

## REFERENCE LIST (Updated 7.25.16)

The following reference list is provided as a resource that may be useful in developing a new program proposal. Though not a complete listing of what may be in the literature, it provides background and support for the DCLS and advanced practitioner concept.

American Physical Therapy Association. Doctor of Physical Therapy Degree. [http://www.apta.org/uploadedFiles/APTAorg/About\\_Us/Policies/Education/EducationalDegreeQualificationsPT.pdf#search=%22doctor%20of%20physical%20therapy%20degree%22](http://www.apta.org/uploadedFiles/APTAorg/About_Us/Policies/Education/EducationalDegreeQualificationsPT.pdf#search=%22doctor%20of%20physical%20therapy%20degree%22)

American Society for Clinical Laboratory Science Position Paper. Medical errors and patient safety, 2001. <http://ascls.org/position-papers/183-medical-errors-and-patient-safety>, Accessed 06/17/2016.

American Society for Clinical Laboratory Science Position Paper. Model Career Ladder, 2004. <http://ascls.org/position-papers/179-model-career-ladder>, Accessed 06/17/2016.

American Society for Clinical Laboratory Science Position Paper. Practice Levels and Education Needs for Clinical Laboratory Personnel, 2009. <http://ascls.org/position-papers/173-levels-of-practice>, Accessed 06/17/2016.

American Society for Clinical Laboratory Science Position Paper. Scope of Practice, 2012. <http://ascls.org/position-papers/186-scope-of-practice>, Accessed 06/17/2016.

American Speech, Language and Hearing Association. Clinical Doctoral Programs in Audiology. <http://www.asha.org/>

American Occupational Therapy Association, <http://www.aota.org/>

Association of Specialized and Professional Accreditors, Scroll down to the position paper on Professional Doctorates: <http://www.aspa-usa.org/content/position-papers>

Association of Schools of Allied Health Professions. Descriptive differentiation of clinical doctorates position statement of the Association of Schools of Allied Health Professions. Available from <http://www.paeaonline.org/index.php?ht=a/GetDocumentAction/i/68613>.

Baron JM, Dighe AS. Computerized provider order entry in the clinical laboratory. J Pathol Inform 2011;2:35.

Bates DW, Spell N, Cullen DJ, Burdick E, Laird N, Petersen LA, Small SD, Sweitzer BJ, Leape LL. The costs of adverse drug events in hospitalized patients. JAMA 1997;277: 307-311.

Beck S, Doig K. Are new CLS practitioners prepared to stay? Clin Lab Sci 2007;20(3):161-171.

Campbell B, Linzer G, Dufour DR. Lab Tests Online and consumer understand of laboratory testing. Clin Chim Acta 2014;432:162-165.

Centers for Disease Control and Prevention, Division of Laboratory Systems, Clinical Laboratory Integration in to Healthcare Collaborative (CLIHCTM). <http://www.cdc.gov/ophss/csels/dis/ebim/index.html>, Accessed 06/17/2016.

Centers for Disease Control and Prevention, Division of Laboratory Systems, Laboratory Medicine Best Practices (LMBPTM) initiative: Systematic Evidence Review and Evaluation Methods for Quality Improvement. <http://www.cdc.gov.ophss.csels/dis/ebim/index.html>, Accessed 06/17/2016.

Centers for Disease Control and Prevention, Division of Laboratory Systems. The 2007 Institute: Managing for Better Health. Executive Summary of Action Plan Priorities, 2007.

Check W. Powering down on excessive test use. CAP Today. February 2014. <http://www.captodayonline.com/powering-down-on-excessive-test-use/>

Classen DC, Pestotnik SL, Evans RS, Lloyd JF, Burke JP. Adverse drug events in hospitalized patients. Excess length of stay, extra costs, and attributable mortality. JAMA 1997;277(4):301-306.

Day RL, Goyan JE, Herfindalh ET, Sorby DL. The origins of the clinical pharmacy program at the University of California, San Francisco. Drug Intel and Clin Pharm 1991;25:308-314.

Dighe A, Soderberg B, Laposata M. Narrative interpretations for clinical laboratory evaluations: an overview. Am J Clin Pathol 2001;116:S123-128.

Doig K, Beck S. Surveys of support for the Doctorate in Clinical Laboratory Science. Clin Lab Sci 2008;21(2):92.

Druss BG, Marcus SC, Olfson M, Tanielian T, Pincus HA. Trends in care by nonphysician clinicians in the United States. N Engl J Med 2003;348(2):130-137.

ECRI Institute PSO Deep Dive January 2014: ECRI Institute PSO Deep DiveTM on Laboratory-related Safety Events. <https://eshop.ecri.org/p-171-pso-deep-dive-laboratory-related-safety-events.aspx>

Forsman RW. Why is the laboratory an afterthought for managed care organization? Clin Chem 1996;42:813-816.

Fowler D, Martin T, Spence L. The Clinical Laboratory Practitioner. Clin Lab Sci 2005;18(4): 199-202.

Frohman E. Clinical Doctorate in Laboratory Science. Clin Lab Sci 2005;18(4):198.

Fydryszewski, NA. "DCLS - It Is A Reality!" ASCLS Today, October, 2012.

Fydryszewski NA, Keohane EM. Cost effective implementation of a doctorate in clinical laboratory science program. Clin Lab Sci 2015;28:98-105.

Gandhi TK, Kachalia A, Thomas EJ., Puopolo AL, Yoon C, Brennan TA, Studdert DM. Missed and delayed diagnoses in the ambulatory setting: A study of closed malpractice claims. Ann Int Med 2006;145:488-496.

Giardina TD, Callen J, Georgiou A, Westbrook JI, Greisinger A, Esquivel A, Forjuoh SN, Parrish DE, Singh H. Releasing test results directly to patients: A multisite survey of physician perspectives. Patient Educ Couns 2015;98:788-796.

Grimes DA, Schulz KF. Surrogate end points in clinical research: hazardous to your health. Obstet Gynecol 2005;105:1114-1118.

Grzybicki DM, Shahangian S, Pollock AM, Raab SS. A summary of deliberations on strategic planning for continuous quality improvement in laboratory medicine. Am J Clin Pathol 2009;131:315-520.

Heyer NJ, Derzon JH, Wings L, Shaw C, Mass D, Snyder SR, Epner P, Nichols JH, Gayken JA, Ernst D, Liebow EB. Effectiveness of practices to reduce blood sample hemolysis in EDs: a laboratory medicine best practices systematic review and meta-analysis. Clin Biochem 2012;45(13-14):1012-1032.

Hickner J, Thompson PJ, Wilkinson T, Epner P, Sheehan M, Pollock AM, Lee J, Duke CC, Jackson BR, Taylor JR. Primary care physicians' challenges in ordering clinical laboratory tests and interpreting results. J Am Board Fam Med 2014;27:268-274.

Institute of Medicine. To err is human: building a safer health system. Washington, DC: National Academies Press, 2000.

Institute of Medicine. Crossing the quality chasm. Washington, DC: National Academies Press, 2001.

Institute of Medicine. Health professions education: a bridge to quality. Washington, DC: National Academies Press, 2003.

Institute of Medicine. Improving diagnosis in health care. Washington, DC: National Academies Press, 2015.

James JT. A new, evidence-based estimate of patient harms associated with hospital care. J Patient Saf 2013;9:122-128.

Jha AD, Chan DC, Ridgeway AB, Franz C, Bates DW. Improving safety and eliminating redundant tests: Cutting costs in US hospitals. Health Affairs 2009;28(5):1475-1484.

Keehan SP, Cuckler GA, Sisko AM, Madison AJ, Smith SD, Stone DA, Poisal JA, Wolfe CJ, Lizonitz JM. National Expenditure Projections, 2014-24: Spending growth faster than recent trends. *Health Affairs* 2015;34(8):1407-1417.

Konger RL, Ndekwe P, Jones G, Schmidt RP, Trey M, Baty EJ, Wilhite D, Munshi IA, Sutter BM, Rao M, Bashir CM. Reduction in unnecessary clinical laboratory testing through utilization management of a US government Veterans Affairs hospital. *Am J Clin Pathol* 2016;Mar;0:1-10. Doi: 10.1093/AJCP/AQV092

Kotzer KE, Riley JD, Conta JH, Anderson CM, Schahl KA, Goodenberger ML. Genetic testing utilization and the role of the laboratory genetic counselor. *Clin Chim Acta* 2014;427:193-195.

Kwok J, Jones B. Unnecessary repeat requesting of tests; an audit in a government hospital immunology laboratory. *J Clin Pathol* 2005;58:457-462.

Laboratory Medicine Best Practices. <https://www.futurelabmedicine.org/about/>.

Laposata M. Patient-specific narrative interpretations of complex clinical laboratory evaluations: who is competent to provide them? *Clin Chem* 2004;50:471-472.

Laposata ME, Laposata M, Van Cott EM, et al. Physician survey of a laboratory medicine interpretive service and evaluation of the influence of interpretations on laboratory test ordering. *Arch Path Lab Med* 2004;128(12):1424-1427.

Laposata M, Dighe A. “Pre-pre” and “post-post” analytical error: high-incidence patient safety hazards involving the clinical laboratory. *Clin Chem Lab Med* 2007;45(6):712–719.

Leape LL, Cullen DJ. Pharmacist participation on physician rounds and adverse drug events in the intensive care unit. *JAMA* 1999;281(3):267-270.

Leibach EK. The doctorate in Clinical Laboratory Science: The keystone practitioner for the profession. *Clin Lab Sci* 2007;20(1):4-6.

Leibach EK. The doctorate in Clinical Laboratory Science: A view of the process of integration into health care. *Clin Lab Sci* 2007;20(2), 69-71.

Leibach EK. The doctorate in Clinical Laboratory Science: A view of the strategy for continuity, growth, and realization of potential. *Clin Lab Sci* 2007;20(3):189-192.

Leibach EK. The doctorate in Clinical Laboratory Science: projection of professional outcomes. *Clin Lab Sci* 2007;20(4):197-200.

Leibach EK. The doctorate in Clinical Laboratory Science: Enhanced quality for health care. *Clin Lab Sci* 2008;21(1):5-6.

- Leibach EK. The doctorate in Clinical Laboratory Science: CLS education beyond the baccalaureate. *Clin Lab Sci* 2008;21(2):78-81.
- Leibach EK. The doctorate in Clinical Laboratory Science: The executive summary. *Clin Lab Sci* 2008;21(3):134-137.
- Leibach EK. The doctorate in clinical laboratory science: A view of clinical practice development. *Clin Lab Sci* 2008;21(4):196-198.
- Leibach EK. Evidence based practice in CLS education. *Clin Lab Sci* 2010;23(3)Suppl, 2.
- Leibach EK. Grounded theory in medical laboratory science expert practice development. *Clin Lab Sci* 2011;24(4)Suppl:37-44.
- Leibach EK. Building research through MLS curricula. *Clin Lab Sci* 2011;24(4)Suppl. 45-46.
- Leibach EK. The future of the profession. *Clin Lab Sci* 2011;24(4)Suppl. 2-3.
- Marques MB, Anastasi J, Ashwood E, Baron B, Fitzgerald R, Fung M, Krasowski M, Laposata M, Nester T, Rinder HM. The clinical pathologist as consultant. *Am J Clin Pathol* 2011;135:11-12.
- Marx W H, DeMaintenon N L, Mooney K F, Mascia M L, Medicis J, Franklin PD, Sivak E, Rotello L. Cost reduction and outcome improvement in the intensive care unit. *J Trauma* 1999 Apr;46(4):625-629.
- Mechanic D. Physician discontent. *JAMA* 2003;290:941-946.
- Melillo KD. Interpretation of laboratory values in older adults. *Nurse Pract* 1993;18(7):59-67.
- Montoya ID, Kimball OK. Marketing clinical doctorate programs. *J Allied Health* 2007;36:107-112.
- Morgan S, Pullon S, McKinlay E. Observation of interprofessional collaborative practice in primary care teams: An integrative literature review. *Int J Nur Stud* 2015;52(7):1217-1230. Doi: 10.1016/j.inurstu.2015.03.008.
- Morris S, Otto CN, Golemboski K. Improving patient safety and healthcare quality in the 21st century - competencies required of future medical laboratory science practitioners. *Clin Lab Sci* 2013;26(4):200-204.
- NAACLS News. Special Edition. 2006;92. <http://www.naacls.org/news/naacls-news/archives.asp>.
- Nadder TS. Results from an interest survey on the professional doctorate degree in CLS. *ASCLS Today* 2011;XXV(4):13-14.

Nadder T. The Development of the Doctorate in Clinical Laboratory Science in the US. The Journal of the International Federation of Clinical Chemistry and Laboratory Medicine Vol 24 No1. [http://www.ifcc.org/media/224753/07\\_Nadder.pdf](http://www.ifcc.org/media/224753/07_Nadder.pdf)

Nandiwada DR, Dang-Vu C. Transdisciplinary health care education: Training team players. Journal of Health Care for Poor and Underserved 2010;21:26-34.

Neilson EG, Johnson KB, Rosenbloom ST, Dupont WD, Talbert D, Giuse DA, Kaiser A, Miller RA. The impact of peer management on test ordering behavior. Ann Intern Med 2004;141:196-204.

Nepple KG, Joudi FN, Hillis SL, Wahls TL. Prevalence of delayed clinician response to elevated prostate-specific antigen values. Mayo Clin Proc 2008;83(4):439-448.

Nichols JH. Quality in point-of-care testing. Expert Rev Mol Diagn 2003;3(5):563-72.

Otto CN. Patient safety and the medical laboratory, an introduction. Clin Lab Sci 2011;24(2):105-107.

Otto CN. Patient safety and the medical laboratory, using the IOM aims. Clin Lab Sci 2011;24(2):108-113.

Piva E, Sciacovelli L, Zaninotto M, Laposata M, Plebani M. Evaluation of effectiveness of a computerized notification system for reporting critical values. Am J Clin Pathol 2009;131(3):432-41.

Plebani M. Errors in clinical laboratories or error in laboratory medicine? Clin Chem 2006;44:750-759.

Plebani M, Panteghini M. Promoting clinical laboratory interaction by harmonization. Clin Chim Acta 2014;432:15-21. Doi: 10.1016/j.cca.2013.09.051.

Plebani M, Sciacovelli L, Marinova M, Marcuccitti J, Chiozza ML. Quality indicators in laboratory medicine: a fundamental tool for quality and patient safety. Clin Biochem 2013;46(13-14):1170-1174. Doi: 10.1016/j.clinbiochem.2012.11.028.

Prades J, Remue E, van Hoof E, Borrás JM. Is it worth reorganizing cancer services on the basis of multidisciplinary teams (MDTs)? A systematic review of the objectives and organization of MDTs and their impact on patient outcomes. Health Policy 2015;119(4):464-474. Doi: 10.1016/j.healthpol.2014.09.006.

Price CP, St John A. Innovation in healthcare. The challenge for laboratory medicine. Clin Chim Acta 2014;427:71-78.

Rice S. Most laboratory errors happen outside the lab ESRI Report Finds. Modern Healthcare, April 17, 2014.

Riley JD, Procop GW, Kottke-Marchant K, Wyllie R, Lacobawan FL. Improving molecular genetic test utilization through order restriction, test review, and guidance. *J Mol Diagn* 2015;17(3):225-229. Doi:10.1016/j.jmoldx.2015.01.003.

Russell BL, Kraj B, Pretlow L, Ranne A, Leibach EK. (2011). Evidence-based practice and advanced competencies in a MHS-CLS program. *Clin Lab Sci* 2011;24(4)Suppl:47-53.

Schmidt KT, Chau CH, Price DK, Figg WD. Precision oncology medicine: The clinical relevance of patient specific biomarkers used to optimize cancer treatment. *J Clin Pharmacol* 2016;17 Jun 2016, doi: 10.1002/jcph.765.

Scotten M, Manos EL, Malicoat A, Paolo AM. Minding the gap: Interprofessional communication during inpatient and post discharge chasm care. *Patient Educ Couns* 2015;98:895-900.

Sephel GC, Laposata M. Transiently increased variation between a point-of-care and laboratory INR method after a long period of correlation: A case study demonstrating the need for ongoing correlation of POC with the central laboratory. *Am J Clin Pathol* 2013;140(4):475-486.

Shirts BH, Jackson BR, Baird GS, Baron JM, Clements B, Grisson R, Hauser RG, Taylor JR, Terrazas E, Brimhall B. Clinical laboratory analytics: Challenges and promise for an emerging discipline. *J Pathol Inform* 2015;6:9.

Smith ML, Raab SS, Fernald DH, James KA, Lebin JA, Grzybicki DM, Zelic C, West DR. Evaluating the connections between primary care practice and clinical laboratory testing. *Arch Pathol Lab Med* 2013;137:120-125.

Snyder CF, Wu AW, Miller RS, Jensen RE, Bantug ET, Wolff AC. The role informatics in promoting patient-centered care. *Cancer J* 2011;17:211-218.

Snyder SR, Favoretto AM, Derzon JH, Christenson RH, Kahn SE, Shaw CS, Baetz RA, Mass D, Fantz CR, Raab SS, Tanasijevic MJ, Liebow EB. Effectiveness of barcoding for reducing patient specimen and laboratory testing identification errors: A Laboratory Medicine Best Practices systematic review and meta-analysis. *Clin Biochem* 2012; 45(13-14):988-998.

Snyder SR, Favoretto AM, Baetz RA, Derzon JH, Madison BM, Mass D, Shaw CS, Layfield CD, Christenson RH, Liebow EB. Effectiveness of practices to reduce blood culture contamination: A Laboratory Medicine Best Practices systematic review and meta-analysis. *Clin Biochem* 2012;45(13-14):999-1011.

St Peter RF, Reed MC, Kemper P, Blumenthal D. Changes in the scope of care provided by primary care physicians. *N Engl J Med* 1999;341(26):1980-1985.

Taheri PA, Butz DA, Greenfield LJ. Length of stay has minimal impact on the cost of hospital admission. *J Am Coll Surg* 2000;191(2):123-130.

Tcherniantchouk O, Laposata M, Marques M. The isolated prolonged PTT. *Am J Hematol* 2013;88:82-85.

Van Cott EM. Laboratory test interpretations and algorithms in utilization management. *Clin Chim Acta* 2014;427:188-192. Doi: 10.1016/j.cca.2013.09.025.

Wagar EA, Tamashiro L, Yasin B, Hilborne L, Bruckner DA. Patient safety in the clinical laboratory: A longitudinal analysis of specimen identification errors. *Arch Pathol Lab Med* 2006;130:1662-1668.

Walz SE, Darcy TP. Patient safety & post-analytical error. *Clin Lab Med* 2013;33:183-194.

Wang TJ, Mort EA, Nordberg P, Chang Y, Cadigan ME, Mylott L, Ananian LV, Thompson, BT, Fessler M, Warren W, Wheeler A, Jordan M, Fifer MA. A utilization management intervention to reduce unnecessary testing in the coronary care unit. *Arch Intern Med* 2002;162:1885-1890.

Weir P. A family physician's perspective on laboratory testing and diagnostic errors, *Clin Lab News*, January 2013, Vol. 39, No.1.

Weydert JA, Nobbs ND, Feld R, Kemp JD. A simple, focused, computerized query to detect overutilization of laboratory tests. *Arch Pathol Lab Med* 2005;129:1141-1143.

Wiecha J, Pollard T. The interdisciplinary eHealth team: Chronic care for the future. *J Med Internet Res* 2004;6:e22. Doi:10.2196/jmir.6.3.e22.

World Health Organization. Learning together to work together for health. Report of a WHO study group on multiprofessional education for health personnel: The team approach. Technical Report Series 769:1-72. Geneva: World Health Organization, 1988.

Zhi M, Ding EL, Theisan-Toupal J, Whelan J, Arnaout R. The landscape of inappropriate laboratory testing: A 15-year meta-analysis. *PLoS ONE* 2013;8(11):e78962. Doi: 10.1371/journal.pone.0078962

### **DCLS Justification based on PharmD Studies**

Alexander MD, Rao KV, Khan TS, Deal AM. ReCAP: Pharmacists' impact in hematopoietic stem-cell transplantation: Economic and humanistic outcomes. *J Oncol Pract* 2016;12(2):147-148, e118-126. Doi: 10.1200/JOP.2015.008797.

Cobb CD. Optimizing medication use with a pharmacist-provided comprehensive medication management service for patient with psychiatric disorders. *Pharmacotherapy* 2014;34:1336-1340. Doi: 10.1002/phar.1503.



Dager WE, Branch JM, King JH, White RH, Quan RS, Musallam NA, and Albertson TE. Optimization of inpatient warfarin therapy: impact of daily consultation by a pharmacist-managed anticoagulation service. *Ann Pharmacother* 2000;34(5):567-572.

Jorgenson D, Dalton D, Farrell B, Tsuyuki RT, and Dolovich L. Guidelines for pharmacists integrating into primary care teams. *Can Pharm J* 2013;146(6):342-352.

McKay C, Wieck KL. Evaluation of a collaborative care model for hospitalized patients. *Nurs Econ* 2014;32(5):248-267.

Polgreen LA, Han J, Carter BL, Ardery GP, Coffey CS, Chrischilles EA, James PA. Cost-effectiveness of a physician-pharmacist collaboration intervention to improve blood pressure control. *Hypertension* 2015;66(6):1145-1151. Doi: 10.1161/hypertensionaha.115.06023

Saokaew S, Maphanta S, Thangsomboon P. Impact of pharmacists' interventions on cost of drug therapy in intensive care unit. *Pharm Pract (Granada)* 2009;7(2):81-87.

Tsuyuki RT, Fradette M, Johnson JA, Bungard TJ, Eurich DT, Ashton T, Gordon W, Ikuta R, Kornder J, Mackay E, Manyari D, O'Reilly K, Semchuk W. A multicenter disease management program for hospitalized patients with heart failure. *J Card Fail* 2004;10(6):473-480.

Weant KA, Armitstead JA, Ladha AM, Sasaki-Adams D, Hadar EJ, Ewend MG. Cost effectiveness of a clinical pharmacist on a neurosurgical team. *Neurosurgery* 2009;65:946-950; discussion 950-951. Doi: 10.1227/01.neu.0000347090.22818.35.