SEA Society for Education in Anesthesia

Professional Identity Formation: A Phenomenon at the Intersection of the Major Issues Facing Our Field

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Over the last 10 years, it has been easy to identify the topics receiving the most attention in both scientific and editorial articles in our profession. Leaders in our field appropriately highlight these issues with dramatic statements justified by both evidence and shared values:

Nwokolo et al. "unequivocally advocate for greater diversity within the medical profession in general and within anesthesiology" as "greater diversity will enhance our field and improve our ability to serve as educators, pursue science, and better serve our patients and communities" (*Anesth Analg* 2022;134:1166-74).

Bissing et al. illustrate how "women face unique barriers to career advancement in academic medicine, most significantly family responsibilities and promotion requirements. These barriers may be at their most extreme at the beginning of a young physician's career when many women are simultaneously trying to establish themselves in the field, while also starting a family" (*Anesth Analg* 2019;128:137-43).

Afonso et al. report that "not feeling supported in work-life was strongly associated with high risk for burnout and even more strongly with burnout syndrome" (*Anesthesiology* 2021;134:683-96).

Kain et. al. describe that "the American healthcare system is undergoing significant changes in response to healthcare reform legislation such as the Affordable Care Act of 2010, as well as market forces and the ongoing maturation of the American healthcare industry" and this "has provided the discipline of anesthesiology an even stronger impetus to expand the name of our specialty to reflect the broadening of our involvement in perioperative medicine" (*Anesthesiology* 2015;122:1192-5).

And Cecil reports that "the new trend across the U.S. in the last 20 years is for the hospital to take over private practices, which is especially true for anesthesiology. AMA survey data from the last few years shows that physician ownership of group practice has decreased, while physicians as employees has risen along with physicians as independent contractors" (*ASA Monitor* 2021;85:23-4).

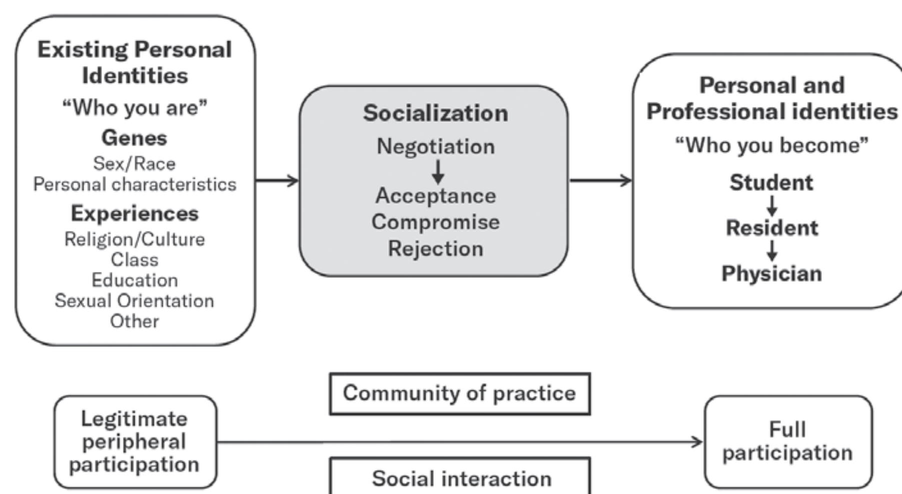

Figure 1: A schematic representation of professional identity formation, indication that individuals enter the process of socialization with partially developed identities and emerge with both personal and professional identities (upper portion). The process of socialization in medicine results in an individual moving from legitimate peripheral participation in a community of practice to full participation, primarily through social interaction (lower portion).

The totality of these issues and phenomena converges upon a single construct critically relevant to the future of our specialty: *professional identity formation*.

Professional identity formation is a complex phenomenon that represents the journey taken by individuals as they transition from "who they are" (or their perception of such) to "who they want to be" (their intended professional identity). This process is impacted by a variety of factors, both internal or intrinsic and external to the individual.

Cruess et al. provide a useful framework for conceptualizing the process of identity formation at the individual level (*Acad Med* 2015;90:718-25). This model emphasizes the importance of an individual's existing identity (gender, race, class, religion, sexual orientation, etc.) confronting a socialization process that moves them from peripheral participation in a professional community to full participation (Figure 1). This process is influenced by role-models/mentors as well as the clinical or professional learning environment (Figure 2). However, it is critical to recognize the role of external factors upon this process (how broader forces shape the clinical or professional environment *and* role models' sense of the identity they intend to instill).

At a macro level, we as a profession are constantly evolving our self-conception or professional identity. This collective identity (reflecting the dynamic at the individual level) is also impacted by internal factors (the notions of identity, both perceived and desired of those within or joining our profession) and external

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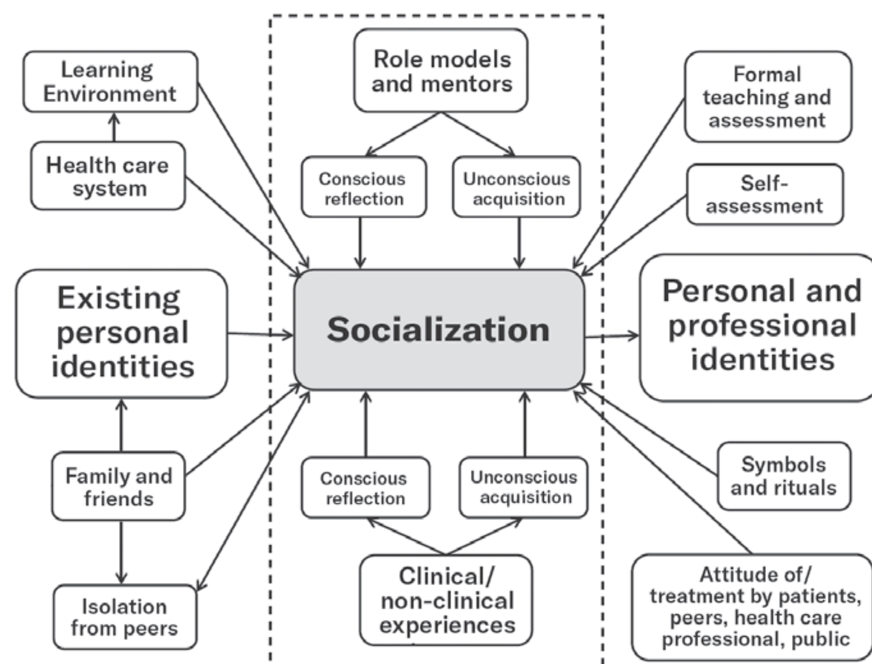

Figure 2: A schematic representation of the multiple factors involved in the process of socialization in medicine. The large center box surrounded by the dotted line, which includes role models and mentors and experiential learning, indicates their importance to this process. The direction of the arrows from existing personal identities to personal and professional identities indicates the dynamic nature of this process.

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(economic, political, social, and technological). The recent emphasis on racial and gender diversity and representation in our field and the growing focus on work-life balance (with observable correlation to burnout) represent a shift in our collective self-identity as a profession. This is in part driven by political, social, or generational changes in our society. External economic and political forces impacting our collective self-identity manifest in phenomena such as the growing emphasis on the Perioperative Surgical Home model as well as shifts toward hospital or anesthesia management company (AMC) ownership/consolidation of anesthesia practices.

The division between internal and external factors is non-discrete, as the dynamism in our collective professional identity arises largely from a continuous interplay between these levels. Economic and social factors impact the self-conception of those entering our workforce and, in turn, shape our response to economic and political forces. For example, to what extent do demographic changes in our professional representation and a growing emphasis on work-life balance play a role in broader economic trends such as a shift away from private practice to hospital-based or AMC ownership models? Or alternatively, to what extent does the dwindling opportunity for physician ownership drive an emphasis on work-life balance as a response to the proletarianization of our professional workforce? This fluidity speaks to the impossibility of a stable professional identity over time.

By reviewing the scholarship on professional identity formation and identifying the specific factors that pertain to our field, we can more deliberately assess the forces at work determining the near- and long-term future of how those in our field will conceive of themselves and their role in medicine and society. For those interested in this discussion, professional identity formation will be the theme of the upcoming Society for Education in Anesthesia Fall Meeting on November 4, 2022, in Chicago, Illinois. ■

A Review of Lithotomy Position-Related Intraoperative Peripheral Nerve Injury and Preventative Measures

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Intraoperative peripheral nerve injury (IPNI) is a debilitating and costly complication that can follow anesthesia during surgery (*Anesthesiology* 1999;90:1062-9). The most recent closed claims analyses spanning 2007 to 2014 indicate that 13.5%-14% of claims were due to nerve injury, ranking nerve damage as the third most common perioperative injury behind teeth damage, and death or pain (*J Patient Saf* 2021;17:513-21; *J Healthc Risk Manag* 2014;34:31-42). IPNI can result in permanent loss of limb function in up to 23% of patients and an average cost of claims reaching $46,269 (*J Clin Anesth* 2019;58:84-90; *Best Pract Res Clin Anaesthesiol* 2011;25:263-76).

Any IPNI is likely influenced by several preexisting factors, including neuropathy, patient comorbidities, and medical errors (*J Clin Anesth* 2019;58:84-90; *Surg Neurol* 2005;63:5-18).

Risk factors for IPNI pertaining to preexisting neuropathies and comorbidities include diabetes, peripheral vascular disease, anorexia, obesity, tobacco use, and hypertension (*J Healthc Risk Manag* 2014;34:31-42; *Surg Neurol* 2005;63:5-18; *Anesthesiology* 2009;111:490-7). Intraoperatively, IPNI has been associated with deep hypothermia, hypotension, and the use of upper- or lower-extremity tourniquets (*Surg Neurol* 2005;63:5-18). Surgical risk factors such as the use of intrapelvic self-retaining retractors may contribute to IPNI during surgery in the lithotomy position (*Anesthesiology* 2000;93:938-42).

In addition, improper patient positioning and inadequate padding can increase the risk of IPNI, with the most frequent being the femoral and common peroneal nerves in the lower extremities (*Anesthesiology* 2000;93:938-42; *J Minim Invasive Gynecol* 2017;24:16-27).

Figure 1: Variations of the Lithotomy Position Used in Surgical Procedures
Reproduced with permission from Warner et al: Lower Extremity Neuropathies Associated with Lithotomy Positions (*Anesthesiology* 2000;93:938-42; Positioning in Anesthesia and Surgery. 3rd edition, 2002).

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The lithotomy position is often used when performing gynecologic, urologic, and colorectal surgeries (Figures 1 and 2) (*J Minim Invasive Gynecol* 2017;24:16-27; *Anesth Analg* 1992;75:275-83; Positioning in Anesthesia and Surgery. 3rd edition, 2002). IPNIs in this position may be the result of stretching and/or compression of nerves, further exacerbated by preexisting ischemic and metabolic disorders. The incidence rate of lower-extremity nerve injuries in the lithotomy position has been reported to be up to 10%, further highlighting the importance of this phenomenon (*Anesthesiology* 2000;93:938-42; *J Adv Nurs* 2020;76:490-503).

Cadaveric studies assessing the stretch of femoral nerves in the lithotomy position have found that hip extension between 10-20 degrees can stretch the femoral nerve by more than 5% (*Female Pelvic Med Reconstr Surg* 2017;23:457-61). Femoral nerve stretch injury can result in quadriceps weakness, loss of knee jerk reflex, knee extension, and sensory loss to the anterior and medial thigh and leg (*Female Pelvic Med Reconstr Surg* 2017;23:457-61). Furthermore, hip abduction of greater than 30-45 degrees can cause further strain to the obturator nerve. Therefore, to avoid injury, it is suggested that the hip remain flexed, from 10-110 degrees, the knee remain

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