Team-Based Learning (TBL) in the Denver Health Longitudinal Integrated Clerkship (DH-LIC)

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Learning Objectives

• Describe key features and benefits of team-based learning
• Outline the current TBL activities in the Denver Health LIC
• Demonstrate how TBL can be adapted to LICs to integrate multiple disciplines, care locations, teamwork, and promote longitudinal learning
What is Team-Based Learning?

• An approach to a flipped-classroom

• Key components:
  – Independent pre-work
  – Case-based team application exercises
  – Moderated by faculty/expert facilitator
What is a TBL module?

Pre-work:
- Students complete assigned reading
- 1-2 hours of preparation time

Readiness assurance process:
- Individual test (iRAT)
- Team test (tRAT)
- Discussion with expert
- 30 minutes

Application exercise:
- Teams work through cases and tasks simultaneously with report out & moderator-led group discussion
- 1-2 hours
Why is it popular?

• Allows students to move beyond acquiring facts, and towards application and synthesis of course information
• Learners engage with both content and peers to reach a higher level of understanding
• Students acquire leadership, communication, emotional intelligence and teamwork skills

TBL in an LIC

• Provides unique opportunities:
  – Develop inter-disciplinary sessions
  – Focus on longitudinal aspects of cases & transitions between care venues
  – Build longitudinal teams of students
    • fosters teamwork, accountability, peer teaching, and collaboration over time
DH-LIC TBL Curriculum

• Sessions integrated into curriculum throughout the year

• Topics focus on common undifferentiated patient presentations

  – Anemia
  – Chest pain
  – Hyponatremia
  – Altered mental status
  – EKGs

  - Renal failure
  - Pneumonia
  - Trauma
  - Fever
  - Reactive airways disease
## Adapted Interdisciplinary TBLs

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<thead>
<tr>
<th>Topic</th>
<th>Disciplines</th>
<th>Care Locations</th>
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<td>Anemia</td>
<td>IM/FM</td>
<td>ICU/hospital</td>
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<td>Pediatrics</td>
<td>Clinic</td>
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<td>Reactive Airways Disease</td>
<td>IM/FM</td>
<td>Clinic Pulmonary Lab</td>
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Reactive Airways Disease TBL

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Pre-work

Students complete assigned reading

Asthma Epidemiology, Pathophysiology

Initial Evaluation

Objectives After completing this article, readers should:
1. Describe the underlying pathophysiology of asthma.
2. Discuss the role of atopy in the development of asthma.
3. Identify risk factors for death from asthma.
4. List conditions to be considered in the differential diagnosis of wheezing in children.

Introduction Asthma is a chronic airflow obstruction that affects many people of all ages.

Practical Management of Asthma

Objectives After completing this article, readers should be able to:
1. Identify the major environmental factors and comorbid conditions that affect asthma.
2. Describe the role of a written asthma action plan in the management of asthma.
3. Know how to assess asthma control and adjust therapy appropriately.
4. Discuss the evaluation and management of the child who has an acute exacerbation of asthma.

Introduction Despite advances in medical management, childhood asthma continues to be a leading cause of emergency department visits, hospitalizations, and school days missed in the United States. Children afflicted with uncontrolled asthma have difficulty exercising,
All of the following have been shown to decrease mortality when indicated in patients with COPD **EXCEPT:**

A. Noninvasive intermittent ventilation/Noninvasive positive pressure ventilation
B. Inhaled corticosteroids
C. Oxygen
D. Tobacco cessation
Suzy is a 6yo female with moderate persistent asthma, eczema and a food allergy to peanuts. Last year she was prescribed an inhaled steroid to take twice a day. She has not taken this medication for several months. For the last 2 days she has had a runny nose. Yesterday she went to the zoo and pet several animals and was sneezing all the way home. This morning dad hears her coughing and wheezing. Dad calls the Nurse Line at Denver Health for advice.

What should the RN advise dad to do next:
A. Give Suzy 2 puffs of her inhaled corticosteroid
B. Give Suzy an anti-histamine (loratidine)
C. Give Suzy 2 puffs of her short acting beta agonist (albuterol) inhaler
D. Administer her epinephrine pen she was giving after anaphylaxis for peanuts
E. Call 911 so Suzy can be taken to the nearest ER
55 yo M with chronic cough

- **Part 1:**
  - Case: H&P
  - Task: DDX/studies to order/initial management plan

- **Part 2:**
  - Case: Labs/studies
  - Task: Interpret and alter management plan

- **Part 3:**
  - Case: COPD exacerbation
  - Task: Write orders for patient

3 yo M with wheezing

- **Part 1:**
  - Case: H&P
  - Task: DDX/describe asthma to parent & assess risk factors

- **Part 2:**
  - Case: Uncontrolled asthma (+4yrs)
  - Task: Assess control/risk and demonstrate/educate on inhaler use

- **Part 3:**
  - Case: Peak flow, meds
  - Task: Fill out asthma action plan

Teams work through cases and tasks simultaneously with report out & moderator-led group discussion.
CHIEF COMPLAINT: 55 yo M 35 year

past med.
with hx of HTN, CAD status post
stent placement & NSTEMI, complaining
of 1-2 years of productive cough

DDx:
COPD/emphysema
Asthma
Heart failure
Lung cancer
GERD: "acid reflux"

Labs:
CBC w/Diff
CXR
Creatinine
Calcium
LFTs
AST
ALT
cTnI
cTnT

Diagnosis:
Chronic bronchitis with mild emphysema
Stable CHF
TBL Evaluation

• TBL has been well received on evaluations

• Students demonstrated mastery of the material
  – RATs
  – In session
  – NBME exams
Why is this a good fit for LICs?

- Students focus on the longitudinal aspects of the cases
  - Transitions of care, Care over time
  - Reinforces what is modeled in their clinical activities
- Emphasis on multi-disciplinary content
- Great way to build teamwork
- Fun and interactive for students and faculty
Added Benefits

• Flexibility in designing cases:
  – Different patient populations
  – Care settings
  – Content areas

• Tasks for students can be varied:
  – Clinical reasoning (DDX, interpret test results)
  – Communication skills/role playing
  – Admission orders
  – Treatment action plans
Acknowledgements

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• Questions?
• Other topic ideas for TBLs?