

DEVELOPMENT OF COMPLICATIONS ASSOCIATED WITH VASCULAR ACCESS FOR HOME PARENTERAL NUTRITION IN THE CZECH REPUBLIC



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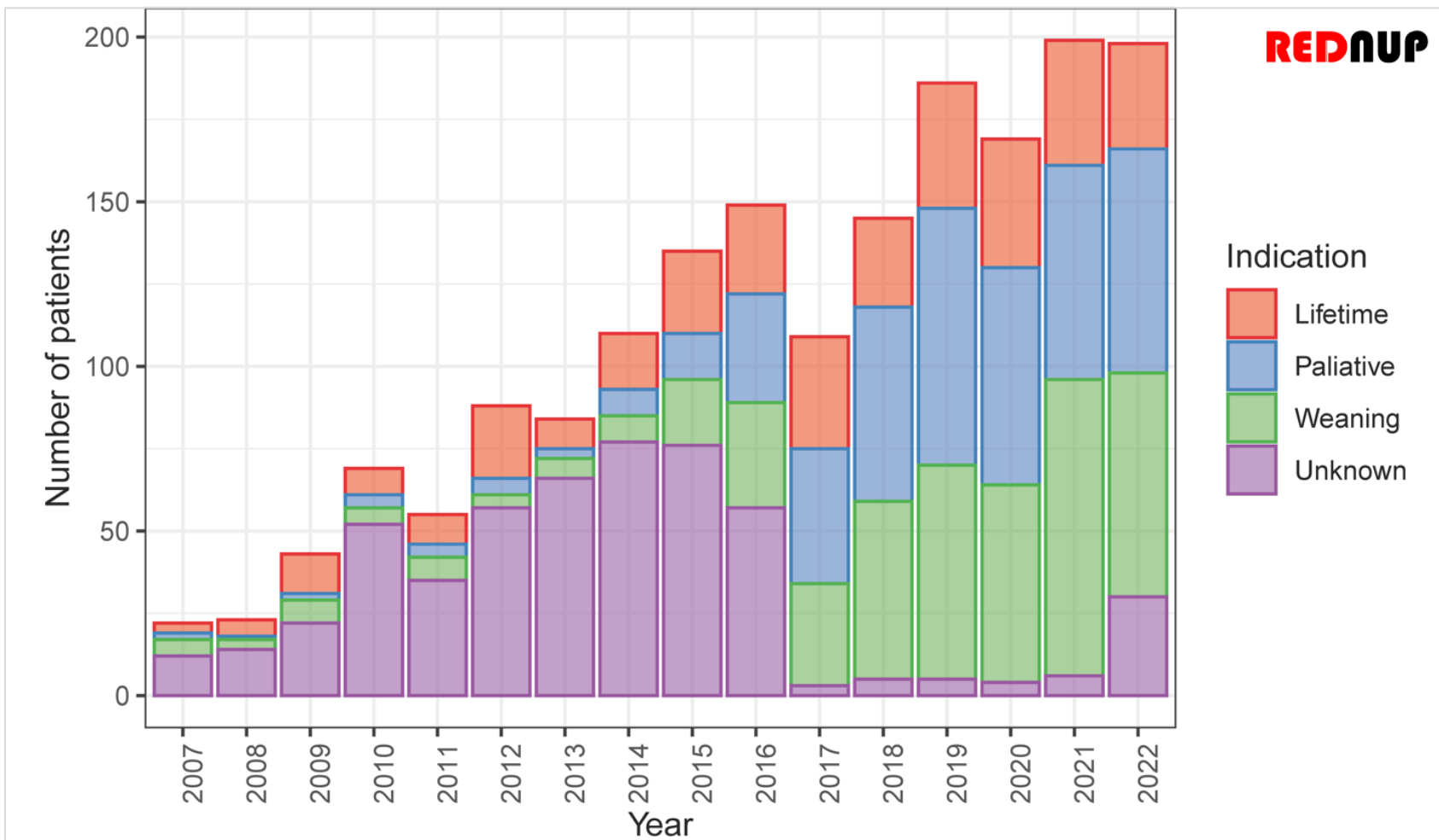
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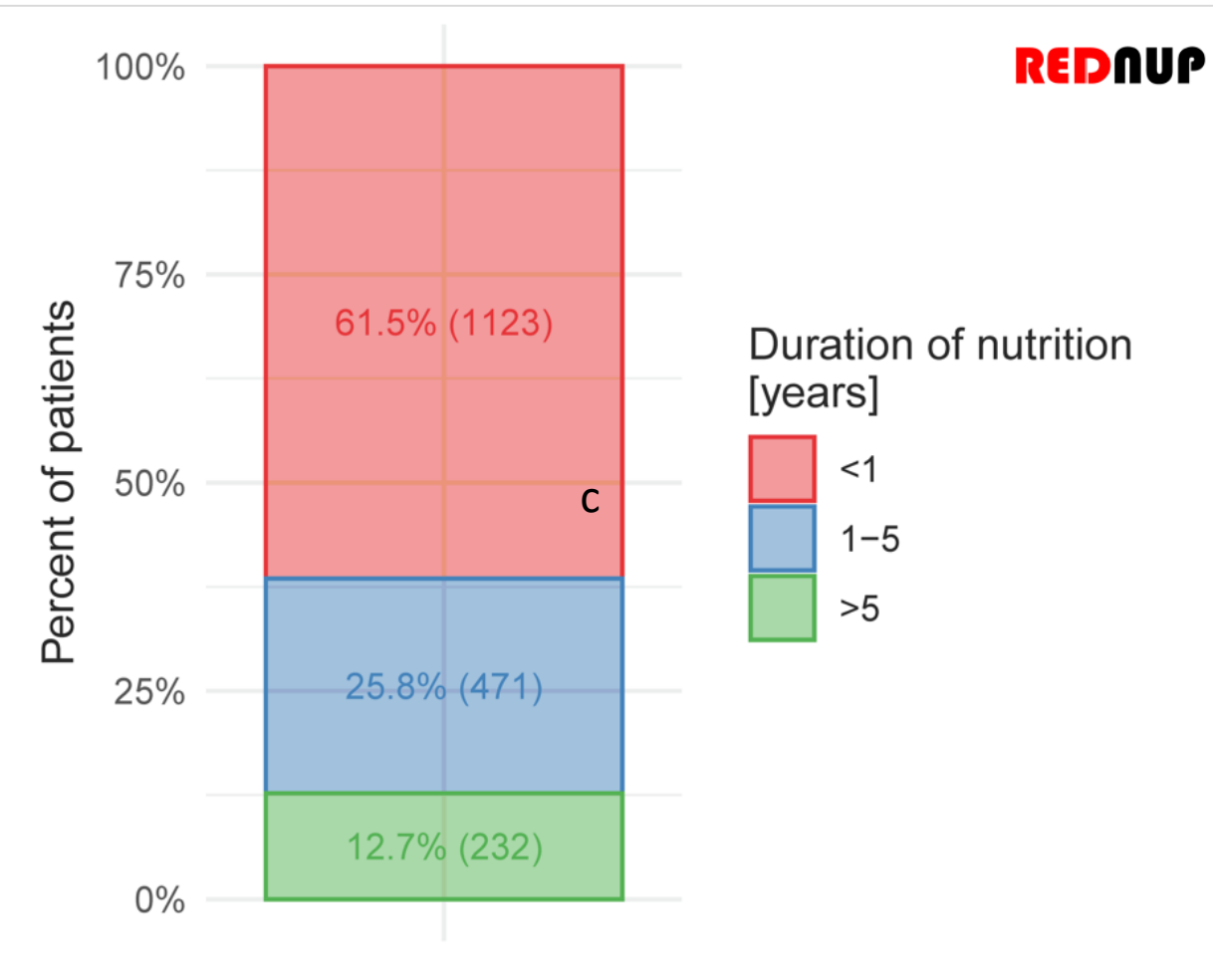
Home parenteral nutrition (HPN) is a life-saveng treatment for patients with chronic intestinal failure. It is a rare disease, an annual prevalence is of 5.932 and an incidence of 1.5 per 100,000 inhabitants of Czech Republic.

The most common causes are vascular, Crohn's disease and non-neoplastic post-surgical postoperative conditions. The most common syndrome is short bowel. An increase in palliative patients (20-40% of all) has been observed in the last decade.

60% of patients is weaned from HPN within 1 year, but 14% of patients remain dependent even after 5 years.



Annual incidence of patients according to prognostic classification.

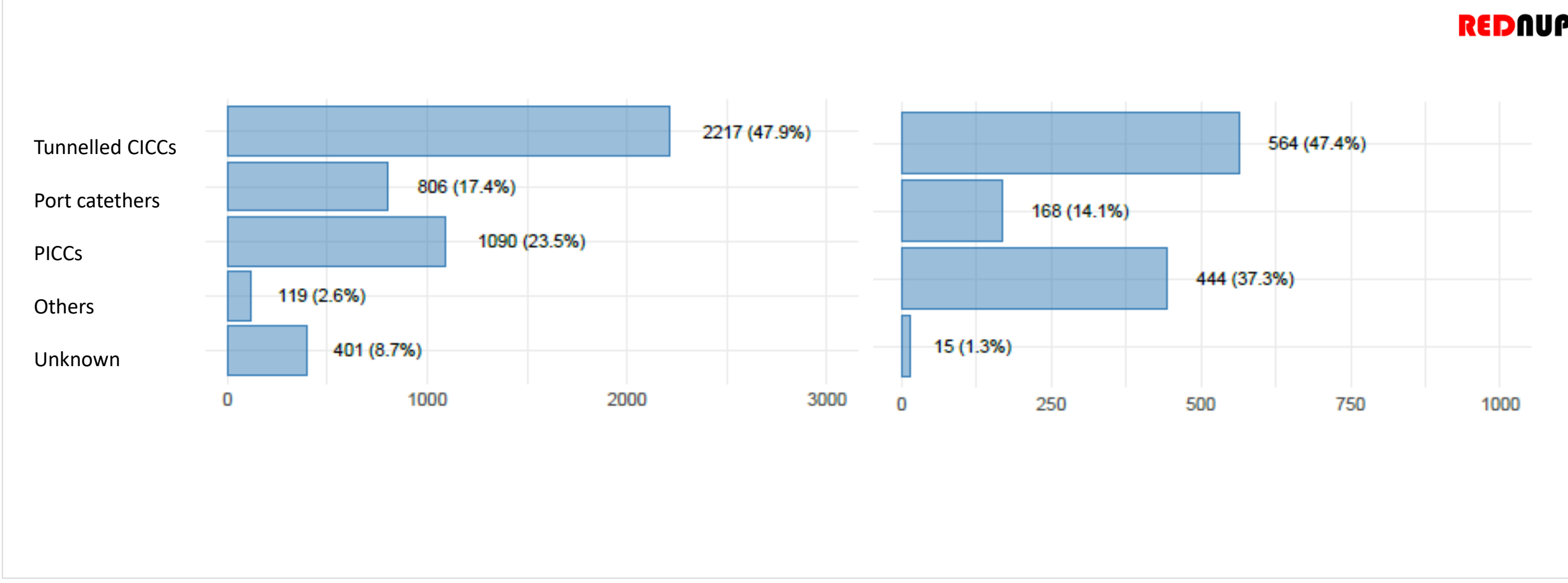


Duration of HPN administration.

The HPN program was started in the Czech Republic in the early 1990s. The Registry of Home Nutrition Support (REDNUP) was established in 1993 to collect data on adult and pediatric patients on HPN. Since its establishment, it has included almost 2,000 patients (95% adults, 5% children). About 200 patients come annually, about 500 remain active, which corresponds to approximately 150,000 catheter days/year.

HPN is currently provided in 28 centers (21 for adult, 7 for pediatric patients) in the Czech Republic

The most common type of vascular access for HPN is a tunneled central venous catheter (48% absolute, 47% newly introduced), 17% and 14% respectively are portcatheters. In the last decade, the use of PICCs has been increasing rapidly (24%, resp. 37%).

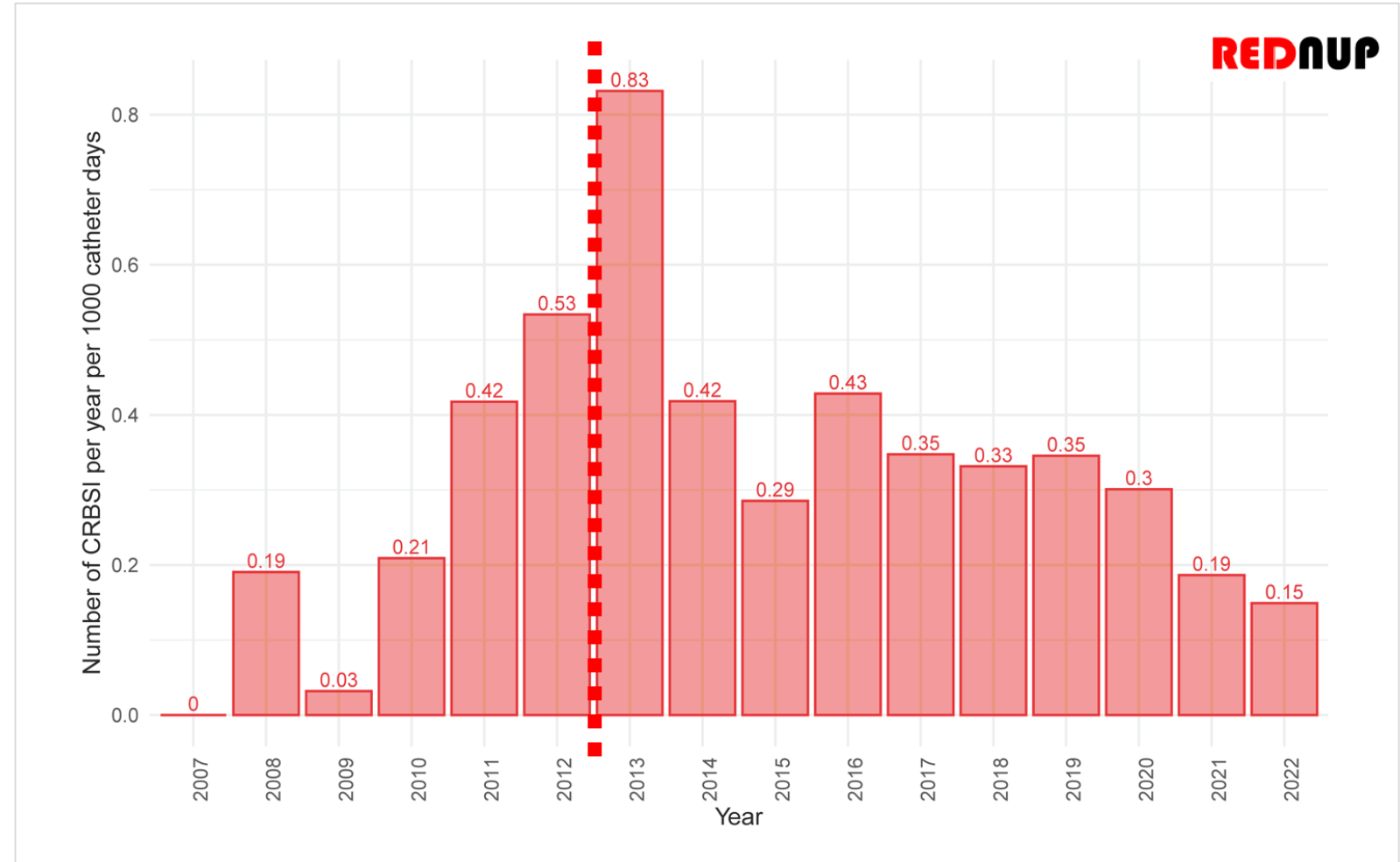


Type of vascular access (absolute v.s. newly introduced).

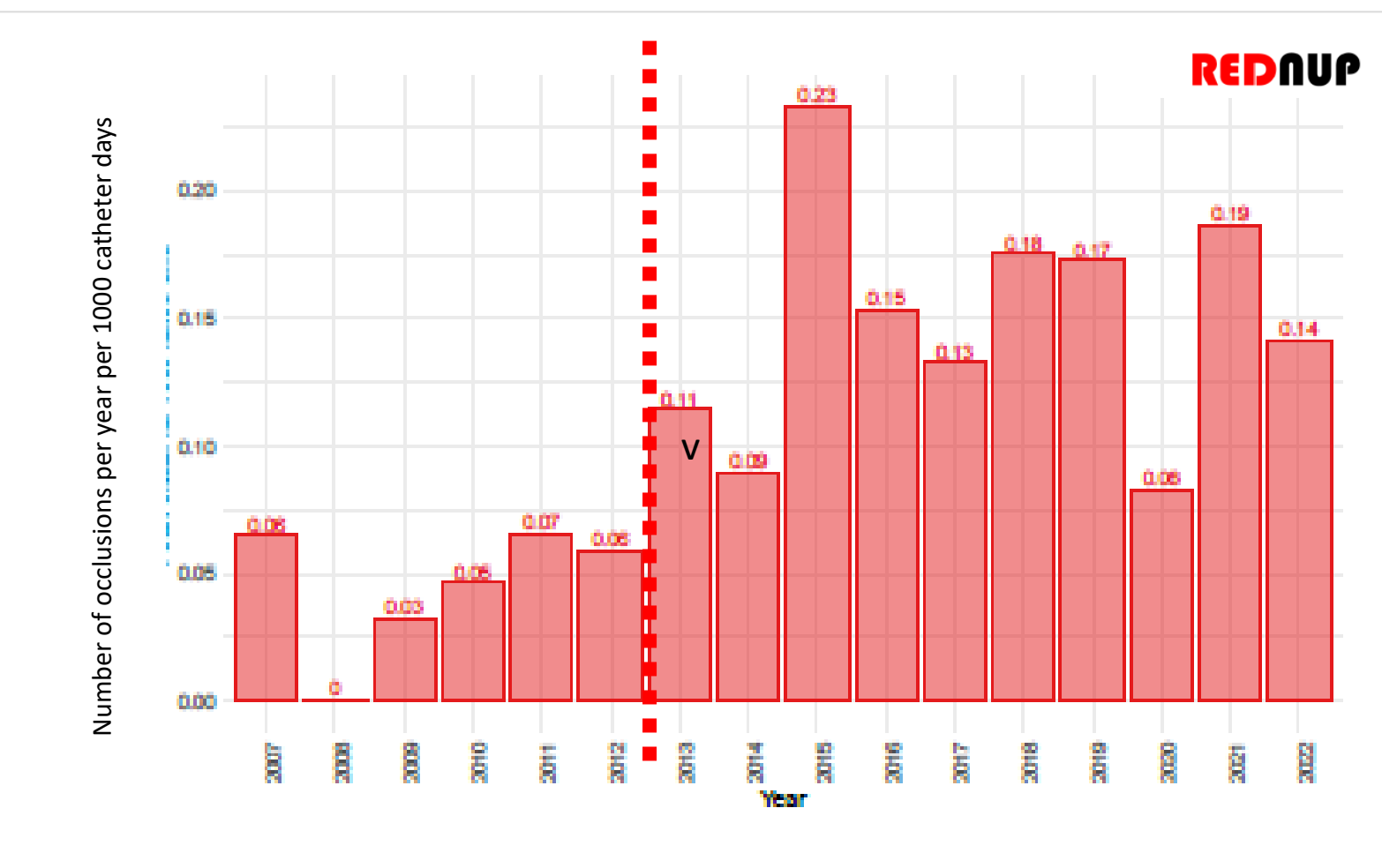
The occurrence of complications associated with vascular accessesfor HPN develops depending on the techniques of their introduction and everyday care Catheter related blood stream infection (CRBSI) is the most serious.

In the last decade (2012-2022), there was 3-fold decrease in their incidence (0.83 vs. 0.15/1000 catheter-days), which we attribute, among other things, to introduction of antiseptic locks (taurolidine) into routine practice.

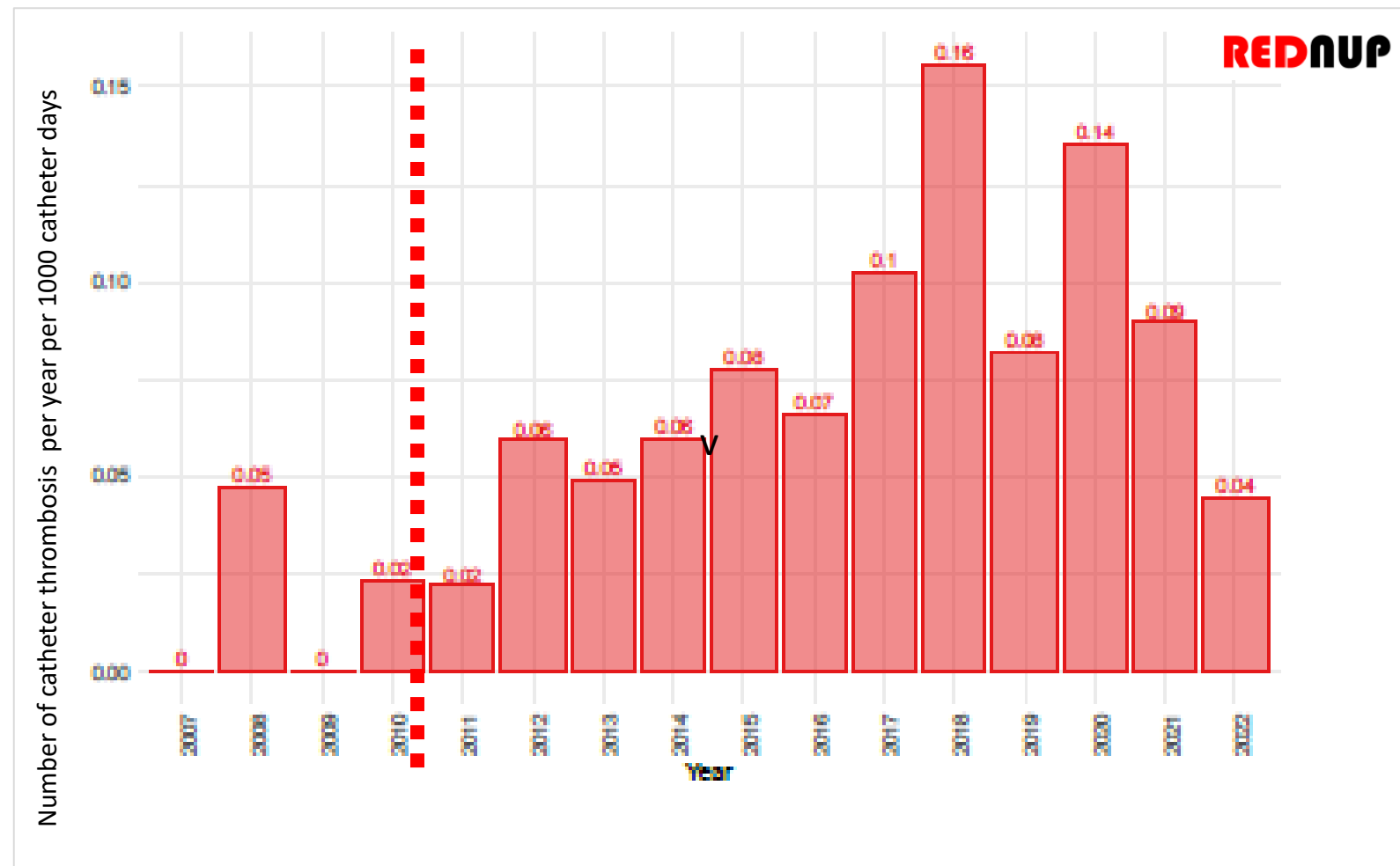
Antiseptic locks had no effect on the development of the occurrence of occlusions (0.11 vs. 0.15/1000 catheter-days), respectively thrombotic complications (0.05 vs. 0.04/1000 catheter days) in this period.



CRBSI incidence in years, in events per 1,000 catheter days.



Catheter occlusions incidence in years, in events per 1,000 catheter days.



Catheter thrombosis incidence in years, in events per 1,000 catheter days.

A rapid decrease in CRBSI is evident after the introduction of taurolidine in the Czech Republic in the form of antiseptic locks in patients with HPN. Since 2013, there has been a steady decrease in the incidence of catheter infections.

A good quality of access care is generally considered to be less than 1.1 catheter infections per 1000 days (which corresponds to 1 catheter infection per 2 years)



Conlusions: The prevention of most complications of vascular access for HPN is the provision of adequate care in the form of repeated education of patients, caregivers and medical personnel. The decisive factor is the correct implementation of catheter flushing. Antiseptic locks (taurolidine and now apparently also 4% ethylenediaminetetraacetic acid), demonstrably reducing the incidence of catheter infections. Other types of previously used plugs (heparin, ethanol 70%, antibiotics) are not beneficial in the prevention of CRBSI.

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