

2017 annual report



About us

Everything under one roof

The Department of Neurology diagnoses and treats people with disorders of the central and peripheral nervous system, neuromuscular transmission, and muscles. We provide integrated care by offering the whole treatment chain from emergency care to rehabilitation for our patients.

Professional & patient-oriented

We treat patients with the utmost care based on our outstanding specialist knowledge in the field of neurology. Our work is based on an integral view of patients in all their dimensions, including mental and psychosocial aspects.

Comprehensive & highly specialised

The department offers high-quality treatment ranging from basic neurological care to highly specialised medicine.

The Department of Neurology is nationally and internationally recognised for the highly specialised medicine it provides in its centres including

- the certified Stroke Centre
- the Centre for Movement Disorders (including deep brain stimulation)
- the Sleep-Wake-Epilepsy Centre that was renovated and reopened in 2015 (including assessments prior to epilepsy surgery).

Interdisciplinary

The Department of Neurology in Bern is Switzerland's largest neurology clinic. Its proficiency is enhanced through close cooperation within the University Neuro Centre, which is one of the three main strategic cornerstones of Insel Gruppe.

Strong in teaching and research

We support the high-quality treatment of our patients with pioneering research and training. The Department of Neurology offers a unique platform for experimental neurophysiological/neurobiological, translational, clinical, and technical research, and is Switzerland's largest further training centre for Specialist Physicians in Neurology.

Department Management (last updated: December 2017)



From left to right: **Prof. Dr. med. René Müri**, Medical Head of Department, University Neurorehabilitation, **Prof. Dr. med. Andrew Chan**, Deputy Chairman of Department and Physician-in-Chief, Head of University Outpatient Neuro Centre and Neurology Polyclinic, **Prof. Dr. med. Claudio L. Bassetti**, Chairman of Department and Physician-in-Chief, **Rosmarie Wyss**, Head of Nursing, **Prof. Dr. med. M. Arnold**, Deputy Physician-in-Chief, Head of Stroke Centre, Stroke Unit and Neurovascular Laboratory, **Mechthild Himmelrich**, Department Manager

Current news

25 years of stroke therapy

Inselspital is a trailblazer in stroke therapy. As the first Swiss centre, it started with thrombolysis treatment in 1992, and then systematically developed a stroke therapy team. Today Inselspital boasts the largest stroke centre in Switzerland.

Neurological-neurosurgical early rehabilitation

Eight brightly lit and modern private rooms opened in January 2017 to round out the facilities at the acute neurorehabilitation unit, making it possible to realize in full our graduated neurorehabilitation care model.

NeuroTec Centre

Awarded financial aid for the move to sitem-insel (Swiss Institute for Translational and Entrepreneurial Medicine). With the NeuroTec Centre platform, the Department of Neurology has access to about 800 m² of space to develop neurorehabilitation and rehabilitation techniques for implementation in an outpatient setting, or even at home for patients.

Sleep research: IFC grant

The University of Bern intensified its research in 2017 and is contributing 6 million Swiss francs from one of three new interfaculty research cooperation (IRC) initiatives to the sleep research project «Decoding sleep: from neurons to health & mind».

Our services

Outpatient Neurology

- Polyclinic with various special clinics (general neurology, multiple sclerosis, neuroimmunology, fast-track outpatient neurology infusion therapies, headaches, dizziness, dementia, etc.)
- Emergency appointments and consultations
- Fast Track Outpatient Neurology Infusion Therapies
- Special centres: Centre for Movement Disorders, including botulinum toxin, Sleep-Wake-Epilepsy Centre, Neuromuscular Centre, including neuromorphological laboratory, Centre for Visual and Perceptual Disorders, Neurovascular Centre

Inpatient Neurology

- Acute ward
- Emergency appointments and consultations
- Stroke Centre
- Neurological-Neurosurgical Intermediate Care Unit

Neurorehabilitation

- Wards at the Inselspital and Riggisberg sites, early rehabilitation
- Outpatient clinic with Memory Clinic, neurovascular rehabilitation

Psychosomatic Medicine

- Pain and stress disorders, functional somatic syndromes, eating disorders, neuropsychosomatic medicine

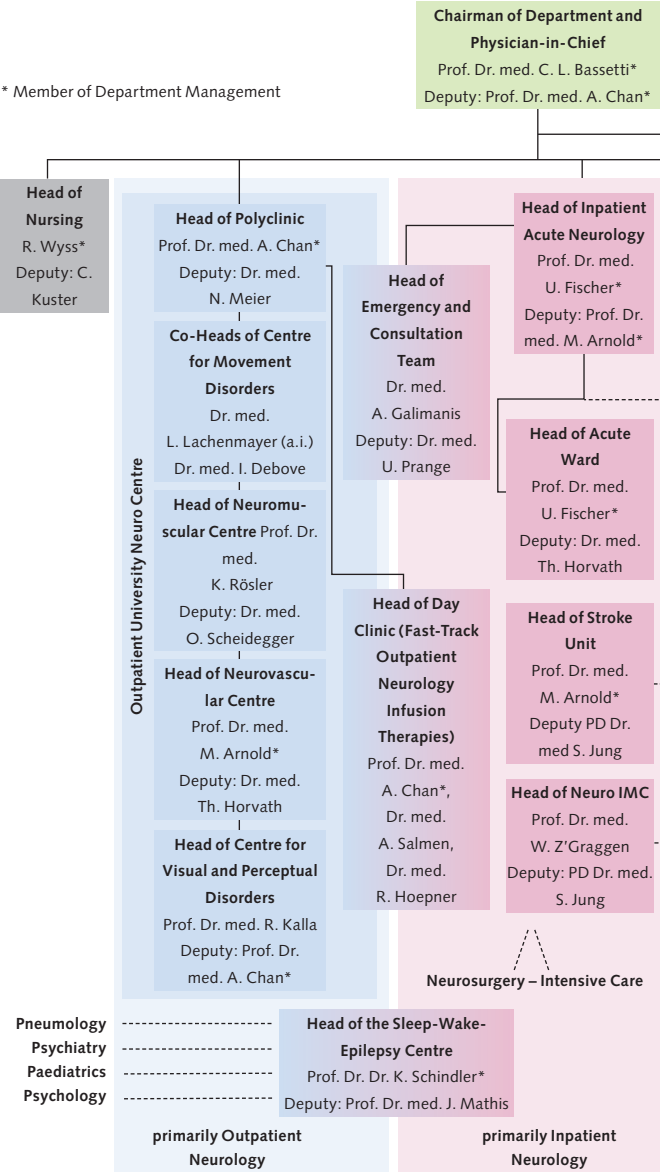
Teaching and research

- Centre for Experimental Neurology (*Zentrum für experimentelle Neurologie*, ZEN)
- Neuro Clinical Trial Unit (NCTU)
- NeuroTec Centre (Swiss Institute for Translational and Entrepreneurial Medicine)

Medical organisational chart

Department of Neurology, Inselspital, Bern

* Member of Department Management



- Key**
- NCTU Neuro Clinical Trial Unit
 - IMC Intermediate Care
 - FANIFast Track Outpatient Neurology Infusion Therapies



Key figures for 2016–2017 development: strong growth

As in previous years, the Department of Neurology treated more patients in 2017, while the average length of stay decreased once more. In the field of highly specialized medicine, the number of epilepsy surgery assessments and stroke treatments increased again in 2017.

Patients	2016	2017	Change in %, rounded
Neurology:			
Number of emergency neurology patients	6 100	5 978	-2
Number of outpatient consultations	15 120	20 664	+37
Number of discharged inpatients*	2 324	2 383	+3
Number of nursing days*	11 811	12 189	+3
Ø length of stay in days*	5.2	5.1	-2
Case mix index (CMI)*/**	1.3	1.3	0
Neurorehabilitation:			
Number of cases	290	502	+73
Number of nursing days	8 910	13 044	+46
Ø length of stay in days		26.98	
Specialist field of Psychosomatic Medicine:			
Number of discharged patients	139	165	+19
Number of nursing days	3 120	4 068	+30
Ø length of stay	22.45	24.65	+10
CMI	2,528	2,743	+9
Outpatient consultations in 2016–2017		4 320	

* without Neurorehabilitation

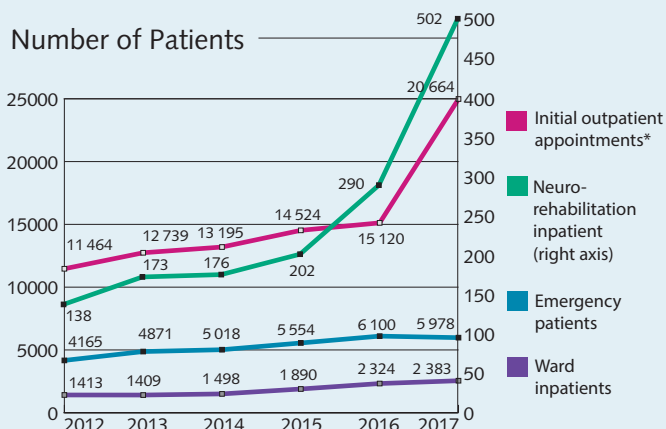
** CMI reflects the degree of severity/complexity of cases

Beds	2016	2017
Acute ward	35	35
Psychosomatic Medicine		16
Stroke Unit	12	12
University Acute Neurorehabilitation	20	34
University Neurorehabilitation, Riggisberg*	20	36
Total number of beds	87	133

* from September 2016

Highly specialised medicine	2015–2017
Number of deep brain stimulation operations	116
Number of assessments prior to epilepsy surgery	120
Number of stroke patients	5072

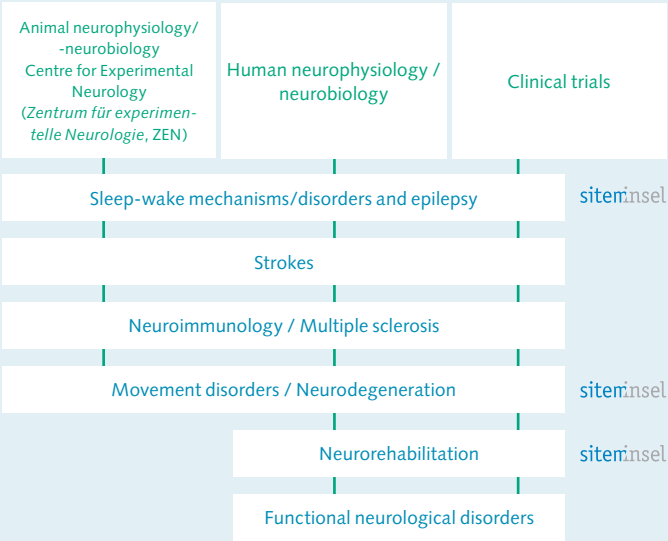
Staff	2016	2017	Change in %
Number of full-time equivalent positions (FTEs) as of 31.12., rounded	283	387	+37



* since 2017 including specialist field of Psychosomatic Medicine

Teaching and research

Main research interests: approaches and methods



With over 50 resident physicians, the Department of Neurology is Switzerland's largest neurology training centre. It offers comprehensive neurological training and the facilitation of part-time scientific positions. Opportunities for rotations in specialized fields in the final 1–2 years of further training are especially noteworthy. In these fellowships, students with particular interest in these fields can acquire in-depth knowledge of diagnostic and therapeutic skills in the areas of stroke, neuroimmunology, multiple sclerosis, epilepsy, sleep-wake medicine, movement disorders, cognitive/restorative medicine, and neuromuscular medicine.

In 2017 the University of Bern provided CHF 6 million for the Interfaculty Research Cooperation (IRC) project «Decoding sleep: from neurons to health & mind» (project leader: Prof. Claudio Bassetti). In addition, two ERC consolidator grants worth a total of CHF 4 million started in our department (project leaders: Prof. Antoine Adamantidis and Prof. Smita Saxena)

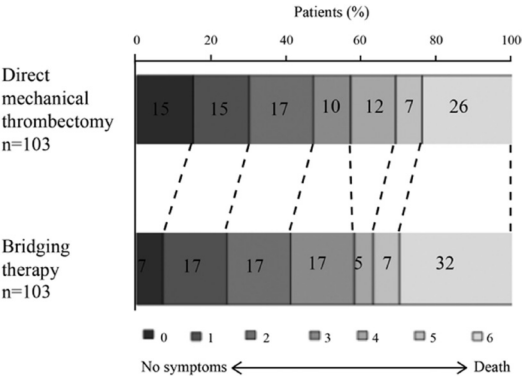
2017 publications: a selection

A new experimental research focus in neurodegeneration, e.g. motor neuron diseases / spinocerebellar ataxia (coordinated by S. Saxena) at ZEN and a clinical research focus on functional neurological disorders (coordinated by S. Aybek) were established. In 2017, two ERC consolidator grants started, in addition to a total of 18 ongoing SNSF grants (4 of which were received in 2017). In addition, one MD-PhD SNSF grant was awarded.

We published a total of 90 original papers, including the following 3 publications:

1. Bellwald S, et al. Direct mechanical intervention versus bridging therapy in stroke patients eligible for intravenous thrombolysis: a pooled analysis of two registries. *Stroke*. 2017 Dec;48(12):3282-3288. PMID: 29114095

In our matched pair analysis, we were not able to find a difference between ischaemic stroke patients treated with or without intravenous thrombolysis prior to mechanical thrombectomy. Based on these results, we planned the multi-centre, randomized controlled SWIFT DIRECT trial (patient recruitment started in October 2017, Co-PIs U. Fischer and J. Gralla).



2. Steimer A, et al. Predictive modeling of EEG time series for evaluating surgery targets in epilepsy patients. Hum Brain Mapp. 2017 May;38(5):2509-2531. PMID: 28205340

Predictive modelling of EEG signals recorded using intracranial electroencephalography (iEEG) was used to image epileptogenic brain tissue in patients with drug-resistant epilepsy. This complex and modern mathematical method allowed us to correctly predict seizure control following surgery in patients depending on the region of resection, thereby providing a new instrument for individualized and quantified diagnostics.

3. Ambrosius B, et al. Teriflunomide and monomethyl-fumarate target HIV-induced neuroinflammation and neurotoxicity. *J Neuroinflammation*. 2017 Mar 11;14(1):51. PMID: 28284222

Two drugs approved for neuroimmunological diseases inhibit HIV-associated monocyte/microglia activation, and the subsequent neurotoxicity. This means that therapeutic modulation of microglia activation may influence HIV neurotoxicity independent of viral replication. This probably also has implications for other neurodegenerative diseases in which microglia-induced neurotoxicity is of primary importance (e.g. Alzheimer's, multiple sclerosis disorders).



Advanced training

The Department of Neurology offers a high-quality advanced training programme for established neurologists, GPs and hospital doctors.

Current overview: www.neuro-bern.ch

How to contact us

Patients can be referred to us at any time between 08.00–17.00 h (with the exception of emergencies, which are accepted at any time).

Physicians can also refer their patients on-line or using an electronic form on www.neuro-bern.ch.

Emergencies Tel. 031 632 17 02
(contact with physician) (including stroke)

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