Regarding the Use of Epinephrine Auto-injectors in Remote Settings

To the Editor:

We read with interest the recent article by Hawkins et al,¹ entitled “Retrieval of additional epinephrine from auto-injectors.” The EpiPen and EpiPen Jr auto-injectors are distributed by Mylan Specialty L.P., formerly known as Dey Pharma. The company wishes to clarify a few statements in the article that are outdated or outside of product labeling approved by the US Food and Drug Administration (FDA).

EpiPen and EpiPen Jr are labeled for single use only,² and Mylan does not condone their use for multiple dosing. Consequently, the company does not sanction the procedures described in the article by Hawkins et al.¹ Mylan is aware that epinephrine may remain in the auto-injector after use owing to product over-fill to deliver the labeled doses of 0.3 mg for EpiPen or 0.15 mg for EpiPen Jr.²

Consistent with the approved product label, Mylan also recommends regular inspection of the epinephrine solution for visual changes.² If the solution contains particulate matter or takes on a pinkish or brown color, EpiPen or EpiPen Jr should be replaced immediately because efficacy may have been compromised. Patients should also remember that epinephrine is light sensitive, and EpiPen or EpiPen Jr should be stored in the carrier tube provided and at temperatures ranging from 20°C to 25°C (68°F to 77°F); excursions are permitted to 15°C to 30°C (59°F to 86°F).

For further information about the proper use and storage of EpiPen or EpiPen Jr auto-injectors, the FDA-approved product labeling is available at www.epipen.com.

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References

1. Hawkins SC, Weil C, Baty F, Fitzpatrick D, Rowell B. Retrieval of additional epinephrine from auto-injectors. *Wilderness Environ Med*. 2013;24:434–444.
2. EpiPen (epinephrine) auto-injector 0.3 mg and EpiPen Jr (epinephrine) auto-injector 0.15 mg [prescribing information]. Basking Ridge, NJ: Mylan Specialty L.P.; 2012.

A Novel Risk Factor for High Altitude Pulmonary Edema?

To the Editor:

I write to report the occurrence of high altitude pulmonary edema (HAPE) in a previously nonsusceptible woman after a total abdominal hysterectomy and bilateral salpingo-oophorectomy (TAH-BSO), suggesting another potential risk factor—ovarian hormone deficiency—that warrants further investigation as a factor affecting pulmonary vascular and ventilatory responses to hypoxia in humans and, potentially, the risk of HAPE.

A 44-year-old woman planned to climb Denali (6195 m) with a guided expedition in the spring of 2013. After spending 1 night at base camp (2195 m), she spent 2 nights at 2380 m, including establishing a supply cache at 3050 m, before ascending to 3350 m. On the first day at this elevation, she traveled to and from the supply cache at 3050 m without difficulty. That evening she awoke with “gurgling in her chest.” Upon evaluation by the guide the next morning, her oxygen saturation (SpO₂) was 86% to 87% at rest and 70% with ambulation. Pulse oximetry checks at rest the remainder of the day revealed SpO₂ of 82% to 86%. She noted difficulty walking slightly uphill in the evening. The next morning, she had severe dyspnea while ascending Motorcycle Hill, could not keep up with her team, and returned to camp, where she noted cough productive of blood-tinged sputum and had resting SpO₂ in the low to mid 70% range. She was evaluated by the Denali Ranger Patrol and was told she had crackles in both lungs (an official Patrol report is not available). After 6 hours at camp, she was escorted on foot to base camp. She noted difficulty keeping up with the group and moved slowly on the uphill section leading to base camp. She was flown by plane to Talkeetna (elevation 100 m) where her symptoms resolved. A subsequent evaluation in Seattle, Washington, which did not include chest radiography, revealed no cardiopulmonary abnormalities.

Before her climb, she had no respiratory, cardiac, or endocrine disorders. One month before the climb, she had a bicycle accident resulting in a concussion, separated shoulder, and lip laceration that became infected and required antibiotics. Chest radiography at that time was normal. In 2011, she underwent prophylactic TAH-BSO after being found to have the BRCA-2 mutation, and in 2012, underwent bilateral mastectomy for stage 0 breast cancer. Her only medication during the climb was gabapentin for hot flashes. She was not taking estrogen replacement therapy. She had no history of altitude illness during previous high altitude climbs, including