Very Little 7 (70%)
What is the maximum frequency of self-testing you think you can tolerate?	Once a week 4 (40%)	Twice a week 2 (20%)	Three times a week 2 (20%)	Four times a week 2 (20%)
Would (Did) you feel safer while monitored by the system?	Significantly safer 4 (40%)	Moderately Safer 2 (20%)	Slightly safer 1 (10%)	Same as Usual 3 (30%)
Would you like to use this self-testing program in the future?	Certainly Yes 7 (70%)	Maybe 2 (20%)	Unlikely 1 (10%)	No 0 (0%)



UC HAT Research Model



UC HAT Study Design



- Randomized, controlled trial
- 12 months
- Intervention
 - Weekly HAT
 - Best available care
 - Written action plans
 - Educational fact sheets from CCFA
- Subjects
 - 50 in each arm from UM and Baltimore VAMHCS
 - Stratified for disease activity at baseline



UC HAT Study Design



Variable	Baseline	4 months	8 months	12 months
Seo index	X	X	X	X
ESR	X	X	X	X
CRP	X	X	X	X
IBDQ	X	X	X	X
MMAS	X	X	X	X
Refill data	X	X	X	X
ER visits	X	X	X	X
Hospitalizations	X	X	X	X

Conclusions

- Multiple barriers to successful treatment outcomes exist in patients with UC
- Telemedicine may improve the delivery of care to patients with UC
- Preliminary data suggest that patients with IBD and UC are accepting of HAT, can adhere to self-testing, and may have improved clinical outcomes
- RCT ongoing to evaluate if UC HAT improves outcomes compared to best available care

Extra Slides





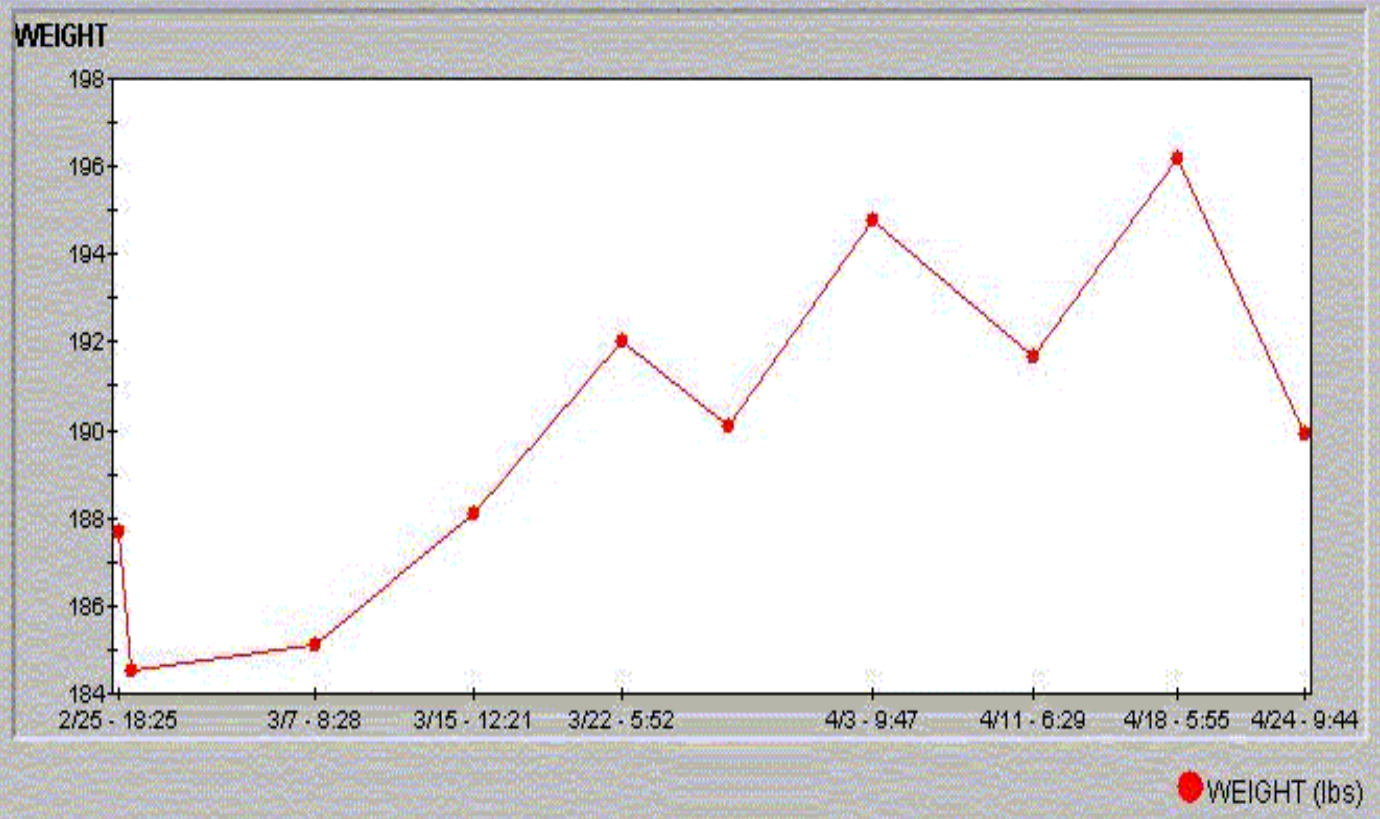
Home Monitoring

Patient Name: Doe, John
Phone: 555-555-5555

Active Patient
Doe, John
HAT ID: 243

- [Current Alerts](#)
- [List of Patients](#)
- Patient Management
 - [Patient summary](#)
 - [Disease profile](#)
 - [Current Medications](#)
 - [Self-testing Calendar](#)
 - [Treatment goals](#)
 - [Alert history](#)
 - [Alert Parameters](#)
 - [Monthly reports](#)
 - [Home monitoring](#)
 - [Message for the patient](#)
 - [Message from the patient](#)

Select zoom range by clicking and dragging across the data



Reset X Axis

● WEIGHT (lbs)

UC Action Plans: Green Zone

GREEN (mild symptoms or remission)	Overall general health very well or slightly below par	O Congratulations! Your symptoms are in the green zone.
	1-3 bowel movements per day	O Remember to take your medications as prescribed by your physician
	No or trace blood in the stool	O Remember to complete self-testing next week
	No nocturnal awakenings	O Begin/continue tapering prednisone by half a tablet (5 mg) per week
		O Begin tapering the suppositories/enemas to every other day

UC Action Plans: Red Zone

RED (severe symptoms)	Overall health is very poor or terrible	<ul style="list-style-type: none"> ○ Continue your current medications. It can take a few weeks for the medication to take effect
	> 7 bowel movements per day	<ul style="list-style-type: none"> ○ Start prednisone 40 mg (4 tablets (10 mg each)) per day and call physician
	> 3 nocturnal awakenings	<ul style="list-style-type: none"> ○ Start prednisone 60 mg (6 tabletets (10 mg each)) per day and call physician
		<ul style="list-style-type: none"> ○ Call your nurse or doctor to schedule infliximab
		<ul style="list-style-type: none"> ○ Call your nurse or doctor immediately
		<ul style="list-style-type: none"> ○ Report to the emergency room