

**Title** Development of Day 1 competencies for swine veterinary graduates

### **Authors/investigators**

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### **Statement of the problem:**

Swine curriculum at the US Veterinary Colleges vary tremendously between institutions. The delivery of swine medicine education in many Colleges has changed significantly over the last decade in part due to the fact that many Colleges have limited faculty in swine or limited access to resources to ensure adequate training and development of skills of veterinary students interested in swine medicine. Therefore, it is often during summer internships and out-of-class experiences that students develop the skills they will need upon graduation, under the mentorship of swine practitioners. Unfortunately, without clear objectives of the skills required, students may graduate with varying degrees of competency.

Veterinary education is moving towards a competency-based model. Students need to memorize facts and information to become veterinarians but they also need to master the skills that they will need in their daily practice of veterinary medicine. It is unclear at this point which Universities follow this approach and which skills are considered part of the “day 1 competencies”. At the University of Minnesota, College of Veterinary Medicine we have recently developed and are in the process of implementing competencies in Public Health following the guidelines of the Office International des Epizooties (OIE - World Organization for Animal Health). Because this process is still developing, there is an opportunity to follow a similar approach and create a set of competencies uniquely dedicated to swine veterinary practice and to help implement them consistently among US Colleges to promote excellence in teaching. The UMN is uniquely qualified to lead such initiative in conjunction with collaborating partners.

### **Objectives**

- Develop a list of Day 1 competencies for swine veterinary graduates based on the judgement, experience and opinion of practicing swine veterinarians.

→ completed

- Publish the list of competencies in a veterinary educational publication.

→ manuscript in writing

- Make the content available to all AASV student members via an online tool accessible from the AASV website and through handouts distributed at the AASV student session.

→ The list is available online and the information has been shared with the AASV website designer.

→ Dr. Pittman has graciously agreed to give Dr. Zhitnitskiy 5 minutes at the beginning of the DVM student session on Sunday morning at AASV to present the list to DVM students.

- Share the results with other Colleges of Veterinary Medicine around the country.

→ Dr. Zhitnitskiy will send the finalized list to swine faculty members at different College of Veterinary Medicine as well as during the faculty breakfast at the AASV meeting. Additionally, the list will be posted on the AASV website for all to see and use as they wish.

## How the data was collected

**Step 1:** The first step was to create a provisional list of skills that DVM students should be proficient at upon graduation. A group of seven faculty specialised in Swine Health and Production with a significant involvement in teaching DVM students at the UMN CVM volunteered to be part of the focus group who created the first version of the competency list. After searching the literature and compiling previous versions of swine skill lists from the University of Minnesota CVM, the Iowa State University CVM, and the North Carolina State University CVM, a first document was created. Syllabi of swine -related courses and more particularly senior clinical rotations were compared to the skill lists to ensure that swine-related activities taught during the DVM curriculum would not be overlooked.

Each of the skills mentioned was then evaluated to ensure that they were measurable. The reviewers asked themselves “Can we design a type of assessment in which a student could demonstrate to us that they can perform this skill?” This first triage allowed for the removal of knowledge-based learning objectives which, although very much valid to develop a swine curriculum, could not be considered as skills. Additionally, some skills were reworded to ensure relevance to today’s practice of swine medicine; some also needed to be made more specific to be understood by students and to avoid confusion as to what the expectations were.

**Step 2:** The second step of the process was to enroll experts in swine medicine practice. A task force of six swine practitioners and two swine faculty members from other Colleges was assembled.

The experts were selected based on their familiarity with modern swine veterinary practice, how often they hosted DVM students for internships or externships, or whether they had hired new DVM graduates recently. Faculty members included in the panel were faculty advisors from the American Association of Swine Veterinarians in their respective Colleges of Veterinary Medicine. All of them had a comprehensive understanding of the swine curriculum taught at their institutions and were involved in teaching DVM students.

Each member received the list of skills created in Step 1 with the instruction to assign them a level of importance as follows:

- Level 1 = Basic: every DVM graduate should be able to perform this competency
- Level 2 = Intermediate: Every DVM graduate who wants to practice swine medicine should be proficient at this competency
- Level 3 = Advanced: Every DVM graduate who wants to practice swine medicine should be able to explain how to perform and may have performed these tasks while being supervised.

Members of the task force were also asked to add to the list if they felt that some important skills, critical to the practice of swine veterinary medicine were missing. In the document they received, a comment box was left blank next to each of the skills so that they could provide any feedback if they wished to do so.

**Step 3:** The task force's scores and comments were compiled, analyzed and discussed by the swine faculty in order to reach a consensus regarding which level each skill belonged to. Additionally, swine faculty members considered new skills proposed by the task force, and added them to the level they agreed they were a best fit for.

## **Most significant findings**

109 swine-oriented competencies were identified and organized into three levels of expertise as described above and nine domains: pig handling, swine husbandry, sample collection, record keeping and result interpretation, clinical reasoning, treatment and prevention, biosecurity, communication, and regulatory.

For now, the competencies may be found at <http://z.umn.edu/SwineCompetencies>. The students have the possibility to save their progress, access the list from their phone through an app or even print the list.

## **How findings will assist the practicing veterinarian**

The list of skills will be helpful to swine practitioners who kindly accept to share their time and expertise for internships and externships. They will be able to know exactly where the students stand in their apprenticeship.

Having a list of competencies will enable all interested students to reach a baseline level that will help practices and producers assess the candidates for hiring purposes.

## **Take-home messages**

- There are many skills that a DVM student needs to learn to become a practice-ready veterinarian.
- 109 competencies were selected by a task force made of swine practitioners and faculty and are available at <http://z.umn.edu/SwineCompetencies>
- Students will be able to become active participants in their training by self-assessing their level of proficiency in the defined skills.