Recro Pharma, Inc.
Form 424B3
October 30, 2015

Filed Pursuant to Rule 424(b)(3)
Registration Statement No. 333-201841

Prospectus Supplement No. 18

to Prospectus dated February 26, 2015

2,500,000 Shares

Common Stock

This Prospectus Supplement No. 18 supplements and amends our prospectus dated February 26, 2015 (the Prospectus), relating to the sale, from time to time, of up to 2,500,000 shares of our common stock by Aspire Capital Fund, LLC.

This prospectus supplement is being filed to include the information set forth in our Current Report on Form 8-K filed with the Securities and Exchange Commission on October 30, 2015. This prospectus supplement should be read in conjunction with the Prospectus and any amendments or supplements thereto, which are to be delivered with this prospectus supplement, and is qualified by reference to the Prospectus, except to the extent that the information in this prospectus supplement updates or supersedes the information contained in the Prospectus, including any amendments or supplements thereto.

Our common stock trades on the NASDAQ Capital Market under the ticker symbol REPH. On October 29, 2015, the last reported sale price per share of our common stock was $9.79 per share.

Investing in our common stock involves risk. Please read carefully the section entitled Risk Factors beginning on page 8 of the Prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved these securities or determined if the Prospectus or this prospectus supplement is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this Prospectus Supplement No. 18 is October 30, 2015.

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 8 K

CURRENT REPORT

Pursuant to Section 13 OR 15 (d) of the

Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): October 30, 2015

Recro Pharma, Inc.

(Exact name of registrant as specified in its charter)

Pennsylvania	**001 36329**	**26 1523233**
(State or other jurisdiction of incorporation)	**(Commission File Number)**	**(I.R.S. Employer Identification No.)**

490 Lapp Road,

Malvern, Pennsylvania **19355**

(Address of principal executive offices) (Zip Code)
Registrant s telephone number, including area code: (484) 395 2470

Not Applicable

(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8 K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

¨ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

¨ Soliciting material pursuant to Rule 14a 12 under the Exchange Act (17 CFR 240.14a 12)

¨ Pre commencement communications pursuant to Rule 14d 2(b) under the Exchange Act (17 CFR 240.14d 2(b))

¨ Pre commencement communications pursuant to Rule 13e 4(c) under the Exchange Act (17 CFR 240.13e 4(c))

Item 8.01 Other Events.

On October 30, 2015, Recro Pharma, Inc. (the Company) updated information reflected in a slide presentation, which is attached as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated herein by reference. Representatives of the Company will use the updated presentation in various meetings with investors from time to time.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Document
99.1	Investor presentation of Recro Pharma, Inc., dated October 30, 2015.

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Date: October 30, 2015

Recro Pharma, Inc.

By: /s/ Gerri A. Henwood
Name: Gerri A. Henwood
Title: Chief Executive Officer

EXHIBIT INDEX

Exhibit No.	Document
99.1	Investor presentation of Recro Pharma, Inc., dated October 30, 2015.

October 2015 Relieving pain…….Improving lives Exhibit 99.1

Special Note Regarding Forward-Looking Statements This presentation includes forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. These statements, among other things, relate to our business strategy, goals and expectations concerning our product candidates, future operations, prospects, plans and objectives of management. The words "anticipate", "believe", "could", "estimate", "expect", "intend", "may", "plan", "predict", "project", "will" and similar terms and phrases are used to identify forward-looking statements in this presentation. Our operations involve risks and uncertainties, including the integration of our recently acquired assets, many of which are outside our control, and any one of which, or a combination of which, could materially affect our results of operations and whether the forward-looking statements ultimately prove to be correct. These forward-looking statements should be considered together with the risks and uncertainties that may affect our business and future results included in our filings with the Securities and Exchange Commission at www.sec.gov. These forward-looking statements are based on information currently available to us, and we assume no obligation to update any forward-looking statements except as required by applicable law.

Company Highlights Multiple non-opioid therapeutics in advanced clinical development for pain conditions IV/IM meloxicam Phase III ready – long acting, demonstrated efficacy in successful Phase II post operative pain trials Dex-IN – proprietary, intranasal therapeutic pursuing peri-procedural pain in further Phase II work Revenue and cash flow positive manufacturing & royalty business Experienced management team with significant development, regulatory and commercial experience

Experienced Management and Board Gerri Henwood – President and CEO Founded Auxilium Pharmaceuticals (AUXL, NASDAQ) and IBAH (former NASDAQ Co. – acquired 1998); GSK Randy Mack – SVP, Development Over 20 years of clinical development experience – Adolor, Auxilium, Abbott Labs and Harris Labs Board of Directors Wayne B. Weisman – Chairman SCP VitaLife Partners Winston J. Churchill SCP VitaLife Partners Gerri Henwood – CEO William L. Ashton Harrison Consulting Group; frmly Amgen Abraham Ludomirski, M.D. SCP VitaLife Partners Alfred Altomari CEO, Agile Therapeutics Michael Berelowitz, M.D. Former SVP, Specialty Care Business Unit, Pfizer Karen Flynn President-Pharmaceutical Packaging Systems, West Pharmaceutical Services, Inc.

Recent Transformative Transaction Acquired IV/IM meloxicam and manufacturing & royalty business from Alkermes $50M up-front cash payment plus working capital adjustment; meloxicam milestones and royalties Warrants issued to Alkermes and OrbiMed Non-dilutive up-front financed by loan from OrbiMed IV/IM meloxicam – long acting preferential COX-2 inhibitor for moderate to severe acute pain ready for Ph III Widely prescribed, approved oral chronic pain therapeutic Multiple Phase II studies successfully completed in acute pain models Dosing advantages over existing acute pain therapeutics, including long action Manufacturing, royalty and formulation business 87,000 sq. ft. facility (DEA licensed) manufactures 5 commercial products marketed by partners $75M in revenues and cashflow positive (2014)

Positive Dex-IN Ph II Results (REC-14-013 – Post Op Day 1 Dosing) Randomized, placebo controlled Phase II bunionectomy study (168 patients) Randomized, placebo controlled study 50 mcg of Dex-IN or placebo every 6 hours Primary endpoint – SPID48 (p=0.0214) Oral opioid rescue therapy allowed 6 patients discontinued for lack of efficacy (3 in each treatment group) and 1 patient due to serious adverse event of hypotension Most common adverse events observed in the study were: blood pressure decrease / hypotension nausea (similar incidences to placebo) nasal discomfort and headache Adverse event of bradycardia was reported in 3 subjects in the Dex-IN treatment group

Clinical Stage Pipeline Product PC I II III Rights Meloxicam WW IV formulation Acute post operative pain Phase III IM formulation Acute pain Dexmedetomidine (“Dex”) WW, exc. Europe, Turkey, CIS Dex-IN (intranasal) Peri-procedural pain Phase II Cancer breakthrough pain Dex-SL (sublingual) Fadolmidine (“Fado”) WW, exc. Europe, Turkey, CIS Intrathecal Topical

Post Op Pain Market Underserved $5.9 billion market(1) Predominantly opioid use Significant side effects / issues associated with opioids Dearth of non-opioid drugs in development Inpatient procedures Total procedures (2009) 47.9M Addressable >25M Ambulatory procedures Total procedures (2006) 53.3M Addressable >25M Note: Addressable includes procedures expected to utilize pain medication. Source: National Center for Health Statistics and management estimates. (1) GBI Research, 2010 sales.

Limited Pain Relief Options for Patients Note: Pain severity based upon market research / physician feedback Pain Severity Class Compounds Advantages Disadvantages Mild Acetaminophen Antipyretic properties; Oral; no opioid AEs Only effective for mild pain; short acting NSAIDs Ketorolac, ibuprofen, aspirin Mild to moderate analgesia; oral; no opioid AEs Bleeding risk; GI and renal complications; short acting Moderate Sodium channel blockers Bupivacaine, lidocaine Use directly at pain site; mostly peri-operative Limited duration of action; some are concerned about local tissue impact Alpha 2 agonists Dexmedetomidine (Recro Pharma) Good pain relief; anxiolytic properties; no respiratory depression, impaired GI or addictive properties In development – potential for first in class to be approved for peri-procedural pain Moderate to Severe Long-acting preferential COX-2 IV/IM meloxicam (Recro Pharma) Long acting; fast onset, high pain relief, and less constipation Bleeding risk; GI and renal complications Opioids Morphine, hydrocodone, oxycodone, fentanyl Good pain relief Respiratory depression, impaired GI motility after even one dose; frequent nausea and vomiting; abuse/addiction potential

IV/IM Meloxicam

IV/IM Meloxicam Overview FDA approved, oral preferential COX-2 inhibitor used in a wide variety of indications Proprietary long acting injectable form for moderate to severe acute pain Incorporates Alkermes' NanoCrystalTM technology Phase III ready – multiple Phase II studies completed on IV and a Phase I on IM Positive Ph II hysterectomy and dental pain studies with demonstrated efficacy Successful end of Phase II meeting with the FDA IP issued through 2022 and additional IP could extend protection through 2030 NanoCrystal® is a registered trademark of Alkermes plc.

Favorable Dosing Profile Attribute Meloxicam Ketorolac Caldolor (ibuprofen) Ofirmev (APAP) Route IV/IM IV/IM IV IV Onset of pain relief < 10 min 30 min N/A N/A Time to peak analgesic effect 40 min 1-2 hrs N/A N/A Duration of pain relief 18-24 hrs 4-6 hrs 4-6 hrs 4-6 hrs Admin. IV bolus / pre-filled syringe (later) Ready to use IV bolus (15 sec) Dilution required, 30 min infusion Ready to use, 15 min infusion

IV/IM Meloxicam Clinical Overview Elan/ALKS conducted 5 IV and 1 IM clinical trials Two Phase 1 IV PK & Safety trials One Phase 1 IM PK & Safety trial Three Phase 2 IV efficacy trials in various acute pain models Good safety & tolerability across large dose range IV/IM Demonstrated efficacy using various measures in multiple pain models

Multiple Successful IV Phase 2 Trials Elan/ALKS have conducted 5 IV and 1 IM clinical trials Trial Design Outcome Phase II Study N1539-02 Acute pain following dental surgery (N = 230) Statistically significant differences for all doses compared to placebo were seen in SPID24, pain relief and onset of pain relief Phase II Study N1539-04 Acute pain following open abdominal hysterectomy surgery (N = 486) Statistically significant differences for all doses compared to placebo were seen in multiple efficacy analyses, including SPID24. meloxicam 30 mg and 60 mg produced the greatest response with no difference between doses Phase II Study N1539-05 Acute pain following laparoscopic abdominal surgery (N =50) Study stopped early (planned N = 250) for business reasons. However, statistically significant differences in SPID48 observed for 30mg QD dose despite small sample size

Phase II Abdominal Hysterectomy Study Multicenter, single-dose, randomized, double-blind, placebo- & active-controlled study in Eastern Europe In double-blind period, single doses of: Placebo IV Morphine (10-15 mg) Meloxicam 5 mg, 7.5 mg, 15 mg, 30 mg, 60 mg After 24 hours, open-label Meloxicam was available Standard analgesia study design Pain Intensity assessments (SPID24 = Primary Endpoint) Pain Relief Rescue mediation Time to onset

Robust Efficacy (Abdominal Hysterectomy Trial – IV Meloxicam) *** $p < 0.001$ vs. Placebo *** *** *** *** *** ***

Confirmed Efficacy in Multiple Studies Summary of Pain Intensity Differences (SPID) *** p < 0.001 vs. Placebo *** *** *** *** Dental Pain Study p = 0.0682 p = 0.0392 Abdominal Laparoscopic Pain Study

Single 30 mg Dose Performance over 24 hrs (Abdominal Hysterectomy Trial – IV Meloxicam) Baseline Pain Level 60

Well Tolerated (Abdominal Hysterectomy Trial – IV Meloxicam) **Reported in ≥ 3% of Subjects in any group and greater than Placebo Meloxicam Placebo n=64 Morphine n=62 5 mg n=60 7.5 mg n=91 15 mg n=60 30 mg n=60 60 mg n=89 Anemia 3.1 4.8 3.3 13.2 3.3 1.7 10.1 Anemia Postoperative - 1.6 - - - 3.3 - Constipation - 4.8 5.0 1.1 1.7 - - Flatulence - 4.8 1.7 1.1 3.3 - - Hypokalaemia - 3.2 1.7 1.1 - 1.7 - Insomnia 4.7 8.1 10.0 4.4 5.0 5.0 4.5 Ketonuria 7.8 9.7 6.7 9.9 15 10 10.1 Leukocytosis - - 1.7 - - 3.3 - Pyrexia 1.6 3.2 3.3 2.2 - - - Sinus Tachycardia - - 3.3 - - - 1.1 Percent of Subjects Reporting an Adverse Event **

Next Steps for IV Meloxicam Production of a clinical supply batch Conduct Phase III Pivotal Study in hard and soft tissue models Additional safety studies to meet adequate exposures / special populations Total across above studies: 1,300 patients expected to be enrolled

Dexmedetomidine (“Dex”)

Dex Has Demonstrated Analgesia & Safety Alpha 2 agonist (non-opioid) Injectable form (Precedex) marketed by Hospira in US as sedative Multiple studies demonstrating analgesia of alpha 2 agonists Intranasal formulation in clinical development for peri-procedural pain In-licensed non-IV rights from Orion Worldwide rights except Europe, Turkey, and CIS Multiple studies demonstrate Dex pain relief and safety profile Including our completed placebo controlled trials Expect strong IP position Pending IP coverage could run through 2030 Expect to file 505(b)(2) NDA after completion of Ph III

Dex Efficacy and Safety in Multiple Studies Beneficial effects Source Approved sedative and safe profile NDA filing / pivotal trials - Abbott/Hospira, Orion Morphine sparing NDA studies plus Literature Analgesia by IV route Chan, 2010; Grosu, 2010; Lin, 2009, Arain, 2010 Demonstration of pain relief (VAS) Placebo controlled bunionectomy trial; L. Webster, MD (Utah) CLBP study Positive PK/PD plasma levels demonstrating analgesic potential Clinical trials run by Recro Relieves morphine “Max” (‘hyperalgesia’) University of Minnesota; M. Belgrade, MD

Significant Advantages Over Opioids Dex Fast-acting Opioids Non-opioid (Not controlled substance) Opioid - DEA scheduled product No habituation effects Addictive Does not cause respiratory depression Respiratory depression Not associated with constipation, nausea, or vomiting Unwanted side-effects of constipation, nausea and vomiting Enhances morphine effectiveness without morphine dose increase Additive effect requires higher dose Anxiolytic properties Not anxiolytic Effective Analgesic Effective Analgesic

Dex Has Been Well Studied by Recro Evaluated proprietary formulations of Dex in 10 trials Trial Form Design Outcome REC-14-013 Dex-IN Acute pain following bunionectomy surgery (n=168) Statistically significant difference of SPID48 between 50 mcg of Dex-IN vs. placebo (p=0.0214) REC-13-012 Dex-IN Acute pain following bunionectomy surgery (n=85 evaluable) Within subset of patients (n=42), with baseline pain intensity of 6 or below, there was a trend towards analgesia in 50 mcg and reduced opioid use vs placebo REC-11-010 Dex-IN Chronic lower back pain POC study (n=24) Statistically significant pain relief within 30 minutes demonstrated in placebo controlled trial – single use device REC-09-003 Dex-SL Chronic lower back pain POC study (n=21) Statistically significant reduction in pain intensity demonstrated in placebo controlled trial

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Study REC-14-013 (Adverse Events – ≥3 in Dex-IN Group) Placebo DEX-IN 50 µg Adverse Event (N = 84) (N =84) BP Decreased 3 (3.6%) 22 (26.2%) Nausea 14 (16.7%) 13 (15.5%) Nasal Discomfort 2 (2.4%) 7 (8.3%) Headache 4 (4.8%) 6 (7.1%) Vomiting 6 (7.1%) 4 (4.8%) Nasal Dryness 3 (3.6%) 4 (4.8%) Nasal Congestion 1 (1.2%) 4 (4.8%) Nasal Obstruction 2 (2.4%) 3 (3.6%) Bradycardia 0 3 (3.6%) Dizziness 1 (1.2%) 3 (3.6%) Hypotension 0 3 (3.6%) If IV fluid given and no symptoms present, “BP Decrease” recorded as AE No medication given to any patient with BP or HR change All nasal related AEs were rated as mild, except one case of nasal congestion rated as moderate

Clinical Pipeline Intellectual Property IV/IM meloxicam – formulation IP through 2022 Additional IP filed could run to 2030 Dex applications for methods for treating/preventing pain through intranasal and sublingual formulations without significant sedation Fado IP in-licensed from Orion Composition of matter Method of administration for analgesia Treatment and prevention of hypotension and shock Pro-Drug Regulatory exclusivity 505(b)(2) – 3 years (Meloxicam, Dex-IN, Dex-SL) 505(b)(1) – NCE, 5 years (Fado)

Fadolmidine (“Fado”)

Fado Effective in Phase II for Pain Relief Alpha 2 agonist more potent at the alpha 2c receptor than Dex >20 fold less potent at the alpha 1b receptor than clonidine Fado has demonstrated analgesia in multiple animal models Positive Phase II analgesia study in bunionectomy patients Intrathecal route of administration WW rights to all human uses except Europe, Turkey and CIS NCE patent w/ expected extension to 2021

Corporate Overview

US Based Manufacturing Facility

Manufacturing & Royalty Overview Manufacturing facility 87,000 sq. ft. solid oral dosage manufacturing cGMP DEA licensed ~175 employees Service capabilities Formulation, process development and optimization Process scale-up Clinical supply and validation Commercial supply Ritalin LA Once daily ADHD treatment marketed by Novartis Focalin XR ADHD treatment marketed by Novartis Verelan / verapamil CV/High blood pressure treatment marketed by Actavis and UCB Zohydro ER Extended release hydrocodone marketed by Pernix Launched in 2014 Abuse deterrent form launched

Strong Historical Manufacturing Performance Carve-out financials Zohydro ER – abuse deterrent form launched Additional capacity for new product opportunities Positive cashflow expected to cover all debt service obligations and excess cashflows to repay loan principal *EBITDA is a non-GAAP financial metric. Please see slide 38 for additional information including a reconciliation of Net Income to EBITDA. (millions) 12 months ended Dec. 31, 2014 (audited) Revenues $75.2 EBITDA* $29.2

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Supplemental Financial Information Key Financial Information - Consolidated June 30, 2015 Assets Cash and cash equivalents $15,687 Other assets $26,723 Total Current Assets $42,410 Total Revenue $18,660 Total operating expenses $18,287 Operating income $373 Net loss ($1,311) *In July 2015, Recro Pharma announced the closing of a $16.0 million private common stock placement. The Company issued 1,379,311 shares of common stock in the placement, resulting in net proceeds of $14.9 million.