

Swine Health Management RVS Exam Study Guide - 2024

This guide will help you prepare for the ABVP Swine Health Management (SHM) Recognized Veterinary Specialty (RVS) examinations. The SHM has a two examinations; an Entry examination to evaluate general knowledge required to enter the program, and a Certification or Diplomate examination scheduled at the end of the program. The AVMA best practices is that the examination items align with a Job Task Analysis (JTA) of current RVS Diplomates. The 2018 JTA identified tasks, diseases, etc. that Diplomates either saw frequently or expected a Specialist to have immediate knowledge of subject. Additionally, it has been decided that some exam items can come from current journals and a small percentage can be at your Exam Committee’s discretion. Please note that exam questions drawn from current journals (with a 5 year look back period) are 1) from a journal on the RVS reading list, 2) the question is developed from an open access journal article OR if the article is not open access, the question is drawn from the abstract only and 3) for any non-open access journal article, the abstract must be inexpensively obtained. The exception to this is Veterinary Clinics of North America (if applicable), where the exam taker is responsible for the whole article

PART A. Entrance Exam Blueprint (100 questions)

Questions on the Entry Examination will be allocated across relevant topics in swine medicine that relate to the JTA. For topics that are systems (such as Cardiovascular, etc.), questions can include anatomy, physiology, pathophysiology, diseases (Including neoplasia), etiologies, diagnosis, and therapy.

Topic	Allocation	Topic	Allocation
Behavioral (B)	up to 1%	Nervous (NV)	1%
Cardiovascular (CV)	up to 1%	Nutritional (N)	4%
Endocrine (E)	up to 1%	Oral/Dentition/Beak (O)	up to 1%
Gastrointestinal (GI)	12%	Neoplasia - concepts, multisystem (NP)	up to 1%
Genetic (G)	up to 1%	Pharmacologic (RX)	2%
Hemolymphatic (HL)	up to 1%	Regulatory (RG)	1%
Immunologic (I)	up to 1%	Reproductive (RP)	9%
Infectious (IN)	31%	Respiratory (RS)	8%
Integument/Mammary (IM)	8%	Special senses (SS)	1%
Management/Environment (ME)	16%	Toxicologic (T)	2%
Metabolic (M)	1%	Urogenital (UG)	2%
Musculoskeletal (MS)	2%	Zoonotic (Z)	up to 1%
		TOTAL	~100%

Specific conditions

Certain topics were specifically identified as important to Diplomates in your RVS. This list is meant to help guide your study into these important topics but this is not an all-inclusive list. Topics relevant to swine medicine that are not on this list may be present on the exam.

Common pathogens	Common conditions	Production and other disciplines
------------------	-------------------	----------------------------------

Actinobacillus pleuropneumoniae/suis	Abortions	Animal Welfare-associated health impacts
Atrophic rhinitis - Bordetella and Pasteurella species	Abscesses	Breeding program evaluation - e.g. NPD, heat detection, AI, estrus management assessment
Clostridium species	Aural hematoma	Dystocia
E. coli - enteritis	Infertility, early embryonic death	Farm employee training
Erysipelas	Iron deficiency anemia	Quality assurance, good production practices, deficiencies and corrective action plans
Glässerella parasuis	Lameness: assessment, treatment, and diagnosis	Pharmacology - pharmaceutical treatment
Influenza A virus of swine	Necropsy procedures and interpretation (gross and histo)	Regulatory processes – specific to your country (VFD, health certificates, etc)
Mycoplasma hyopneumoniae	Diarrhea: bacterial or viral	Standard Operating Procedures
Swine coronaviruses (PEDV, TGEV, PDCoV, PRCV)	Pneumonia: bacterial, viral	Welfare, behavior and well-being
PRRS	Rectal prolapse	
Proliferative enteropathy - ileitis, Lawsonia intracellularis	Septicemic diseases	
Rotavirus A and C	Toxic gases	
Streptococcus suis	Vaccines and vaccination programs	
	Vices and stereotypies	
	Vitamin E/selenium deficiency	

PART B. SHM Certification Examination

The certification exam aims to evaluate knowledge and problem solving skills in all aspects of swine health and production, as well as the ability to effectively communicate (written, verbal) with colleagues. More specifically, an ABVP certified swine practitioner should:

1. Demonstrate a thorough understanding of production and economic parameters, and their interactions in swine production units.
2. Be familiar with abnormal and normal disease levels and their effect on production, including current knowledge concerning etiology, epidemiology, pathogenesis, pathology, diagnosis, treatment, prevention, and control measures.
3. Be familiar with various swine production systems (e.g. All In / All Out, Segregated Early Weaning, Batch Farrowing, Parity Segregation, etc.) and factors affecting productivity and profitability of swine herds in those systems.
4. Be familiar with various record systems that allow practitioners to collect and analyze data on herd performance, and the economics connected with such performance when compared to a database.
5. Be able to establish, implement, and evaluate herd health and production performance programs to promote improvements for the farm being evaluated by benchmarking. Be familiar with targets and intervention points on various performance monitors.
6. Be familiar with all aspects of swine welfare including the auditing or validation methods used in quality assurance programs such as the Common Swine Industry Audit (CSIA), Pork Quality Assurance, or Canadian Pork Excellence programs (or equivalent from your country of practice), and the pig welfare parameters that are expected (e.g. pen space, feed and water access, environment, physical and behavioral assessment, etc.).
7. Be familiar with current welfare issues facing the industry, the relevant scientific and societal related to those issues, and alternative practices if they exist.
8. Be familiar with various components of herd health and production programs that would include but not be limited to:
 - a. Herd reproductive performance and parameters
 - b. Breeding management including estrus detection and manipulation, artificial insemination, semen collection and evaluation, and reproductive health.
 - c. Herd economic production performance and evaluation of financial health of an organization or business
 - d. Principles of nutrition and growth biology, options to manipulate
 - e. Principles of ventilation (design, operation, troubleshooting, etc.)
 - f. Principles of immunology (cellular, antibody, innate, vaccinology, etc.)
 - g. Basic pharmacology, drug classes, antibiotic resistance, antimicrobial benchmarking, judicious usage, compounding and related regulatory issues

- h. Analgesia and pain management
- i. Swine genetic programs, breeding programs, culling procedures, evaluations (EBVs, marker assisted selection, application of genomics and genetic modification, etc.)
- j. Carcass evaluation — packer kill/cut-out sheets
- k. Herd immunization and infectious disease control programs
- l. Environment with relationship to health and productivity (buildings, manure handling systems, ventilation)
- m. Epidemiology and disease outbreak investigation
- n. Principles of disease causality
- o. Principles of animal behavior and well-being
- p. Pre- and post-harvest food safety issues (e.g. antimicrobial residues, broken needles, etc.) as addressed in industry or commercial training and auditing programs such as Pork Quality Assurance.
- q. Regulations and regulating authorities as pertain to swine production; examples including FDA, USDA, EPA, OSHA (or equivalent authorities or agencies in your country of practice).
- r. Secondary nutrient management (e.g. manure management)
- s. Biosecurity systems and the effects of risk management
- t. Farm economics, financial planning, partial budgets, and decision analysis
- u. Evaluation of experimental data, studies, critical reading of scientific literature
- v. Principles of on-farm trial design, data collection and analyses

Preparation for the certification examination

The most important aspect of preparation is to spend time or work in swine practice, or working closely with swine practitioners understanding what they do. Supplement this knowledge and experiences with independent reading and formal continuing education events. Emphasis should be placed on high quality material across a broad range of topics that are relevant for a practice environment. Candidates will be evaluated based on the breadth and depth of their understanding. Knowledge can be built in many ways; some examples of suggested reading and continuing education opportunities are presented below.

Texts

- Swine Disease Manual, 5th Edition. Editor: EJ Neumann, Copyright AASV, 2020
- Diseases of Swine, 11th Edition - JJ Zimmerman et al. (ed) 2019
- Pig Health, J Carr et al. (ed). Taylor and Francis Group, 2018.
- Color Atlas of Diseases and Disorders of the Pig. Smith, Taylor, Penny. ISU press, 1998
- Essentials of Pig Anatomy. Sack Veterinary Textbooks, Ithaca, NY 1982
- Managing Pig Health: a Reference for the Farm (2nd ed). Muirhead & Alexander, 2013
- Multisite Pig Production. D.L. Harris (2008), Wiley-Blackwell

- Pathology of the pig: a diagnostic guide. Sims and Glastonbury. Pig Research and Development Corporation (Australia). Agriculture Victoria. 1996
- Swine Nutrition Guide 2nd ed. 1995. Prairie Swine Centre, Saskatoon. Canada.
- Nutrient Requirements of Swine, 11th ed., National Research Council, National Academies Press, Washington, DC. 2012
- National Farm Animal Care Council. Code of Practice: for handling and care of pigs. Canadian Pork Council, 2014.

Refereed Journals

Applicants are encouraged to learn and effectively utilize literature search engines to focus their studies on current medical and industry information and issues. Swine related topics in the following journals (this is not an all-inclusive list) may be relevant for the aspiring Diplomate. Focus on papers published in the last 5 years.

- American Journal of Veterinary Research
- Animal Health Research Reviews
- Animal Reproduction Science
- Animal Welfare
- Animals
- BMC Veterinary Research
- Canadian Veterinary Journal
- Frontiers in Veterinary Science
- Journal of Animal Science
- Journal of the American Veterinary Medical Association
- Journal of Applied Animal Welfare Science
- Journal of Porcine Health Management
- Journal of Swine Health and Production
- Journal of Veterinary Diagnostic Investigation
- Livestock Production Science
- Pig Health Management
- PLoS ONE
- Preventative Veterinary Medicine
- Research in Veterinary Science
- Scientific Reports
- Theriogenology
- Transboundary and Emerging Diseases
- Translational Animal Science
- Veterinary Clinical Pathology
- Veterinary Journal
- Veterinary Microbiology
- Veterinary Pathology
- Virus Research

Continuing Education Programs

- Executive Veterinary Program - University of Illinois
- Iowa State University practice - based Master of Science degree in Swine Prod. Med.
- Iowa State University - weekly swine seminar series
- University of Minnesota Swine Health Management Certificate Seminar Series
- USDA Veterinary Accreditation courses (FADs, Diagnostic sampling, etc)
- Numerous other universities offer high caliber, relevant swine training

Continuing Education Meetings/Proceedings

There are numerous opportunities to participate in continuing education conferences focused on swine health and production. Some are veterinary specific meetings, others engage the broader industry. Some examples are below, but there are many other regional meetings sponsored by swine practices, regional associations, animal health companies, and some universities.

- American Association of Swine Veterinarians (AASV) Annual Meeting
- Allen D. Lemman Swine Conference (University of Minnesota)
- James D. McKean Swine Disease Conference (Iowa State University)
- International Pig Veterinary Society (IPVS) • Midwest Swine Nutrition Conference
- American Board of Veterinary Practitioners' Symposium – Food Animal Session
- Banff Pork Seminar
- AASV sponsored seminars at World Pork Expo.

Webinars, podcasts and other sources of information

- The AASV and Swine Health Information Center (SHIC) have period webinars on current topics of interest for practitioners.
- The AASV and CASV each have email listservs for their members for news and current research
- Betz R. Swine Farm Business Analysis Workbook. Farm Information Resource Management. Michigan State University.
- "Swine It Podcast Show"
- "At the Meeting" podcast
- Pig333.com
- The Pig Site
- Pork Information Gateway
- Online extension services of various universities and regional pork industries.

Questions on the examination may be derived from sources other than those on this list.