**ACCESS STEM**

**2019-2020 Project Based Learning**

**Unit Overview**

**Title of PBL Unit: The Cost of Poor Health**

Target Grade Level(s): 7-12

Subject(s): Nutrition and Wellness, Health Sciences, Math, ELA

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**Problem Statement :**

How can we increase the knowledge of- and access to- health services for at risk groups when they need healthcare so that we can prevent or reduce emergency room visits?

**Case Study description:**

Sarah, age 20, has been living on the streets of Lynnwood for 6 months, because she lost her job, her apartment, and her health insurance. She can get a bed in a shelter a few days each week, but sleeps in the park under a tarp the rest of the time. She can only wash herself and her clothes once a week at most, her shoes have holes, and often she ends her day hungry and cold. When Sarah gets so sick she cannot take care of herself anymore, the only place she can go is the Emergency Department at Swedish Hospital in Edmonds.

The social work team at Swedish Hospital have seen Sarah several times this year already and recognize that there are things in her life that prevent her from getting and staying healthy. They acknowledge that there are many social determinants of health outside of their control. The healthcare system is working with the City of Lynnwood to help address the underlying problem of recurring emergency room visits and unnecessary hospital stays. The City of Lynnwood has limited resources, but has made available $50,000 to address the issues causing Sarah’s problems.

You are part of a group of non-profit organizations that address different areas of public health. Lynnwood has asked your group to develop a proposal how you will solve some of the problems they identified as health issues for Sarah and people like her, whether homeless or not.

The city, with the help of the healthcare community, will award the $250,000 to the winning proposal that shows the most cost effective and efficient plan to address health care services for at risk groups.

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| **Unit Overview and Concepts:**  (10+ days) for 60 minute class periods | |
| **Pre-Lesson 1- (optional)** | * Group norms * Discussion routines * Group roles |
| **Lesson 1- (1 day/60 mins)** | Define the areas of health   * Determinants of Equity * Social determinants of health   + Food and Nutrition   + Economic Stability   + Education   + Health and Health Care   + Neighborhood and Built Environment   + Social and Community Context * Areas of Wellness |
| **Lesson 2- ( 2 days/120 minutes)** | Pick one social determinant for your group.   * What do people need to be healthy in this area? * Identify the cost and/or impact on your life of not being healthy in this area? * If you’re unhealthy what are the resources available or needed to improve health in this area? |
| **Lesson 3- (1 day/60 minutes)** | Introduce the Case Study: ‘Sarah’.   * Analyze Sarah’s issues based on social determinants of health * Make connections to your own life |
| **Lesson 4- (2 days/120 minutes+)** | Brainstorm in your group   * Resources and/or health services needed to address Sarah’s health care * A solution to build these resources or give better access to health services in your community * Identify the jobs that work on these issues |
| **Lesson 5- (4 days/ 240 minutes)**  3 workdays & 1 presentation day | Write a proposal to address Lynnwood’s health care issue which demonstrates knowledge of social determinants and health literacy.   * Develop a budget to support your proposal. * Create/ prepare business a presentation for your proposal. |
| **Optional Lesson 6 (or include in Lesson 5)** | Write a reflection on experience of PBL, insights gained, and how to share your insights with others. |

**Extension ideas:**

* Contact your local elected official informing them of current health issues and needs in your community
* Develop a career pathway for professionals in this area of health
  + Where do they work
  + What is the entry qualification
  + Pay
  + Can you work your way up?
* Set up a field trip to local healthcare industries to showcase career pathways.
* Find a professional to invite to give you information and help you with your presentation to the class

**Learning Standards addressed in the Lessons:**

1. **Family and Consumer Sciences**
2. **ELA Literacy (CCSS)**
3. **ELPs**
4. **Math (SMP)**
5. **21st Century Leadership Skills Standards**

**Family and Consumer Sciences National Standards**

1.2.7Analyze factors that contribute to maintaining safe and healthy school, work and community environments.

1.3.4 Analyze community resources and systems of formal and informal support available to individuals and families.

9.3.1 Analyze nutrient requirements across the life span addressing the diversity of people, culture and religions

9.4.4 Construct a modified diet based on nutritional needs and health conditions.

9.4.5 Design instruction on nutrition to promote wellness and disease prevention

**ELA Literacy Standards (CCSS)**

Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

ELP standards (English Language Proficiency for ELs)

ELP Standard 1:…construct meaning from oral presentations and literary and informational text through grade-appropriate listening, reading, and viewing…

ELP Standard 2:…participate in grade-appropriate oral and written exchanges of information, ideas, and analyses, responding to peer, audience, or reader comments and questions…

ELP Standard 5:…conduct research and evaluate and communicate findings to answer questions or solve problems…

ELP Standard 7:…adapt language choices to purpose, task, and audience when speaking and writing.

SMP-Standards of Mathematical Practices

* Make sense of problems and persevere in solving them.
* Reason abstractly and quantitatively.
* Construct viable arguments and critique the reasoning of others.

**21st Century Leadership Skills:**

1.C.1 Act on creative ideas to make a tangible and useful contribution to the field in which the innovation will occur

2.D.1 Solve different kinds of non-familiar problems in both conventional and innovative ways

3.B.1 Demonstrate ability to work effectively and respectfully with diverse teams

1.B.1 Develop, implement and communicate new ideas to others effectively

2.D.2 Identify and ask significant questions that clarify various points of view and lead to better solutions

3.B.3 Assume shared responsibility for collaborative work, and value the individual contributions made by each team member.

1.A.1 Use a wide range of idea creation techniques such as brainstorming

2.C.4 Interpret information and draw conclusions based on the best analysis

6.A.1 Use technology as a tool to research, organize, evaluate and communicate information

**Soft Skills:**

Students will have to work collaboratively in groups to develop a proposal for solving this problem. Working collaboratively students will have to practice communication with their group, critical thinking in evaluating sources, and creativity in crafting a solution to address the problem of this PBL.

**Locally and/or Personally Relevant for Students:**

Students will build on their understanding of health as they examine more closely their own personal health, community health and overall impacts of health. Each student is impacted by their own personal health, the health of their loved ones and their access to a healthy living environment and healthcare. Increasing students' knowledge of how to access healthcare in their community when needed and how to take care of one's health are important life skills.

To make a strong connection to women or underrepresented minorities in STEM fields,teachers are encouraged to reach out to women leaders in the industry and can include their stories via in-person guest speakers, video interviews or other ways to make these connections more personal for students.

**Connections to career and educational pathways:**

Throughout the PBL students are encouraged to analyze available community healthcare resources to see how to meet the needs of their community. Through this process students are asked to identify job occupations within the healthcare pathway. Additionally, teachers are encouraged to reach out to industry partners in the healthcare field to collaborate on the final proposal. Teachers can also coordinate field trips or guest speakers from the healthcare industry highlighting jobs such as CNA, tech, BioMed, data analytics, public health, etc.