

Project Background

Chronic obstructive pulmonary disease is a chronic bronchitis and/or emphysema characterized by airflow obstruction that can further develop into a common chronic disease of pulmonary heart disease and respiratory failure. It is related to the abnormal inflammatory reaction of harmful gases and harmful particles, and the morbidity rate and mortality rate are very high. The incidence rate of over 40 years old in the world has reached 9% to 10%.

Chronic obstructive pulmonary disease (COPD) is a common disease that can be prevented and treated by persistent airflow limitation. The airflow is restricted to develop progressively, and the airway and lung are toxic particles or gases. The chronic inflammatory response is enhanced.

In China's chronic obstructive pulmonary grading diagnosis and treatment technical documents, it is mentioned that the primary layer plays three major roles in the management of chronic obstructive pulmonary disease: firstly, early screening of high-risk groups, ie early screening and early diagnosis of chronic obstructive pulmonary disease; secondly, stability Long-term standardized management of patients with chronic obstructive pulmonary disease; thirdly, if patients with chronic obstructive pulmonary disease have any symptoms, such as poor control, comorbidities and drug intolerance, they should be referred for treatment.

Our Goals

Our team is aiming to build an app to identify symptoms of COPD as it is often misdiagnosed.

The app should also provide management options as well as scheduling and reminders.



Team Roles and Contributions

Zhihua Jin	Project Manager & QA	General Manager, draft reports,test the application
Zhixun Wang	Product & Project Manager	Help to manage the project ,draft reports, presentation and test
Yepeng Ding	Developer	Developing the app and deploy on the server
Hua Chen	QA	Run tests on the app and assure the quality

What's happening now in Industry?







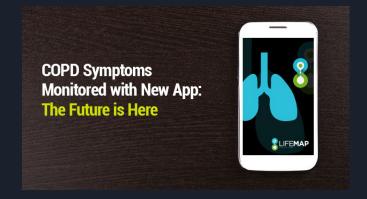


What's happening now in Industry?

China's environment, especially air quality becomes worse, more and more people are suffering from COPD. With increasing demands for monitoring and protecting our lungs, there are a lot of companies cooperating with top hospitals to manage COPD better by using Apps.







What's the gap now in Domain?

Major Gaps

- Despite many excellent COPD guidelines or strategy documents, there is evidence that COPD care is still not optimal for many patients, and most patients do not follow the guidelines for treatment and management.
- The Gap from different Aspects
 - From the Aspect of Healthcare Providers
 - From the Aspect of Patient

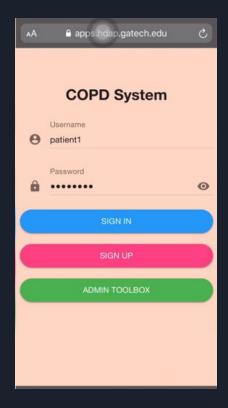
How do users think of such Apps?

- Perceive significant potential to help manage the condition
 - Acquire educational knowledge
 - Address feelings of fear and panic
 - Maintain control of the information
 - Encourage to start monitoring
- Concern to the security of Personal Medical Information

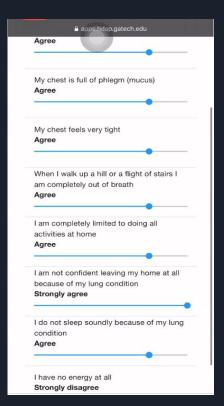
Project Summary

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COPD patient needs research	Zhihua Jin	100%	10/19/19	10/28/19												
Phase 2 Prototype Design																
Demand analysis document	Zhihua Jin; Zhixun Wang	100%	10/24/19	10/28/19												
UI/UX design: wireframe	Zhihua Jin; Zhixun Wang	100%	10/24/19	10/28/19												
Completion of prototype	Zhihua Jin; Zhixun Wang	100%	10/19/19	10/24/19												
Phase 3 Software Development																
Front-end function implementa	Zhixun Wang; Yepeng Ding	100%	10/24/19	11/13/19												
Database design and input	Zhihua Jin; Zhixun Wang	100%	10/24/19	11/10/19												
SMART-on-FHIR skeleton app	Hua Chen	100%	10/21/19	10/30/19												
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Deliverable 3	Zhihua Jin; Zhixun Wang	100%	10/16/19	11/10/19												
Phase 4 Test & HDAP deployment																
Unit-test set up	Yepeng Ding; Hua Chen	100%	11/1/19	11/17/19												
Testing & Debugging	Yepeng Ding; Hua Chen	100%	11/1/19	11/24/19												
Deliverable 4	Zhihua Jin; Zhixun Wang	100%	11/10/19	11/17/19												
Overall Evaluation	Zhihua Jin; Zhixun Wang	100%	11/18/19	11/24/19									TIT			
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Demo Video

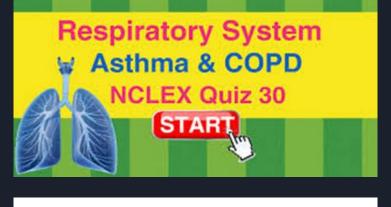






Looking Ahead











DELIVERABLE 5 FINAL SUBMISSION

COPD Diagnosis & Management App – Final Submission

Term: Fall 2019

Team Name: Cyberlife

Project: #48 COPD Identify & Manage 2

Section I: Team Details

Team Members:

Yepeng Ding - vding369@gatech.edu - Developer

Hua Chen - hchen659@gatech.edu - QA

Zhihua Jin - ziin80@gatech.edu - Project Manager & QA

Zhixun Wang - <u>zwang999@gatech.edu</u> - Developer

TA Mentor: Ronnie Jones

Industry Advisor: N/A

Github Link: https://github.gatech.edu/gt-cs6440-hit-fall2019/COPD-Identify-Manage-2

Quick Description of Application

This is an application that would help patients self-diagnose their COPD symptoms as well as manage their health indicators. Once a high risk of COPD is diagnosed in the app, the patients could choose to make appointments with their doctors and manage these appointments. There is also a daily health record function available for patients so they can manage their health status. Last but not least, a learning section is launched to educate COPD patients and provide suggestions on their daily exercises.

Final Gantt Chart

COPD-Identify-Manage-2

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Section II – Application

Github Repository: All of your code must be in this repository.

Final Git Commit: 1481977e8d90863e28cb6507d3818361d25d6d65

Github Link:

https://github.gatech.edu/gt-cs6440-hit-fall2019/COPD-Identify-Manage-2/tree/master/Final%20Delivery

Branch: Master

Application Details

App Name: COPD Identification and Management App

App URL: https://apps.hdap.gatech.edu/cim2app/

App Description: Deployed on HDAP, this app can be used by both patients and doctors to manage their reservations. For patients, there are more functions such as patient education, COPD self-diagnosis survey and health record management.

Section III - Project Presentation

Link to Presentation Video: https://youtu.be/c9U-In2MgG8 (online version)

(Notes: I made a few attempts but still found the voice of last demo part blurry on Youtube. If this bothers you, I wish you could download this video through the link: https://drive.google.com/file/d/1ryNb-19uvC-qVwQrrY82uBJWaPHQlg6A/view?usp=sharing

Sorry for any inconvenience.

Section IV - Project Documentation

Final Gantt Chart:

https://github.gatech.edu/gt-cs6440-hit-fall2019/COPD-Identify-Manage-2/blob/master/Final%20Delivery/Gantt%20Chart-Cyberlife.png

Application Manual:

https://github.gatech.edu/gt-cs6440-hit-fall2019/COPD-Identify-Manage-2/blob/master/Final%20Delivery/Application%20Manual-Cyberlife.pdf

Special Instructions:

https://github.gatech.edu/gt-cs6440-hit-fall2019/COPD-Identify-Manage-2/blob/master/Final%20Delivery/Special%20Instructions-Cyberlife.md

Research Directory:

https://github.gatech.edu/gt-cs6440-hit-fall2019/COPD-Identify-Manage-2/tree/master/Final%20Delivery/Research%20Directory-Cyberlife

Documentation Directory:

https://github.gatech.edu/gt-cs6440-hit-fall2019/COPD-Identify-Manage-2/tree/master/Final%20Delivery/Documentation%20Directory-Cyberlife

Project Plan:

https://github.gatech.edu/gt-cs6440-hit-fall2019/COPD-Identify-Manage-2/blob/master/Final%20Delivery/Documentation%20Directory-Cyberlife/ProjectPlan.md

Use Case Model:

https://github.gatech.edu/gt-cs6440-hit-fall2019/COPD-Identify-Manage-2/blob/master/Final%20Delivery/Documentation%20Directory-Cyberlife/UseCase.md

Design Document:

https://github.gatech.edu/gt-cs6440-hit-fall2019/COPD-Identify-Manage-2/blob/master/Final%20Delivery/Documentation%20Directory-Cyberlife/Design.md

Test Plan:

https://github.gatech.edu/gt-cs6440-hit-fall2019/COPD-Identify-Manage-2/blob/master/Final%20Delivery/Documentation%20Directory-Cyberlife/TestPlan.md