Aortic surgery education – Germany

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Disclosure

Speaker name:

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I have the following potential conflicts of interest to report:

- ☐ Consulting
- ☐ Employment in industry
- ☐ Stockholder of a healthcare company
- ☐ Owner of a healthcare company
- ☐ Other(s)

- ■ I do not have any potential conflict of interest

Structure

- The governmental perspective:
  - Medical Continuing Training in Germany
- The medical society perspective:
  - The Curriculum 6+ of the GSTCVS
- The personal perspective:
  - Elements of aortic surgery education

The Governmental perspective

Basic medical training

- minimum 6 years, incl. 48 weeks practical training
- **State** examination

➢ "Approbation" = License to practice medicine

Continuing Training

- Surgery: minimum 6 years, 24 + 48 month
- Training curriculum "Musterweiterbildungsordnug'
- Examination by **federal medical board**

➢ Specialist for Surgery:

- General / Vascular / Cardiac / Thorax / Orthopaedic / Plastic / Visceral

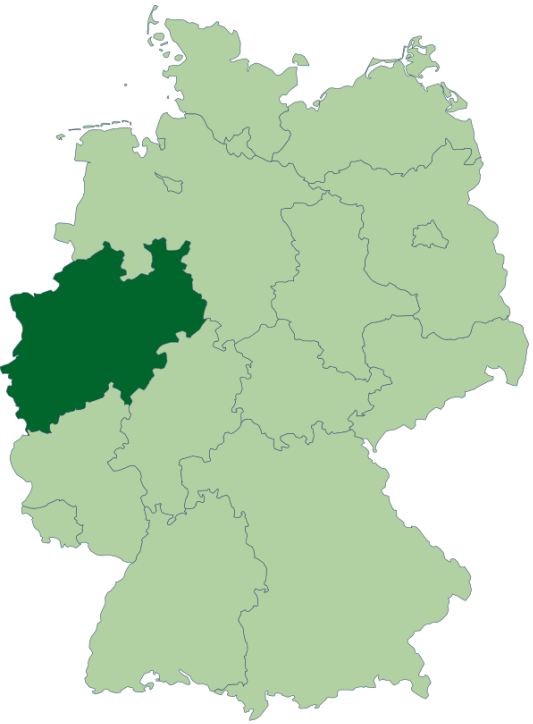
Continuing Training

- Specialities and Extra Qualifications
- Certified by **medical societies**

The Governmental perspective

The German Training curriculum of <u>all</u> disciplines scanned for ”Aorta”

Exemplary for the Federal state North Rhine-Westphalia



- In total 9 hits
  - 3 about paraaortal Lymphadenectomy (Gyn)
  - 3 Vascular surgery
  - 3 Cardiac surgery

The Governmental perspective

The German Training curriculum of <u>all</u> disciplines scanned for ”Aorta”

Exemplary for the Federal state North Rhine-Westphalia

Vascular Surgery

- rekonstruktive Operationen
  - an supraaortalen Arterien,
  - an aortalen, iliakalen, viszeralen und thorakalen Gefäßen,

rekonstruktive Operationen, davon	
- an supraaortalen Arterien	25
- an aortalen, iliakalen, viszeralen und thorakalen Gefäßen	50

Reconstructive Operations:

- Supraaortiv vessel: **25**
- Aortic iliac, visceral, thoracic vessels: **50**

Cardiac Surgery

Operationen mit Hilfe oder in Bereitschaft der extrakorporalen Zirkulation, davon	
- an Koronargefäßen	150
- an der Mitralklappe einschließlich Rekonstruktion	10
- an der Aortenklappe und/oder Aorta aszendenz/Mitralklappe/ Koronargefäß	25

- Operationen mit Hilfe oder in Bereitschaft der extrakorporalen Zirkulation
  - an Koronargefäßen
  - an der Mitralklappe einschließlich Rekonstruktion
  - an der Aortenklappe und/oder Aorta aszendens/Mitralklappe/Koronargefäß

Operation ± ECC:

- Aortic valve +
  - Ascending Aorta / Mitral / CABG: **25**

The medical society perspective

The "Curriculum 6+" of the GSTCVS and its Young Chapter

Basic-modules	1. Basics in Cardiac Surgery I 2. Basics in Cardiac Surgery II 3. Coronary artery disease I 4. Acquired Aortic valve diseases I 5. Acquired AV-valve diseases I 6. Thoracic aorta diseases
refresher-modules	7. Exam review course (theory) 8. Exam review course (Skills Assessment Lab)
special Modules	9. Perioperative Echocardiography 10. Pacemaker-/ ICD- and CRT-Therapy (I-III) 11. Congenital cardiac anomaly (I-II) 12. Coronary artery disease II 13. Acquired Aortic valve diseases II: 14. Acquired AV-valve diseases II 15. Thoracic organ transplantation 16. Cardiac assist systems and artificial heart

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[1] S. Günther et al. "Modulares Curriculum 6+," *Z Herz- Thorax- Gefäßchir*, vol. 30, no. 1, pp. 2–5, 2016.

The medical society perspective

The “Curriculum 6+” basic modules

Basics in Cardiac Surgery I

Target audience: first year residents

Content: Patient and peripheral ward management, basic surgical skills

Basics in Cardiac Surgery II

Target audience : second year residents

Content: cardiac surgery ICU management, ventilation, dialysis, ECMO, ECLS, E**CC**

Coronary artery disease I

Target audience : residents

Content: Patophysiology, Indications, revascularisation strategies, wetlab

Acquired Aortic valve diseases I

Target audience : residents

Content: Patophysiology, Indications, operative techniques, wetlab

Acquired AV-valve diseases I

Target audience : residents

Content: Patophysiology, Indications, operative techniques, wetlab

Thoracic aorta diseases

Target audience : residents

Content: Patophysiology, Indications, operative techniques, interventional strategies, wetlab

[1] S. Günther et al. “Modulares Curriculum 6+,” *Z Herz- Thorax- Gefäßchir*, vol. 30, no. 1, pp. 2–5, 2016.

The medical society perspective

German Heart Surgery Report 2015

Replacement[a]	with ECC			without ECC		
	N	†	%	*N*	†	%
Supracoronary replacement of ascending aorta	1,433	127	8.9			
Supracoronary ascending [illegible] replacement	1,329	63	4.7			
Infracoronary ascending			–			
Mechanical valve con		36	7.1			
Biological valve conduits			11.0			
David procedure						
Yacoub procedure	85					
Other	279	25				
Aortic arch replacement[b]	1,977	271	13.7			
Replacement of descending aorta	56	4	7.1	8		0.0
Thoracoabdominal aortic replacement	86	10	11.6	24	4	16.7
Endostent descending aorta	5	0	0.0	625	53	8.5
Total	7,265	654	9.0	657	57	8.7

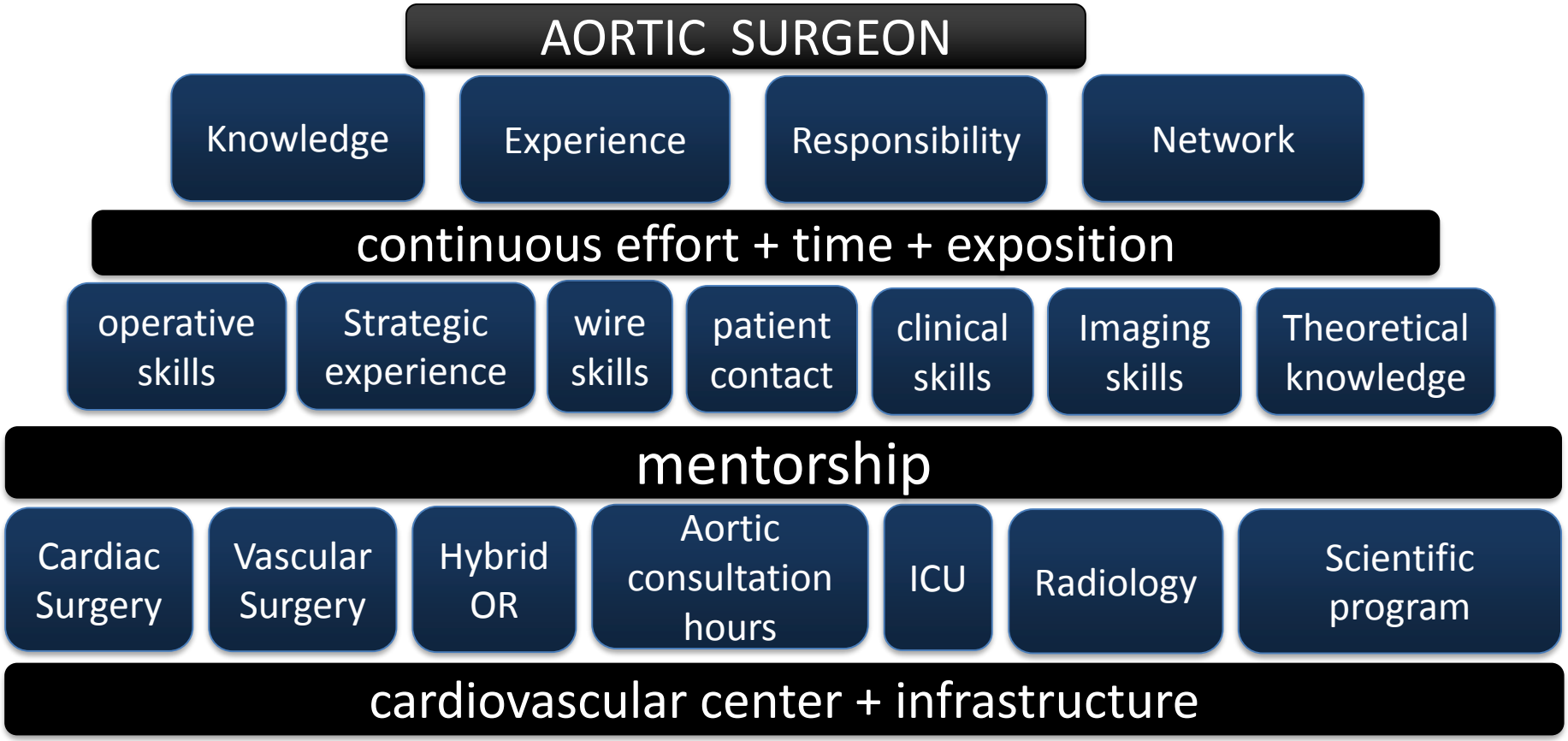
>9000 aortic procedures

+ 549 abdominal procedures and 609 endovascular abdominal stents

[1] A. Beckmann, et al. "German Heart Surgery Report 2015: The Annual Updated Registry of the German Society for Thoracic and Cardiovascular Surgery," *Thorac Cardiovasc Surg*, vol. 64, no. 6, pp. 462–474, Sep. 2016.

The personal perspective

- Elements of aortic surgery education in Germany



The personal perspective

- limitations in aortic surgery education in Germany

  - Max. 8h a day / 48h a week by law:
    - Many cases during night: Education during night

      limits manpower during day
  - Complexity of cases

- Continuous, intrinsic motivated personal effort
  - **For both: trainee and mentor**
- Structured curriculum, specialist for aortic surgery?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