

## Intervention databases: A tool for documenting student learning and clinical value

Northeastern University  
School of Pharmacy  
Boston, MA

Margarita DiVall, PharmD, BCPS  
Associate Clinical Professor  
Debra Copeland, PharmD  
Director, Office of Experiential Education

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## APPE initiative: designing a web-based clinical intervention system (wCIS)

- Rationale
  - Documentation of services/ clinical activities
  - Documentation of competency achievement
  - Curricular assessment
- Desirable qualities
  - Student and preceptor access
  - Web-based
  - Ease of use
  - Consistency among users in documentation practices

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## Designing wCIS: process

- Department developed consensus-based intervention form
- Form was built and tested utilizing EMS software
- Simultaneously, intervention form was implemented in several didactic courses to document DTP identification and management

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## Implementation

- Spring of 2005
- Students were oriented to the wCIS
  - Students received written guidelines for documentation with definitions
  - Participation: voluntary or at discretion of the preceptor
- After the first year, feedback obtained & changes implemented
  - Form streamlined
  - Reporting feature added

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## Number of interventions documented based on required rotation sites

	First generation database (May 05-Oct 06; 11 APPE blocks)	Second generation database (Nov 06-Apr 2010)	Total N (%)
Ambulatory	1388	7201	8589(28.1)
Community	875	1750	2625 (8.6)
Institutional	4363	14976	19330 (63.3)
General Medicine	3433	9908	13340(43.7)
Specialties	930	5068	5998(19.6)
Total	6626	23927	30553

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## Results

- Common categories:
  - Patient and provider education
  - Dose adjustments
  - New drug for untreated indication
  - Drug information
- Well accepted by the team:
  - Only 4% of recommendations rejected
- > 90% have clinical significance
- Majority of interventions are initiated by the student (average preceptor involvement 20%)

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### Results: curriculum committee considerations

- Most common disease states
  - DM
  - HTN
  - Hyperlipidemia
  - Pain
  - Asthma
  - Infections
  - Osteoporosis

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### Economic impact

- Significant events prevented
  - 6976 ADRs
  - 1342 MEs
- Challenging to estimate cost savings
- No costs assigned to interventions in the database

Bates DW et al. JAMA 1997;277:307-11  
Bates DW et al. JAMA 1995;274(1): 29-34.

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### Economic impact

- Cost of preventable ADR in hospitalized population\*
  - \$4865 per ADR; with 6.5% of incidence
- Intervention database\*\*
  - 4834 potential ADRs prevented in the hospital setting
  - $4834 \times 0.065 \times \$4865 = \$1.5$  million in 1997 US\$
  - Inflation to present value = \$2 million

\*Bates DW et al. JAMA 1997;277:307-11  
\*\*Bates DW et al. JAMA 1995;274(1): 29-34.

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### Data utilization

<p><b>Faculty</b></p> <ul style="list-style-type: none"> <li>• Assessment of student-driven patient care activities</li> <li>• Merit and promotion dossiers</li> <li>• Ensure curriculum contains the most common disease states/ drugs which are being managed in the local health system</li> </ul>	<p><b>Students</b></p> <ul style="list-style-type: none"> <li>• Professional portfolio</li> <li>• Residency/ job interviews</li> </ul> <p><b>Administrators</b></p> <ul style="list-style-type: none"> <li>• ACPE accreditations</li> <li>• Justification of new sites???</li> </ul>
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### Next steps/ challenges

- Expand the demographic characteristics to capture patient case mix
- Increase documentation rates
  - Educate adjunct preceptors
  - Create form which is hand-held compatible
- Determine the economic impact of the student/faculty interventions
- Identify how to feedback data to stakeholders

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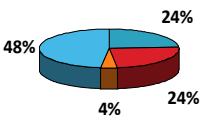
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In your opinion, the most significant benefit of this system is:

1. Curriculum assessment
2. ACPE documentation
3. New site acquisition
4. Teaching students the value of documentation



Benefit Category	Percentage
1. Curriculum assessment	48%
2. ACPE documentation	24%
3. New site acquisition	24%
4. Teaching students the value of documentation	4%

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