Clinical Informatics Fellowship Programs: In Search of a Viable Financial Model

An open letter to the Centers for Medicare and Medicaid Services

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Summary

In the US, the new subspecialty of Clinical Informatics focuses on systems-level improvements in care delivery through the use of health information technology (HIT), data analytics, clinical decision support, data visualization and related tools. Clinical informatics is one of the first subspecialties in medicine open to physicians trained in any primary specialty. Clinical Informatics benefits patients and payers such as Medicare and Medicaid through its potential to reduce errors, increase safety, reduce costs, and improve care coordination and efficiency.

Even though Clinical Informatics benefits patients and payers, because GME funding from the Centers for Medicare and Medicaid Services (CMS) has not grown at the same rate as training programs, the majority of the cost of training new Clinical Informaticians is currently paid by academic health science centers, which is unsustainable. To maintain the value of HIT investments by the government and health care organizations, we must train sufficient leaders in Clinical Informatics. In the best interest of patients, payers, and the US society, it is therefore critical to find viable financial models for Clinical Informatics fellowship programs. **To support the development of adequate training programs in Clinical Informatics, we request that the Centers for Medicare and Medicaid Services (CMS) issue clarifying guidance that would allow accredited ACGME institutions to bill for clinical services delivered by fellows at the fellowship program site within their primary specialty.**

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In 2011 in the US, the American Board of Medical Specialties voted to make Clinical Informatics the newest subspecialty in Medicine. In 2013 the first board examinations were administered by the American Board of Preventive Medicine with the initial class of 432 Board Certified Clinical Informaticians emerging in 2014. Clinical Informatics-trained experts will be crucial to maintain and improve the nation's health information infrastructure. Beginning in 2018, the only way to become board eligible in Clinical Informatics will be through an Accreditation Council for Graduate Medical Education (ACGME) accredited fellowship sponsored by an ACGME accredited institution [1]. Unlike all other specialties and subspecialties, Clinical Informatics is the first subspecialty in medicine lacking billing codes and a revenue stream directly related to billing for patient services.

US teaching hospitals participating in the Medicare program are eligible for Medicare direct Graduate Medical Education (DGME) payments and indirect medical education payments [2–3]. The amount of DGME funds a hospital receives is based on the number of 'residents', the hospital's updated per resident amount, which is derived by dividing all costs that can be allocated to DGME by the number of 'residents', and the ratio of Medicare inpatient days to all inpatient days. (Note that, under CMS rules, interns, residents and fellows are collectively referred to as "residents." Herein we will use the CMS-designated term when speaking of all these trainees and refer to "informatics fellows" when calling out this specific group that is impacted by the current reimbursement rules.) Each accredited institution also negotiates the actual numbers per 'resident' with CMS on a regular basis. In return for funding 'resident' education and to avoid duplicate CMS payments, none of the patient care provided by 'residents' may be billed to CMS. Further, billing guidelines and modifiers for teaching physicians are strictly defined by Medicare. This affects how the teaching attendings document and bill clinical work done with 'resident' trainees.

Costs to hospitals for 'resident' education exceed what is reimbursed by CMS. Training 'residents' thus comes at a cost to teaching organizations. However, one of the benefits of having trainees in a teaching hospital is the fact that trainees allow teaching physicians to focus on the critical portions of care delivery with 'residents' extending the attendings' ability to reach more patients and increase billable services. This benefit covers some of the cost of education and makes the training of 'residents' a viable proposition to hospitals, which will then be willing to carry additional costs not covered by DGME payments such as GME staff salaries, research activities required by 'residents', didactic learning sessions, 'resident' stipends and fringe benefits, faculty salaries and fringe benefits and allocated institutional overhead costs such as maintenance and electricity [4]. While 'residents' increase the volume of care delivery that can be provided by any institution, the emphasis of graduate medical education is on learning, as opposed to patient care service.

Clinical Informaticians focus on, among other things, systems-level improvements in care delivery through the use of data analytics, clinical decision support, data visualization, and the like. Their work benefits patients and payers like Medicare and Medicaid through reduction of errors, increased safety, reduced costs, more efficient care, and improved care coordination [5-7]. In contrast to other physicians, who typically focus on the individual patient, essentially all of the work of the clinical informatician is at a practice or population level, impacting the care of multiple patients through their efforts. Recognition that health care technology mainly benefits patients and payers led to the HITECH Act that incentivized the implementation of clinical information technology like electronic health records and health information exchange for hospitals and providers [8]. As CMS moves toward value-based payment models, leadership by Clinical Informaticians and the ability to manage data and information will become critical to the safe, effective, and efficient delivery of care to patients [9].

Training future Clinical Informatics leaders will be critical to recoup on the investment in health information technology (HIT). However, teaching hospitals will incur significant costs by offering training programs in Clinical Informatics, with costs per fellow estimated upward of $100,000 per year. With CMS imposing a limit on the number of residents it supports [4] and Clinical Informaticians unable to bill for patient services, having an informatics fellow as an extender does not make economic sense. This fact is supported by financing models for the first informatics programs, which include funding fellows through charitable donations and other short-term funds – an obviously unsustainable model.

Clinical Informatics fellows may hail from any primary specialty. The ACGME Program Requirements for Clinical Informatics states that, "During the educational program, fellows should main-

tain their primary specialty certification" [10]. In order to maintain that certification, fellows will need to practice medicine in their primary specialty. Clinical informatics fellowship training is not directly related to their patient care practice, and therefore the two may be considered to be independent activities. In addition, a clinical informatics fellowship program director and faculty may not even practice in the same specialty of medicine as the fellows and may not be qualified or required to monitor the clinical activities of their fellows. Thus, it is obvious that any practice of medicine performed by a Clinical Informatics fellow is not part of their fellowship training, and their true level of medical care is at the level of an attending rather than that of a 'resident'. However, their role as informatics fellows ('residents') makes it too risky for most teaching hospitals to bill for these patient care services out of fear of "claw back" lawsuits by CMS – even though most informatics fellows will become board certified in their primary specialty before or during their fellowship training. Allowing the fellows to bill for their clinical activities at the appropriate level of care – an attending physician – will help financially support their training in Clinical Informatics and provide a stable revenue source for Clinical Informatics Fellowship Programs.

The US must assure that sufficient leaders in Clinical Informatics are trained to keep its $24 Billion investment in HIT running. Therefore, it is critical to find viable financial models for Clinical Informatics programs. As a short term solution **to support the development of adequate training programs in Clinical Informatics, we request that the Centers for Medicare and Medicaid Services (CMS) issue clarifying guidance that would allow accredited ACGME institutions to bill for clinical services delivered by fellows at their fellowship program site within their primary specialty**. Such guidance would ultimately benefit patients, payers, and the US society. Unless CMS acts now, we will create an untenable situation wherein we implement new HIT solutions and will have no experts to optimize, maintain, and improve these clinical systems.

Addendum

The AMIA Board of Directors agrees that finding a viable financial model to support Clinical Informatics Programs is essential. The Board supports recommendations that accredited ACGME institutions bill for clinical services delivered by fellows at their fellowship program site within their primary specialty.

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