

## Integrating an Acupuncture Service at an Ivy League University Student Health Service

Richard O'Keefe, MD, MA, FAAFP,<sup>1</sup> Kimberlie Wilson, LAc,<sup>2</sup>  
Belinda Anderson, PhD, LAc,<sup>2</sup> Samuel Seward, MD, FAAP,<sup>1</sup> Amy Versnik Nowak, PhD,<sup>3</sup>  
Brenda Aiken, MD,<sup>1</sup> Joe DeGise, MS,<sup>1</sup> and Amanda Daugherty, MPH, CHES<sup>1</sup>

### ABSTRACT

**Background:** Acupuncture is a commonly utilized complementary and alternative modality in the United States. Acupuncture is well-positioned to be integrated as a therapy in allopathic settings because there is strong evidence for its efficacy for addressing several conditions. College health populations use acupuncture more than other populations; therefore, college health centers are ideal locations to add acupuncture services

**Methods:** The Integrative Medicine Working Group at Columbia University, New York, NY, added an acupuncture session for students on the university's Morningside Campus by aligning with the priorities of Columbia Health Services, including key stakeholders in planning, and developing a collaboration with the Pacific College of Oriental Medicine.

**Results:** The new acupuncture session has been highly utilized with a low no-show rate and high patient-satisfaction scores.

**Conclusions:** Program evaluation and collaboration between key stakeholders can guide the creation of a successful acupuncture service. The addition of an acupuncture service in a college health setting was well-received by students and could be replicated in other college health centers.

**Key Words:** Acupuncture, School-Based Health, College Health

### INTRODUCTION

NEARLY 40% OF AMERICAN ADULTS have used one or more therapies that can be described as complementary and alternative medicine (CAM).<sup>1</sup> An increase in CAM use has driven the emergence of an integrative health care approach that blends Western allopathic medicine with complementary and alternative medicine (CAM) treatments to provide a more comprehensive whole-person approach for patients. Acupuncture is one of the more commonly used CAM therapies. The 2012 National Health Interview Study showed that acupuncture use is increasing in the United

States.<sup>2</sup> Acupuncture has been shown to be effective for addressing a variety of conditions, including pain management and headaches.<sup>3-7</sup>

Research has consistently shown a positive relationship between education level and CAM use and has demonstrated that CAM use among college students is higher than in the general population.<sup>8</sup> Acupuncture was one of the CAM modalities found to be more frequently used among undergraduate college students, compared to U.S. adults.<sup>8</sup> In addition, Nichols and Harrigan found that 12% of athletes surveyed at the University of Hawaii had used acupuncture in the last 12 months. The most common conditions for

---

<sup>1</sup>Columbia Health, Columbia University, New York, NY.

<sup>2</sup>Pacific College of Oriental Medicine-NY, New York, NY.

<sup>3</sup>Department of Applied Human Sciences, University of Minnesota Duluth, Duluth, MN.

which those patients sought care included headache, back problems, pain, and other musculoskeletal complaints.<sup>9</sup>

Columbia University (CU, New York, NY) Health Services provides primary care services for ~28,000 students (80% graduate and 20% undergraduate students) on the university's Morningside campus. Health Services has six divisions: (1) Medical Services; (2) Counseling and Psychology Services; (3) ALICE: Health Promotion; (4) Disability Services; (5) Immunization and Insurance; and (6) Sexual Violence Response Program. Medical Services manages ~110,000 encounters annually (via in-person appointments and online communications) using a student-centered medical-home model.

The student health-insurance plans offered at CU cover acupuncture provided by a limited number of physicians (MD, DO, or DC) within the scope of their licenses for only certain conditions (e.g., chronic low-back pain, migraine, pregnancy-related nausea, postoperative- and chemotherapy-induced nausea, temporomandibular disorders, and postoperative dental pain).<sup>10</sup> Copays vary from \$20 to \$40, depending on the level of the patient's insurance plan.<sup>11</sup> Treatment notes are required for medical-necessity review after 15 visits (J. Hughes, personal communication, August 2015).

In 2005, Medical Services created an interdisciplinary Integrative Medicine (IM) Working Group, which included an acupuncturist, as a response to reported staff and student interest in CAM treatment modalities. This Working Group created referral networks for acupuncture as well as for other CAM modalities and organized training for staff members in CAM modalities. In 2008, Medical Services offered ear acupuncture during spring finals week to students and staff members for stress reduction.

In 2009 the IM Working Group's initial proposal to add a weekly acupuncture session in Medical Services was unsuccessful for the following reasons:

- Perceived lack of student interest
- Questionable utility of acupuncture in a college health setting
- Concerns about space
- Concerns about cost
- Question about how this service would support the student-centered medical home
- Curiosity about availability of acupuncture at peer universities.

## MATERIALS AND METHODS

To move forward toward integrating acupuncture into CU's Medical Services, the IM Working Group built a new proposal by addressing the concerns expressed in 2009.

### Student Interest

The current authors wanted to demonstrate that Columbia students utilize CAM modalities, including acupuncture, so

an institutional review board–approved study of CU students was designed and implemented between 2010 and 2012. In the Fall of 2012, a stratified random sample of 6484 undergraduate, graduate, and preprofessional health-care students were selected from a population of ~28,000 students enrolled at CU. Participants were solicited via a series of five e-mails over a 27-day period. With 2553 completed surveys (a response rate of 39.4%), there was an average of 8% of CU students who reported using acupuncture within the last 12 months. Reported acupuncture use varied slightly by student academic level with undergraduates averaging 7.1% and graduate students 8.3%; the preprofessional sub-group was the highest at 9.1%. Respondents were 83% graduate students (17% of these were preprofessional) and 17% undergraduate students.<sup>12</sup> Across all samples, the patients most likely to report using these modalities were women and students with family members who had used a CAM modality.

The average of 8% acupuncture utilization was higher than in other studies (see Table 1) and it was estimated that this could translate into ~2000 unique visits for acupuncture yearly to Medical Services.

### Utility

Good evidence exists for the utility of acupuncture for patients with pain, fibromyalgia, nausea after surgery (adults), chronic back pain, and headaches.<sup>3–7</sup>

Acupuncture is safe. Adverse effects are rare, with syncope being the condition most commonly needing an immediate medical response.<sup>13,14</sup>

In an analysis of malpractice claims from the National Practitioner Database, 93% were against medical doctors (MDs and DOs) and <0.7% against alternative healthcare providers, of which acupuncture is only one modality (C. Mummery, personal communication, August 2015). This data supported our assertion that the provision of alternative modalities (e.g., acupuncture) has a lower risk for adverse outcomes.

### Cost

In 2007, the Dean of the Pacific College of Oriental Medicine (PCOM) approached the IM Working Group about creating an acupuncture service at Columbia Health Services. That opportunity stimulated the current authors' first proposal to add an acupuncture session. In 2012, with early results from the current authors' study, PCOM was approached again to determine if that institution still had interest in developing a service at CU. PCOM is the largest Chinese medical college in the United States with three campuses: (1) New York City; (2) San Diego; and (3) Chicago. PCOM offers low-cost clinics in each city, with off-site rotations for senior interns supervised by faculty members.<sup>15</sup> The New York City clinic is the largest Chinese medicine clinic on the East Coast treating more than 23,000

TABLE 1. ACUPUNCTURE USE

<i>Factor</i>	<i>NCCIH<sup>2</sup> (2014)</i>	<i>Nowak &amp; Hale<sup>8</sup> (2012 review)</i>	<i>Versnik-Nowak et al.<sup>12</sup> (2015)</i>
Acupuncture use in last year	1.5% of U.S. population	3.7% of college students	8% of students

NCCIH, National Center for Complementary and Integrative Health.

patients annually (K. Douglas, personal communication, July 2015). The proposed service was an off-site rotation for PCOM, with no associated cost to CU other than those related to the provision of clinical space.

### Space

Medical Services uses 22 examination rooms with clinicians seeing patients in staggered schedules from 8 AM to 7 PM. The plan proposed was to have the acupuncture session during times of lower room utilization in mornings. This time was to coincide with off-site hours for PCOM.

### Student-Centered Medical-Home Model

The student-centered medical-home model is an adaption of the patient-centered medical-home model for university settings. The medical-home model is a team-based health-care delivery model that provides comprehensive and continuous medical care to patients, with the goal of optimizing health outcomes. Key elements of the model include a personal clinician and whole-person orientation.<sup>16</sup> All referrals to the acupuncture service were to be through the primary-care clinician and keep each student patient in-house (“at home”). Patient-care coordination and continuity would be improved, because acupuncture care would be documented in the same health record as all other healthcare and an on-site acupuncturist allowed easy access for face-to-face consultations between acupuncturists and primary-care clinicians. PCOM used a paper record, which was subsequently scanned into patient charts. All PCOM acupuncturists were formally credentialed, as was every licensed clinician or student working in Columbia Health Services, with clinical privileges limited to acupuncture.

### Peer Schools

Many Ivy League schools (Table 2) either offer acupuncture on-site by a licensed acupuncturist or through their insurance plans, including the CU Medical Center student health service.<sup>17–21</sup>

In 2012, the IM Working Group scheduled presentations by the dean of PCOM about the utility and safety of acupuncture to Medical Services clinicians and the leadership of Columbia Health Services. These presentations included the current authors’ preliminary data showing reported use of acupuncture by 8% of students in the last 12 months. Later that year, a reformulated proposal was submitted, which addressed the previous areas of concern (Table 3). The current authors’

new proposal was presented to various levels of decision-makers to create a broad base of support, and this new proposal was accepted.

In the Fall of 2013, the CU acupuncture service started in collaboration with the PCOM. Acupuncturists see students 1 morning per week from 8:30 AM to 12:30 PM, for a total of 16 patients weekly. Each student is allowed a maximum of five acupuncture sessions per academic year. Acupuncture appointments are for 1 hour, and students can make appointments with the same acupuncturist for follow-up as needed. Full-spectrum acupuncture, except moxibustion, is offered. If a student needs or desires additional acupuncture, that student is referred to the low-cost clinic on the PCOM campus.

## RESULTS

### Metrics

From September 2013 to May 2015, the CU service had a total of 544 referrals from clinicians, and the service consistently had a waiting list of >30 students. There was a total of 692 visits with a no-show rate of 5%. The most-common diagnoses for student referral were: back pain; neck pain; muscle spasm; headache; fatigue; shoulder pain; knee pain; dysmenorrhea; and temporomandibular joint syndrome. PCOM reported the top diagnosis as stress.

TABLE 2. ACUPUNCTURE AVAILABILITY AT PEER SCHOOLS

<i>Services</i>	<i>Student insurance covers</i>	<i>On-site acupuncturist</i>
Columbia Medical Center Student Health Service <sup>21</sup>	Yes	Yes (by appointment with fee)
Cornell Student Office of Student Health Benefits, Student Plans <sup>17</sup>	Yes	No
Harvard University, Center for Wellness <sup>20</sup>	No	Yes (by appointment with fee)
Princeton University, University Health Services, Student Health Plan <sup>18</sup>	Yes	No
Student Health Service, University of Pennsylvania <sup>19</sup>	Yes	Yes, by appointment with copay

TABLE 3. SUMMARY OF ADDRESSED CONCERNS

<i>Concern</i>	<i>How addressed</i>
Student interest	IRB study showed 8% utilization/potential for 2000 unique visits
Utility	Good evidence
Cost	Free service by PCOM
Space	Early AM sessions in unused rooms
Student-centered medical home	In-house (“at home”) care
Peers	Many Ivy League universities

IRB, institutional review board; PCOM, Pacific College of Oriental Medicine.

**Stakeholder Satisfaction**

Each patient was given—and encouraged to complete—Columbia Health Medical Services standard patient satisfaction survey after every acupuncture visit for the first year. The survey is on a card and guides patients to answer questions on a 1–5 Likert scale (Appendix 1). The back of the card is for comments (Tables 4 and 5).

**DISCUSSION**

Developing the acupuncture service helped the IM Working group learn and align itself with the priorities of Columbia Health Medical Services. The unsuccessful first proposal created a map for the current authors to navigate and identify key stakeholders to include as the second successful proposal was prepared.

Core questions to offer other college health services considering the addition of an acupuncture service include:

- What do you presently know about your student community’s utilization of CAM, including acupuncture?
- How would acupuncture enhance the services already provided?
- Who are the key stakeholders to ensure success of your proposal?
- What would be the stakeholders’ likely concerns?
- How would you address these concerns?
- Do you have adequate space?
- How would adding an acupuncture service affect what you are already doing?

TABLE 4. SUMMARY OF PATIENT-SATISFACTION SURVEY

<i>Scale of 0–5<sup>a</sup></i>	<i>Total responses</i>	<i>Average</i>
Clinical staff	122	4.9
Promptness	126	4.5
Ease of scheduling	118	4.63
Quality of information on telephone or before appointment	78	4.72

<sup>a</sup>Key: 5 = excellent; 1 = poor.

TABLE 5. SAMPLE SUMMARIES OF STAKEHOLDERS’ COMMENTS

<i>Source of comments</i>	<i>Comments</i>
Patient comments	<ul style="list-style-type: none"> <li>• Acupuncture is one of the best services offered by CU</li> <li>• Would like some explanation why needles are put at certain points.</li> <li>• Would love to do more than 5 sessions.</li> <li>• Room was cold.</li> <li>• It would be helpful to have ability to lie on stomach for back treatments.</li> <li>• Acupuncturist was kind, attentive, gentle &amp; extremely encouraging. “It made me feel better about coming here.”</li> </ul>
Clinician comments	<ul style="list-style-type: none"> <li>• Great option for our students</li> <li>• Wish there was more availability</li> <li>• 1 patient with migraines now off medications because of acupuncture</li> <li>• “Many of the student that I have seen after using the service have reported benefits from just a few sessions and others have continued with treatments at PCOM for maintenance therapy.”</li> </ul>
PCOM comments	<ul style="list-style-type: none"> <li>• CU staff &amp; administration friendly, helpful, &amp; accommodating</li> <li>• CU students wonderful to work with</li> <li>• Busy with waiting list of patients</li> <li>• Would like to offer community acupuncture to decompress sessions &amp; offer interns more opportunity to follow patients</li> </ul>
Administration comments	<ul style="list-style-type: none"> <li>• Consider no-show fee for noncancellation of appointments</li> <li>• Suggest presentations at local &amp; national meetings to share CU experience</li> <li>• Service can serve as model for other university health services</li> </ul>

PCOM, Pacific College of Oriental Medicine; CU, Columbia University.

- Is there a different CAM modality that you believe would meet the needs of your student community better?
- Why would other CAM services meet these needs better than acupuncture?

Program evaluation was an important second step to bolster support for the new CU acupuncture service. The patient-satisfaction scores for the acupuncture service were well-received and served as an important metric for key stakeholders. In response to patient feedback, examination tables with headrests were purchased to facilitate the opportunity for treatment on the back or front of the body. Initially the no-show rate was 12% until day-before reminder calls to patients were added. This simple procedure reduced the no-show rate to 5% and increased access to the service for students.

This well-utilized and reviewed service has laid the groundwork for continued innovation. Future directions

include an electronic health note for acupuncture visits and a second session designed for athletes. This session would be collaboration among CU's athletic division, PCOM, and CU's Medical Services. In addition, the current authors hope to do outcome-based quality-care studies together. One such study would be performed to assess cost savings to Medical Services as a result of students remaining in-house for care instead of being referred out of CU.

## CONCLUSIONS

The addition of an acupuncture session to the Columbia University Student Health Center at the Morningside Campus was well-received by students with high satisfaction scores and utilization. This model could be replicated in other college health settings.

## AUTHOR DISCLOSURE STATEMENT

No competing financial interests exist.

## REFERENCES

1. NIH, National Center for Complementary and Integrative Health. Complementary, Alternative, or Integrative Health: What's In a Name? Online document at: <https://nccih.nih.gov/health/integrative-health> October 2008; Updated March 2015. Accessed July 21, 2015.
2. NIH, National Center for Complementary and Integrative Health. Acupuncture: What You Need to Know. Online document at: <https://nccih.nih.gov/health/acupuncture/introduction> December 2007; Updated November 2014. Accessed July 21, 2015.
3. Da Silva AN. Acupuncture for migraine prevention. *Headache*. 2015 Mar;55(3):470–3.
4. Cheong KB, Zhang JP, Huang Y, Zhang ZJ. The effectiveness of acupuncture in prevention and treatment of postoperative nausea and vomiting—a systematic review and meta-analysis. *PLoS One*. 2013 Dec 13;8(2):e82474.
5. Manyanga T, Froese M, Zarychanski R, Abou-Setta A, Friesen C, Tennenhouse M, Shay BL. Pain management with acupuncture in osteoarthritis: a systematic review and meta-analysis. *BMC Complement Altern Med*. 2014 Aug 23;14:312.
6. Cao H, Li X, Han M, Liu J. Acupoint stimulation for fibromyalgia: a systematic review of randomized controlled trials. *Evid Based Complement Alternat Med*. 2013;2013:362831
7. Vickers AJ, Cronin AM, Maschino AC, et al. Acupuncture for chronic pain: Individual patient data meta-analysis. *Arch Intern Med*. 2012;172(19):1444–1453.
8. Nowak A, Hale H. Prevalence of complementary and alternative medicine use among U.S. college students: A systematic review. *Am J Health Educ*. 2012;43(2):116–126.
9. Nichols AW, Harrigan R. Complementary and alternative medicine usage by intercollegiate athletes. *Clin J Sports Med*. 2006;16(3):232–237.
10. Aetna. Acupuncture. Online document at: [www.aetna.com/cpb/medical/data/100\\_199/0135.html](http://www.aetna.com/cpb/medical/data/100_199/0135.html) Accessed July 21, 2015.
11. Columbia University—Morningside Campus. Member Responsibility. Online document at: [health.columbia.edu/system/files/content/PDF/Insurance/plan\\_comparison\\_detail.pdf](http://health.columbia.edu/system/files/content/PDF/Insurance/plan_comparison_detail.pdf) Accessed August 26, 2015.
12. Versnik Nowak AL, DeGise J, Daugherty A, O'Keefe R, Seward S Jr, Setty S, Tang F. Prevalence and predictors of complementary and alternative medicine (CAM) use among Ivy League college students: Implications for student health services. *J Am Coll Health*. 2015;63(6):362–372.
13. Melchart D, Weidenhammer W, Streng A, Reitmayr S, Hoppe A, Ernst E, Linde K. Prospective investigation of adverse effects of acupuncture in 97 733 patients. *Arch Intern Med*. 2004;164(1):104–105.
14. MacPherson H, Thomas K, Walters S, Fitter M. The York acupuncture safety study: Prospective survey of 34 000 treatments by traditional acupuncturists. *BMJ*. 2001;323(7311):486–487.
15. Pacific College of Oriental Medicine. Is a Career in Holistic Medicine Right for you? Online document at: [www.pacificcollege.edu](http://www.pacificcollege.edu) Accessed July 28, 2015.
16. AAFP [American Academy of Family Physicians]. Patient-Centered Medical Home. Online document at: [www.aafp.org/about/policies/all/pcmh.html](http://www.aafp.org/about/policies/all/pcmh.html) Accessed July 28, 2015.
17. Cornell Student Office of Student Health Benefits, Student Plans. Student Health Plan (SHP). Online document at: [studenthealthbenefits.cornell.edu/cms/benefits/plans/health/SHP/](http://studenthealthbenefits.cornell.edu/cms/benefits/plans/health/SHP/) Accessed August 26, 2015.
18. Princeton University, University Health Services. Student Health Plan. Online document at: <http://uhs.princeton.edu/student-health-plan> Accessed August 26, 2015.
19. Student Health Service, University of Pennsylvania. Acupuncture. Online document at: [www.vpul.upenn.edu/shs/Acupuncture.php](http://www.vpul.upenn.edu/shs/Acupuncture.php) Accessed August 26, 2015.
20. Harvard University. Center for Wellness. Online document at: [huhs.harvard.edu/services/center-wellness](http://huhs.harvard.edu/services/center-wellness) Accessed August 26, 2015.
21. Columbia University Medical Center. Student Health Service. Online document at: [cumc.columbia.edu/student-health](http://cumc.columbia.edu/student-health) Accessed August 26, 2015.

Address correspondence to:  
 Richard O'Keefe, MD, MA, FAAFP  
 Columbia Health  
 Columbia University  
 519 West 114th Street MC 3601  
 New York, NY 10027  
 E-mail: ro2123@columbia.edu

(Appendix follows →)

