

**Doctors and Clinicians of Tomorrow  
UF Health Science Center- Jacksonville  
Proposal**

**By**

***Ross E. Jones, M.D.***

**Assistant Professor, Community Health and Family Medicine  
Medical Director, Community Health  
University of Florida College of Medicine- Jacksonville**

***Madeline Joseph, MD, FAAP, FACEP***

**Professor of Emergency Medicine and Pediatrics  
Associate Dean for Inclusion and Equity  
University of Florida College of Medicine- Jacksonville**

**2022-2023**

## **Doctors and Clinicians of Tomorrow UF Health Science Center- Jacksonville**

### **Significance**

There is a critical need for physicians, nurses and pharmacists throughout the state of Florida. Based on current estimates, Florida will need an additional 17,924 doctors and 59,000 nurses by 2035. There is also a great demand for pharmacists given their increased importance in vaccination programs and chronic disease management. These shortages are predicted to become dire as more demand for clinical services grows in line with the increases in Florida populations.

Not only is there an issue with the size of Florida's health care workforce but with the diversity of Florida's workforce, specifically its clinicians. Florida is one of the most ethnically diverse states in the US. However, this diversity is not reflected in its health care workforce. Black, Hispanic, and Native American clinicians in medicine, nursing, and pharmacy are underrepresented compared to their share of the population. To increase the size and diversity of the health care workforce, we must create pipeline programs that inspire and prepare students, especially students from diverse backgrounds, to enter professional schools in the health sciences.

To address the lack of diversity in the health profession, we plan to create a Doctors and Clinicians of Tomorrow (DCoT) program at UF Health Science Center- Jacksonville (UFHSC-J). The goals of the DCoT program at UFHSC-J:

1. Inspire students to pursue a clinical career in medicine, nursing, or pharmacy.
2. Increase student confidence to pursue a clinical career.
3. Increase the number of students from underrepresented backgrounds gaining admission to professional medical, nursing, or pharmacy schools.

The DCoT program at UF Health Jacksonville will be based on successful pipeline programs from across the county. Most notably, the Doctors of Tomorrow program at the University of Michigan. This program has successfully increased the number of minority students entering health care careers.

### **Program Overview**

#### **Pilot Phase**

We plan to start the DCoT program with 10-15 9th graders from two high-achieving schools in underrepresented communities, Paxon School for Advanced Studies and Stanton College Preparatory School. Given their status as magnet schools, these schools draw students from across Jacksonville. Importantly, they also provide a rigorous curriculum enabling students to succeed in the undergraduate environment. In addition, both schools consistently rank among the best high schools in the state and nation.

We will engage champions at each school to help identify diverse and motivated students who would benefit from the DCoT program. We will intentionally recruit students who are under-represented in medicine and health science to be a part of the program, such as students that would be first-generation college students and minoritized racial/ethnic students. The students selected for the program will be interested in a career in health professions and have the potential to be successful in a health care career. The champions would also help coordinate activities to optimize the scheduling of DCoT activities to avoid interfering with events occurring at the students' high school. These champions would also be liaisons for other pipeline/pathway programs at UFHSC-J and the University of Florida, such as the Health Care Summer Institute or the Student Science Training Program.

The first year of the Doctors and Clinicians of Tomorrow program would be a monthly program starting mid-fall 2022 and ending in April 2023. The sessions will be held on days that students have early dismissal to avoid disrupting students' academic progress. During these monthly sessions, students would have a short, interactive didactic lesson focused on a body system or health-related topic. Following the didactic sessions, the students would have an experiential activity such as attending a simulation lab or similar clinical training from medicine, nursing, or pharmacy. The curriculum would be modeled after evidence-based curricula such as the University of Michigan's DoT program. Also, we will create or adapt lessons based on the needs of the students. For example, new sessions will be designed around how COVID affects different body systems and how vaccines work. A draft plan for a session is seen below. A draft session list is seen in the appendix.

**Doctors and Clinicians of Tomorrow Draft Session Agenda**

|                   |                                                           |
|-------------------|-----------------------------------------------------------|
| 12:30 pm - 1 pm   | Arrival with snacks                                       |
| 1 pm - 1:15 pm    | Introduction, Goals for the day, Icebreaker               |
| 1:15 pm - 3:15 pm | Brief Lecture<br>Clinical activity<br>Leadership activity |
| 3:15 pm - 3:45 pm | Small group mentoring                                     |
| 3:45 pm - 4 pm    | Wrap –up                                                  |

Buttressing these experiences would be mentoring from the students, residents and professionals from various disciplines within the health sciences in Jacksonville. It's a common colloquialism that you must see it to be it. Unfortunately, many students from minoritized backgrounds have not seen a health professional from a similar gender/race and ethnicity. This lack of

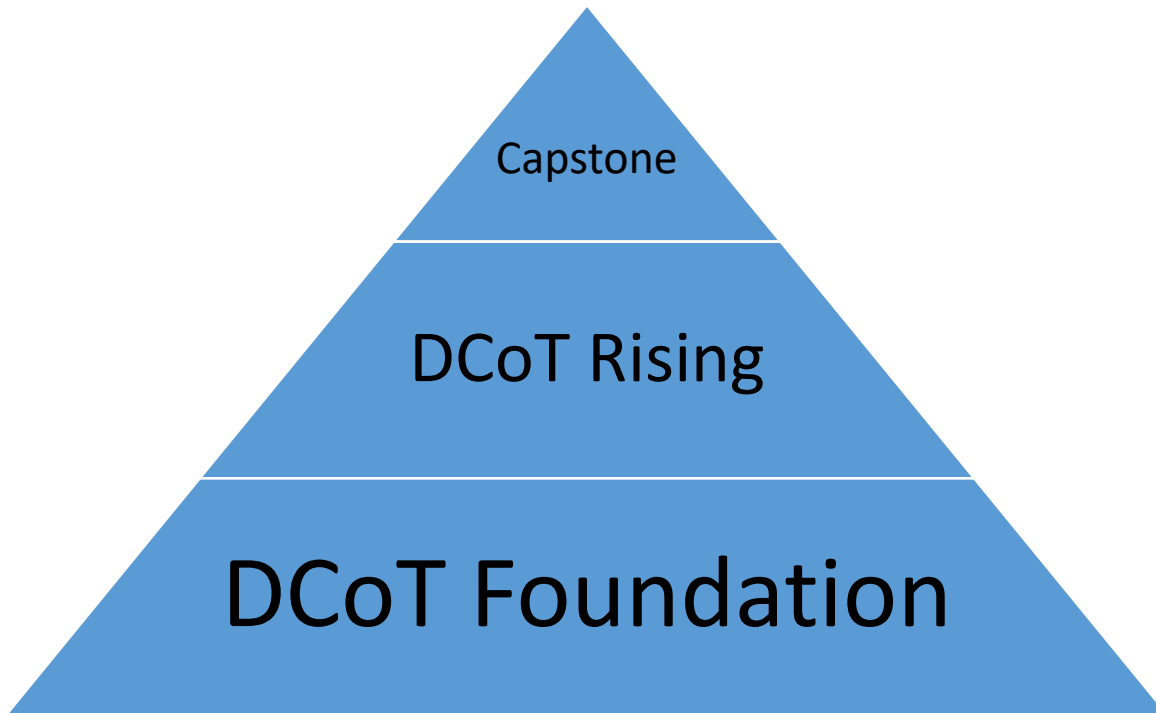
representation leads to many students thinking that becoming a doctor or clinician is not a realistic goal or path. The diverse mentors in the programs would serve as evidence that a career as a doctor or a clinician is also available to the participants of the DCoT program. Also, many minoritized students lack access to mentors that can help them navigate the complex path to professional schools. Successful admission to professional school requires years of preparation, including excellent grades, meaningful extracurricular experiences, competitive test scores, and research. The mentors will hope to guide the students in managing these various steps on the path to becoming a doctor. The mentoring session will occur in small groups at the end of the sessions. These formal mentoring sessions will be semi-structured initially but eventually will be based on the participant's needs and desires. The participants will also have the opportunity to interact with clinicians throughout the day to add various perspectives to a career in health care.

### **Additional Program Components**

The following year we will plan to include an additional 10-20 9th graders in the program. The program's second year will expand on the knowledge gained from the first and focus more on the clinical presentations that a physician, nurse, or pharmacist may encounter during their work. For example, drawing on the knowledge of cardiology, the participants will now have sessions focused on how a physician, nurse, or pharmacist would care for a patient with a heart attack. A sample activity template is located in the Appendix.

In the 11th and 12th grades, participants would enter into the second phase of the program called DCoT Rising. This phase will expose students to careers outside of the hospital such as those in community and public health. During this phase, students will gain a deeper understanding of the drivers of health such as access to healthy food. The didactic lessons and experiential activities will be based on these themes. For example, the students will learn how lack of access to healthy foods increase a person's risk for chronic disease. The students will also be able to hear how community partnerships can help address these drivers of health. This phase will also increase the focus of the mechanics of entering and succeeding in college such application prep, study skills, and financial aid. During this phase, we also plan to collaborate with the other pipeline programs at UF Health.

The students also will improve their leadership by completing a capstone project. As a collective, the students will complete a project based on a community health topic. Mentors will guide the student through selecting, implementing, and presenting the results of the project. The Center for Health Equity and Engagement Research will also provide technical support for the capstone projects.



**Doctors and Clinicians of Tomorrow Program Components**

**Program evaluation**

The program evaluation will be completed on an annual basis. The evaluation will be guided by program objectives. The program will be assessed by participants' satisfaction with the program as determined by survey data and focus group results. Session attendance will also be tracked. The demographics of the participants will also be tracked. The program staff will also receive additional input about evaluation from the Center for Health Equity and Engagement Research.

Short Term Outcomes of the program include but are not limited to pre- and post- changes in:

- Knowledge about medical careers and collegiate opportunities
- Knowledge about pursuing a medical profession and ways to become competitive
- Attitudes towards self-awareness and confidence to pursue a career in the medical professions

Long Term Outcomes Program evaluation include but are not limited to:

- # of students who intend to pursue medical careers
- # of students who enroll in a 2-year college immediately following HS graduation
- # of students who enroll in a 4-year college immediately following HS graduation
- # of students applying to medical school (very long term)

Program evaluation includes but is not limited to:

- # of schools participating with this program
- # of applicants to the program
- # of students who enroll in the program
- # of students who complete the program
- # of faculty who participate in the program by providing at least one lecture/interactive session

References:

1. <http://www.floridahealth.gov/provider-and-partner-resources/community-health-workers/physician-workforce-development-and-recruitment/2021DOHPhysicianWorkforceAnnualReport-FINALREPORT-10-25-2021.pdf>
2. <https://www.aamc.org/data-reports/workforce/report/diversity-medicine-facts-and-figures-2019>

**Appendix**

**Foundations (Proposed start date Fall 2022)**

**Who:** 9th-grade students from Paxon and Stanton (total group 15-20) or other schools such as Darnell Cookman

**What:** Seminars from physicians about the different organ systems/aspects of medicine

**When:** 1 hour (virtual) or 3 hours (in person) monthly

**Why:** To expose students to different specialties within the field of medicine and encourage curiosity at an early age

| Foundations Meeting Dates | Potential Topic      |
|---------------------------|----------------------|
| Sept/Oct                  | Introduction to DCoT |
| November                  | Cardiology           |
| December                  | Pulmonology          |
| January                   | Path to Pharmacy     |
| February                  | Dermatology          |
| March                     | Nursing              |
| April                     | Musculoskeletal      |

**Rising (2<sup>nd</sup> phase of program to be started in Fall 2024)**

**Who:** Students from the Foundations program

**What:** Seminars on college application/prep, healthcare professions, Diversity in Medicine, College Essay Editing program, Physician Coffee Talks, etc.

**When:** 1 hour monthly. Starting in 2021, Physician Coffee Talks will be held as the second event per month!

**Where:** All sessions are held virtually on Zoom!

**Why:** Provide continued exposure to the medical field and supplement the high school curriculum in efforts to prepare students for applying, selecting, and beginning college!

### **Capstone**

All Rising Students will also complete a capstone project focused on community health and health equity.



## Sample Clinical Activities

*Adapted from the University of Michigan's DoT Toolkit*

### **Chief Concern: Abdominal Pain (75 min)**

**BIG IDEA:** For the students to experience what it is like being a doctor and diagnosing a patient's chief concern

**OBJECTIVES:** Have the students experience...

- interviewing a patient
- coming up with a differential diagnosis
- giving an oral presentation
- researching signs/symptoms for their diagnoses
- ordering necessary diagnostic tests/read them
- narrowing down the differential

**MATERIALS:** 1) Gown 2) Twelve clipboards 3) Paper/pens 4) Two laptops 5) HDMI cable

**COPIES:** Resources for social media/media literacy, Lesson plans for instructors

#### **How to set up the room:**

- The students should sit around a U-shaped table
- The patient should sit in the middle on an "examination table"

#### **LESSON AGENDA:**

##### **Intro (5-10m):**

Gauge/identify how many and which students know what a doctor does. Ask the following:

1. Can someone describe what they think a doctor does at work?
2. How many of you have been to the doctor/hospital/dentist for some reason before?
3. Has anyone ever been to an ER?
4. How many of you have seen Grey's Anatomy, Scrubs, Bones etc.?

##### **Activity 1: Interview the Patient (15min)**

Role-playing a chief concern of abdominal pain (one of the medical students or residents-volunteers will wear the gown and be the patient)

Present the Chief Complaint (CC) and Vitals PPT slide on the TV

The 9th graders will take turns asking the "patient" questions related to their CC

- 1 question/student, and keep going in circles
- The other medical student or resident volunteer (they are the "attending doctor") should guide/assist the students towards the right questions

- Encourage the students to take notes during this interview
- Questions to consider during the interview:
  - Onset, Provoking, Region/Radiation, Severity, Time, Patient's Ideas, Concerns, Expectations, Past medical history, Past surgical history, Allergies, Medications, Family Hx, Social Hx?
  - Does it hurt if you try to urinate? What color is your urine?
  - Does it hurt after a meal?
  - Did you eat anything stale lately? Left any food outside? Tried any new foods?
  - Did you travel recently?
  - Does the pain come and go, or is it constant?
  - Have you had any trouble with your bowel movements recently?
  - When was your last period? Do you get cramps with your period?

Have some volunteer students or residents come up and do an abdominal exam on the patient

- Have the students palpate the abdomen to assess for tenderness or stiffness
- medical student or resident should scream in pain when the student palpates the RLQ

Patient's Story:

- Refer to the patient's HPI answer key
- Use common sense as to what the 9th graders will/will not understand

### **Activity 2: Oral Presentation (10min)**

- One student will give an oral presentation to the "attending" medical student or resident instructor

### **Activity 3: Differential Diagnosis (10min)**

- Medical student or resident volunteers write a differential on the board
- Encourage the students to offer the differential, but medical students or residents should guide and narrow down towards this final differential:
  - »» Food Poisoning
  - »» Appendicitis
  - »» Constipation
  - »» Menstruation Cramps (or stomach flu if you want the patient to be a boy)
- If students are quiet or lost, medical students or residents can simply provide this differential
- Give a brief description of each disease (encourage that they take notes)

### **Activity 4: Researching the Diagnoses (20min)**

- Break students up 2 groups of 6 each
- One medical student or resident per group
- Each group should look up the signs/symptoms of 2 of the diseases
- Encourage that they also see what tests to get for each of the 4 diseases and look up what the results may be
- Have each group share their findings with the other group
- Have the students discuss, debate, vote, and rank the differential #1-4

### **Activity 5: Ordering/Reading Diagnostic Tests (15min)**

- Medical students or residents should say that the following tests were done and share the results (this will be a PPT slide)

- WBC count
- Pregnancy test
- X-Ray
- CT Scan
- Medical students or residents should teach the students how to read the CT scan

**Activity 6: Final Diagnosis (15min)**

- Have the students discuss, debate, and vote on the final diagnosis
- Reveal the diagnosis
- Ask students what needs to be done next?
- SURGERY