CHIMERIX

DISCOVERING, DEVELOPING, AND COMMERCIALIZING NOVEL MEDICINES THAT IMPROVE OUTCOMES FOR IMMUNOCOMPROMISED PATIENTS

Year-End Earnings and Update Call
March 2, 2017

Forward-Looking Statements

These slides and the accompanying oral presentation contain forward-looking statements and information within the meaning of the Private Securities Litigation Reform Act of 1995 that are subject to risks, uncertainties and other factors, including the possibility that there may not be a viable continued development path for brincidofovir, that any clinical trials we may conduct will not demonstrate adequate efficacy and safety of brincidofovir, that the FDA and other regulatory authorities may not approve brincidofovir or brincidofovir-based regimens, and that marketing approvals, if granted, may have significant limitations on their use. As a result, brincidofovir may never be successfully commercialized. In addition, Chimerix may be unable to file for regulatory approval for brincidofovir with other regulatory authorities. These risks, uncertainties and other factors could cause actual results to differ materially from those referred to in the forward-looking statements. The reader is cautioned not to rely on these forward-looking statements. These and other risks are described in detail in Chimerix's Annual Report on Form 10-K for the year ended December 31, 2016 and other documents subsequently filed with or furnished to the U.S. Securities and Exchange Commission. All forward-looking statements are based on information currently available to Chimerix, and Chimerix assumes no obligation to update any such forward-looking statements.

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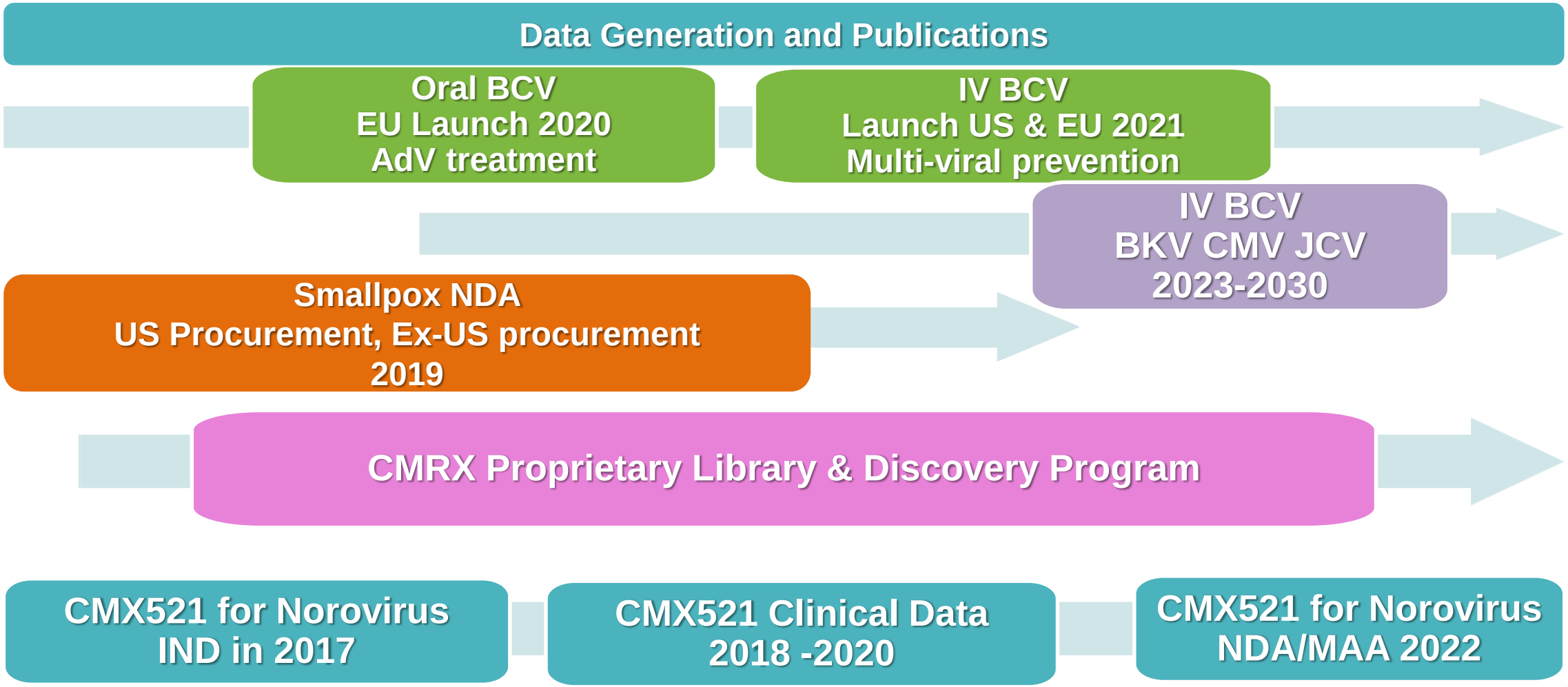
Value Drivers for Chimerix



All timelines are estimated

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Chimerix Pipeline

	Program	Discovery	Pre-clinical	Phase 1	Phase 2	Phase 3	Anticipated Approval
Short-course Oral BCV	**AdV Pediatric Treatment**	Study 999 in EU (+/- US) to start in 2H 2017					**2020**
	Smallpox	Data from second animal model in 2017					**2019**
IV BCV	**Multiviral Prevention**	Data from MAD in 2017		Ph 2/3 in Peds HCT			**2021**
	BKV Treatment	Initiate Phase 2b late 2017		Ph 2/3 in Kidney Tx			**2023**
	CMV Treatment	Initiate Phase 2b late 2017					
CMX521	**Norovirus**	IND 2H 2017		FTIH 4Q2017	POC Challenge Study		**2022**
CMX157	**HBV Treatment**	*Licensed to ContraVir					
Business Development		Ongoing Diligence					

All timelines are estimated
* Per ContraVir's website

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2016 Brincidofovir Learnings

1. Gastrointestinal toxicity of oral brinci was related to GI over exposure and duration
2. High brinci plasma exposures delivered via the intravenous route in animal studies did not result in the gut injury observed with oral brinci dosing
3. IV brinci provides higher drug levels in plasma and difficult-to-reach compartments in animals – allows exploration of treatment indications not possible with oral dosing
4. Oral brinci was associated with rapid AdV clearance in AdVise
5. Rapid clearance of AdV was associated with a decrease in overall and AdV-associated mortality in AdVise

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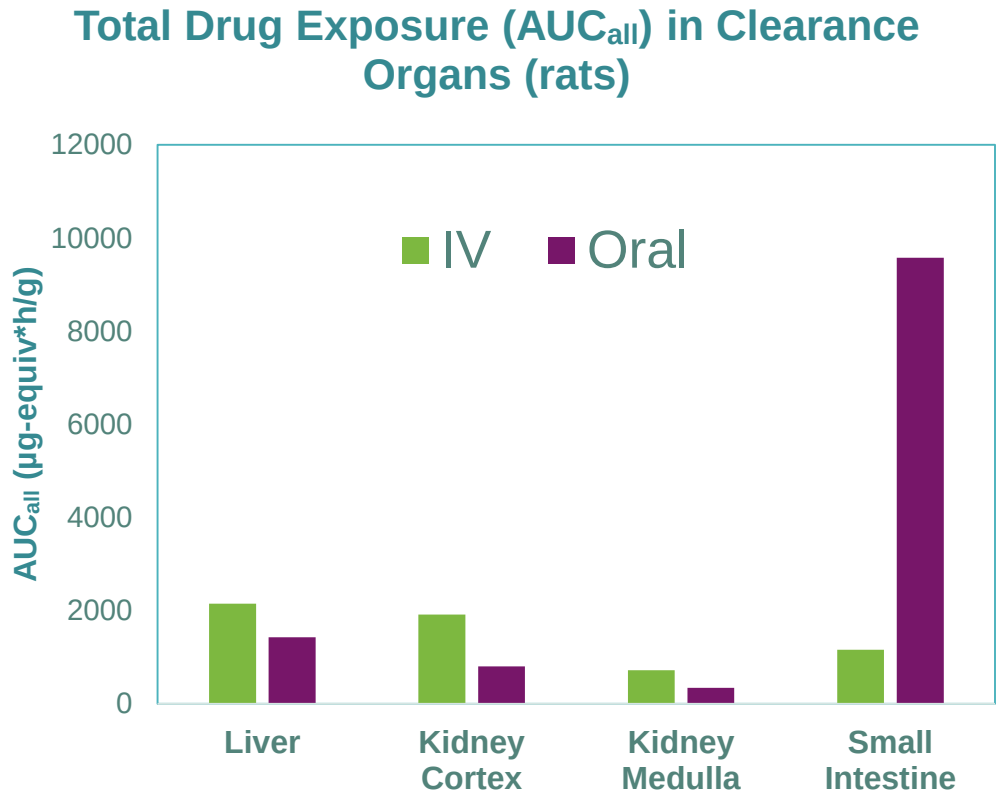
Key Learning #1: Oral BCV GI Tox is Related to GI Exposure and Duration



- **Oral BCV** in rats resulted in significantly **higher exposures in the intestine** vs other organs, *providing explanation for GI toxicity*
- In rats, **IV BCV delivered comparable drug exposure to key organs**, *including the liver, kidney, and small intestine*
- IV BCV without GI tox could support longer duration of therapy

IV BCV expected to prevent "over-exposure" of gut

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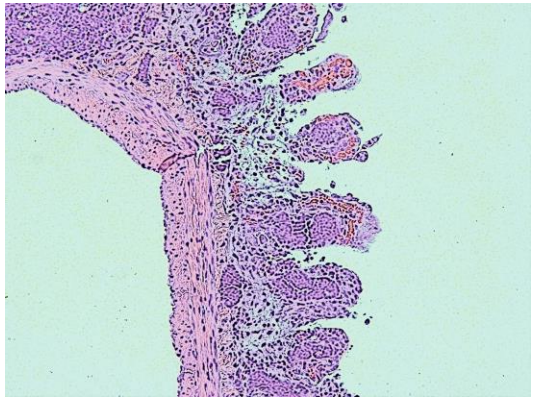
Learning #2: IV BCV Delivers High Exposures without GI Tox

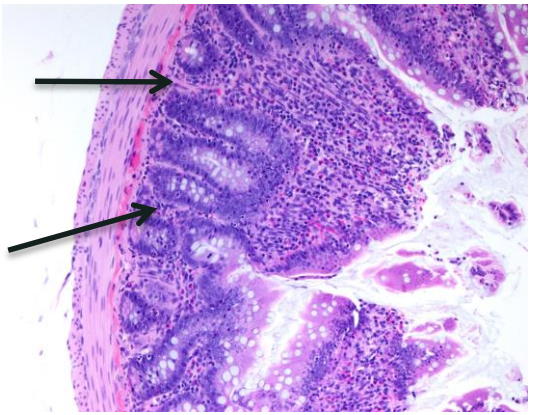
28-day rat studies of IV BCV:

- **No in-life clinical findings** at highest dose: IV BCV 15 mg/kg
- **No** animals had diarrhea
- **All** animals gained expected weight during study
- **No** liver enzymes elevations
- **Minimal GI findings** in intestines at final pathology



Rat intestine after oral BCV

- Significant loss of epithelium in intestinal villi



Rat intestine after IV BCV

- Minimal single-cell effects noted for IV BCV

IV BCV for 28 days avoided gut injury observed with oral BCV

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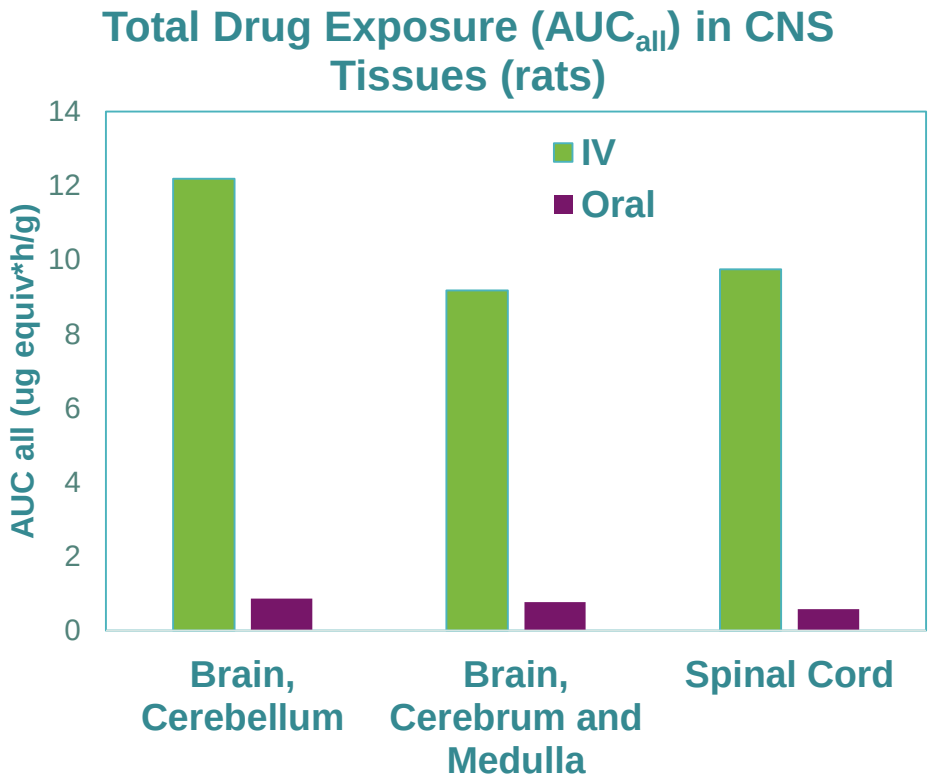
Learning #3: IV BCV Raises the Exposure Ceiling, Delivers More Drug to Plasma and to Difficult-to-Reach Compartments



- IV BCV provides higher exposures which may be needed for some treatment indications (BK nephropathy, CMV disease)
- Higher CNS exposures with IV BCV could support testing for viral infections in the brain, e.g.:
  - Herpes encephalitis
  - HHV-6 encephalitis
  - JC virus/PML in transplant recipients or patients with Multiple Sclerosis

IV BCV enables exploration of treatment indications not possible with oral BCV

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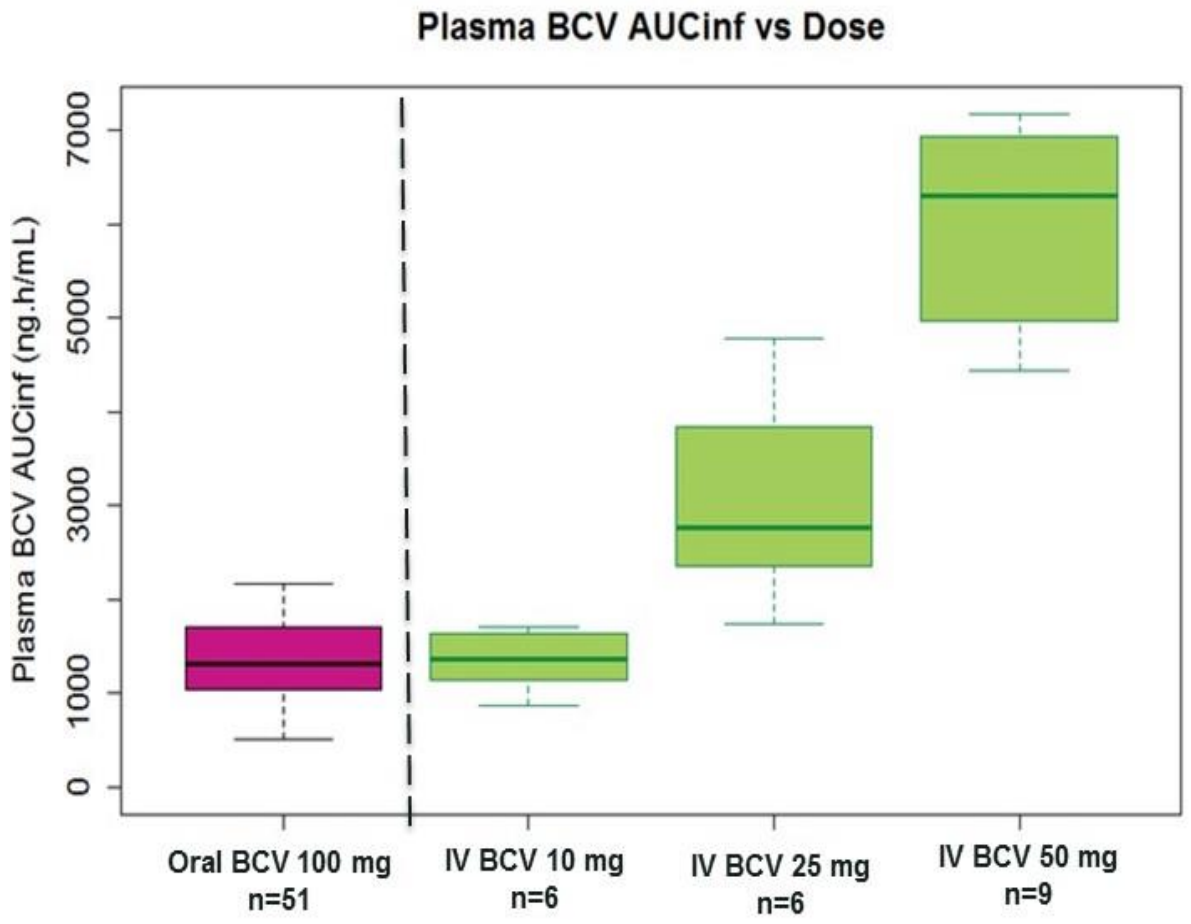
Ongoing IV BCV Single Ascending Dose Study: Drug Levels

- IV BCV/placebo 10 mg, 25 mg, & 50 mg cohorts have completed dosing in healthy subjects
- IV BCV 10 mg provides similar exposure as oral BCV 100 mg
- Drug exposure was linear as dose was increased
- IV BCV 50 mg provided plasma drug exposures higher than achieved with oral BCV, and at or above the range of exposures targeted for treatment indications such as CMV and BK nephropathy



Preliminary Data

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IV BCV Single Ascending Dose: Preliminary Safety & Tolerability

- Cohorts 1-3 IV BCV/placebo doses have been generally safe and well tolerated:
  - Grade 1-2 lab abnormalities in Cohorts 1, 2 & 3, none clinically significant
    - NO myelotoxicity or nephrotoxicity
  - Study-drug related AEs were mild, and limited to Cohort 3
    - 3 subjects with IV site bruising/discomfort
    - 2 subjects with headache (resolved spontaneously)
    - 1 subject with loose stools (resolved spontaneously)

Observed GI tolerability of single dose IV BCV thru Cohort 3 in humans is improved compared to single dose oral BCV

Preliminary Data

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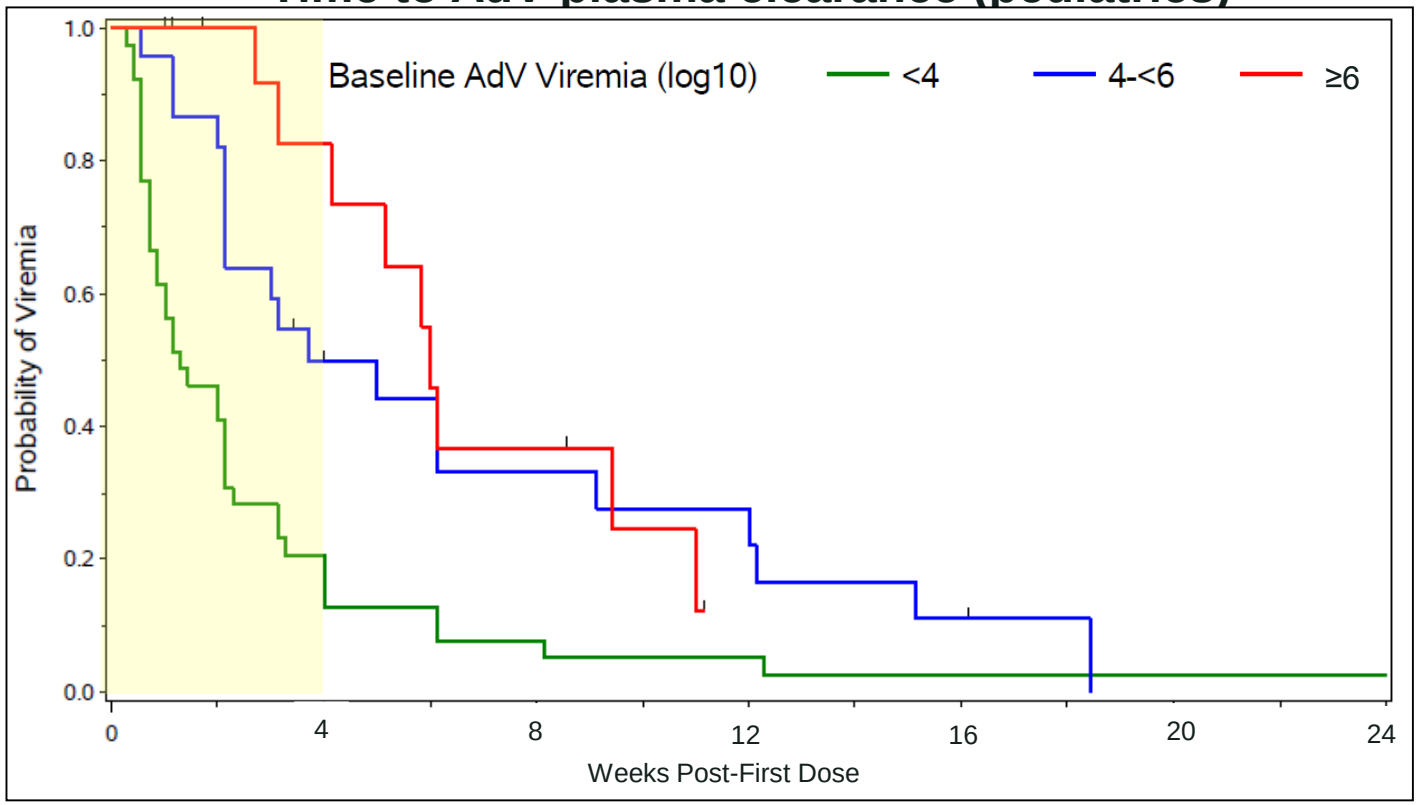
Learning #4: Early Intervention Resulted in Undetectable AdV Viral Loads in the First 4 Weeks of Dosing in AdVise

Time to AdV plasma clearance (pediatrics)



- Peds pts with lower AdV viral loads at baseline (<10,000 or 4 $\log_{10}$ c/mL) cleared within a median 8 days of BCV
- Peds pts with AdV plasma <5 $\log_{10}$ (<100,000 c/mL): 72% cleared within 4 weeks
- Study 999 will focus on sites with regular screening for AdV who are likely to detect and treat AdV viremia while viral loads are ~5 $\log_{10}$ or lower

Short-course oral BCV should result in clearance of AdV in majority of patients

Prasad V et al. BMT Tandem, Orlando FL, February 2017

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Learning #5: Virologic Response Is Associated with a Decrease in Overall and AdV-Associated Mortality in AdVise

Patients with Disseminated AdV Disease		Mortality		AdV-Associated Mortality
Pediatric	Responder*	7/28 (25%)	p=0.031	1/28 (4%)
	Non-responder	7/13 (54%)		2/13 (15%)
Adult	Responder*	5/10 (50%)	p=0.0004	0/10 (0%)
	Non-responder	13/14 (93%)		10/14 (71%)

* Responders are subjects with baseline AdV viremia still on study at week 6 who had undetectable plasma AdV at week 6; non-responders are subjects who did not achieve the specified cut-off

Undetectable AdV was associated with nearly double the overall survival

Prasad V et al. BMT Tandem, Orlando FL, February 2017

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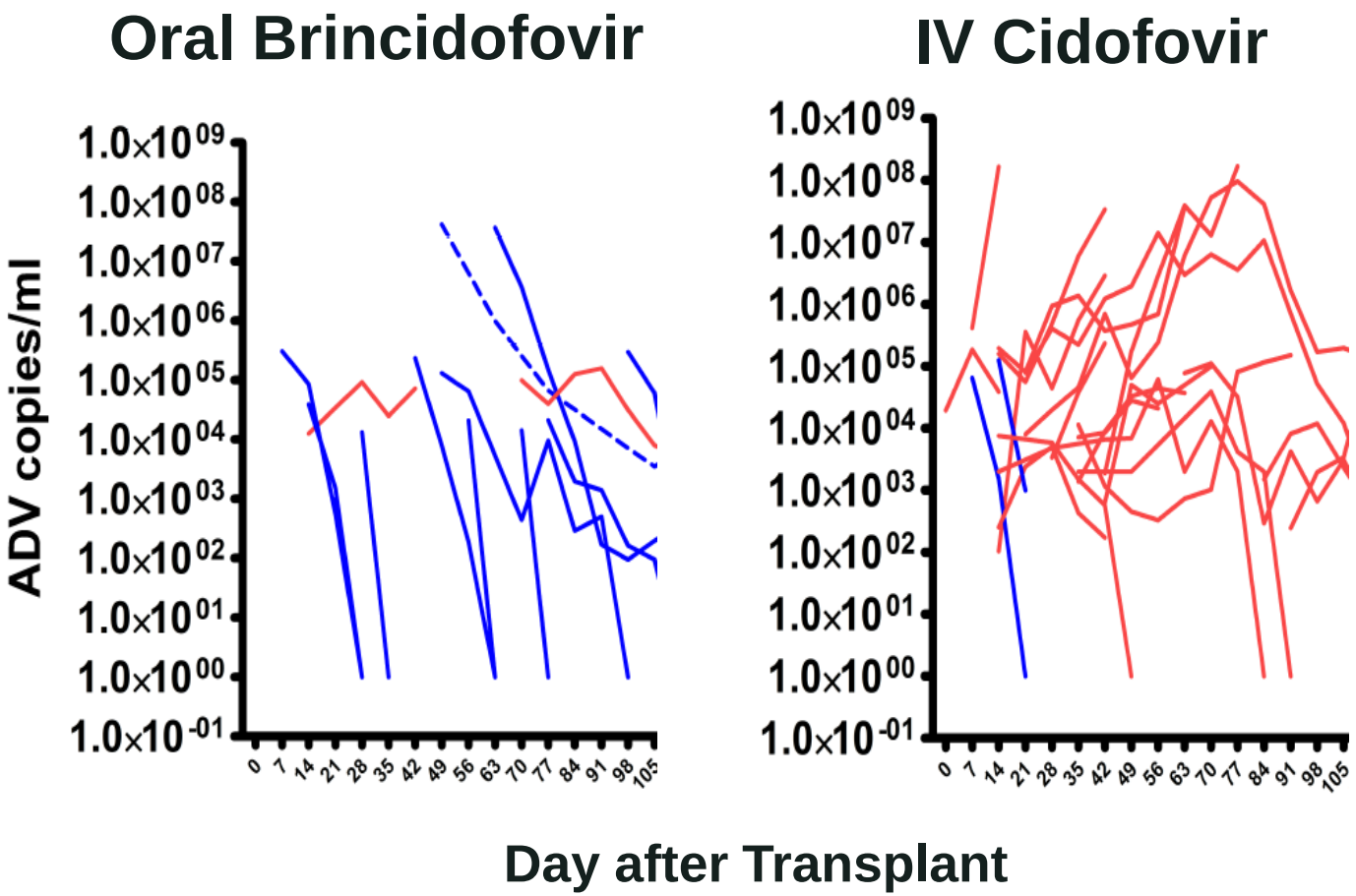
Greater Viral Load Reduction for Brinci vs Cidofovir in First 100 Days Post-Transplant from UK Consortium



- AdV 2 $\log_{10}$ reduction in 2 weeks (solid blue lines) observed with BCV in 13/18 (72%) vs. 2/23 (9%) with IV cidofovir
- Complete response observed in 13 BCV patients (80%) vs. 8 patients with cidofovir (35%)
- Differences greatest in first 100 days (before immune reconstitution)

Adapted from Hiwarkar P et al. Blood 2017 Feb 2. pii: blood-2016-11-749721. doi: 10.1182/blood-2016-11-749721. [Epub ahead of print]

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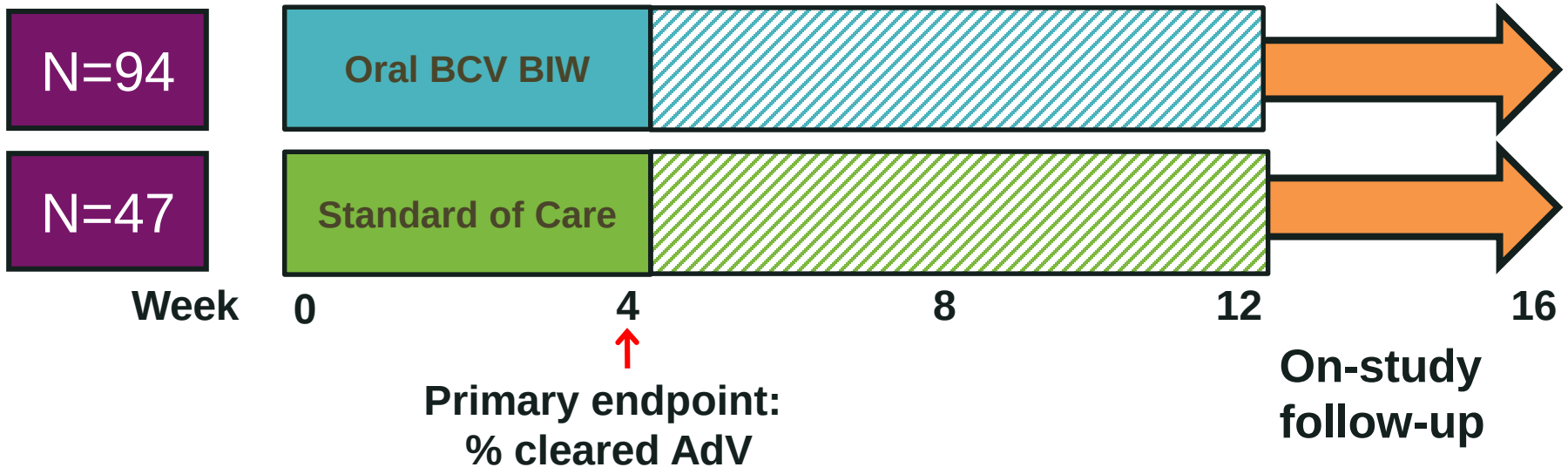
Proposed Study 999: Short-course Oral BCV for Treatment of AdV in Pediatric HCT in First 100 Days Post-Transplant

- **Small, open label, comparative study of BCV vs. standard of care**
  - Inclusion: pediatric T-cell depleted or cord blood HCT recipients with confirmed > 1000 c/mL AdV DNA in plasma, <100d from HCT
- **Duration: Treat until AdV cleared from plasma** (minimum 4 weeks, maximum 12 weeks)
- **Primary endpoint: % undetectable plasma AdV at Week 4**
  - N~140 (2:1, 90% power) for 70% vs. 40% response rate
  - Superiority of BCV in clearance of AdV from plasma could enable conditional or full EU Approval



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Next Steps for IV and Oral BCV

Oral BCV

- Short-course dosing for treatment of AdV and smallpox continue in development
- Small comparative study in pediatric HCT recipients at high risk of AdV disease anticipated to begin in 2H 2017, potential for conditional or full approval in the EU based on positive data

IV BCV

- Single Ascending Dose Study in healthy subjects continues, with one additional cohort nearing completion
- Multiple-ascending dose study in healthy subjects to initiate in 1H 2017
- Phase 2 dose-ranging studies in treatment of CMV and BKV infections anticipated
- Opportunity to explore a broad range of additional indications, esp CNS infections
- Ability to dose for longer durations with lower risk of GI tox allows pursuit of multi-viral prevention

Our ability to provide BCV in oral and IV formulations enables development across multiple indications and populations, with the potential to address conditions without any approved therapies

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Demonstrating IV BCV's Multi-Viral Prevention

- Pediatric patients are at high risk for multiple DNA virus infections, with adenovirus-related mortality a particular concern
- The lower risk of GI toxicity with IV BCV may allow longer duration of dosing throughout high-risk period
- Proposal: **placebo-controlled trial of IV BCV in pediatric allogeneic HCT recipients**
  - Primary endpoint prevention of adenovirus; allows placebo control
  - Secondary endpoint of CMV, as high risk pediatric HCT recipients tend to reactivate AdV earlier than CMV
  - Other secondary endpoints to include other DNA virus prevention and health outcomes
- Benefits:
  - Superiority design allows smaller study than head to head trial for CMV

Details of this study will be forthcoming at our Investor Event

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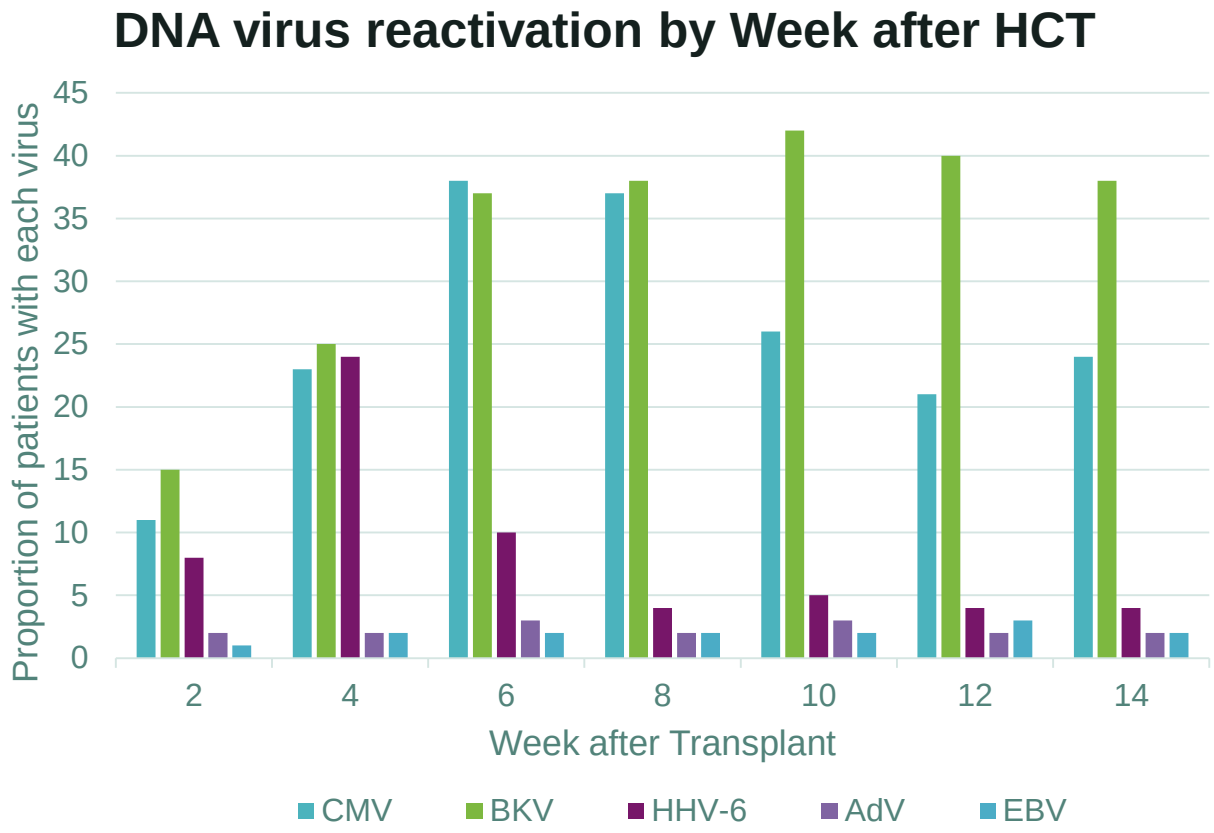
Adult and Pediatric HCT Recipients Face Risks Beyond CMV

- Multiple DNA viruses commonly reactivate as early as the first week after transplant
- Of the HCT recipients who reactivated CMV, >75% had at least one other DNA virus identified and were at increased risk of mortality
- 1 in 3 HCT recipients had ≥3 DNA viral infections detected



More DNA viruses reactivating = higher risk of death

Hill JA et al. Blood. 2017 Feb 16. pii: blood-2016-10-748426. doi: 10.1182/blood-2016-10-748426. [Epub ahead of print] 400+ HCT Recipients at Fred Hutchison Cancer Research Center

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Unmet Need Drives Demand for Brincidofovir

- More than 300 patients received oral BCV for life-threatening AdV in 2016

	Pediatrics		Adults		TOTAL
	Asymptomatic	Symptomatic[a]	Asymptomatic	Symptomatic[a]	All
EINDs/NPP	-	344	-	210	566[b]
Study 202	24	3	10	2	39
Study 304	51	79	23	48	201
Study 350	10	19	5	23	68[c]
Study 351	3	62	1	26	92[d]
Total	88	465	39	321	966

[a]Includes local and disseminated AdV disease
[b]Includes 12 pts whose age is not known; assumes that EIND/NPP pts are symptomatic; Includes 9 patients who received open-label BCV
[c]Grimley et al. EBMT 2013; total numbers includes all subjects with AdV identified as a primary or secondary DNA viral infection that could not be classified (N=68)
[d]Ongoing expanded access protocol, n=92 as of 22 Feb 2017

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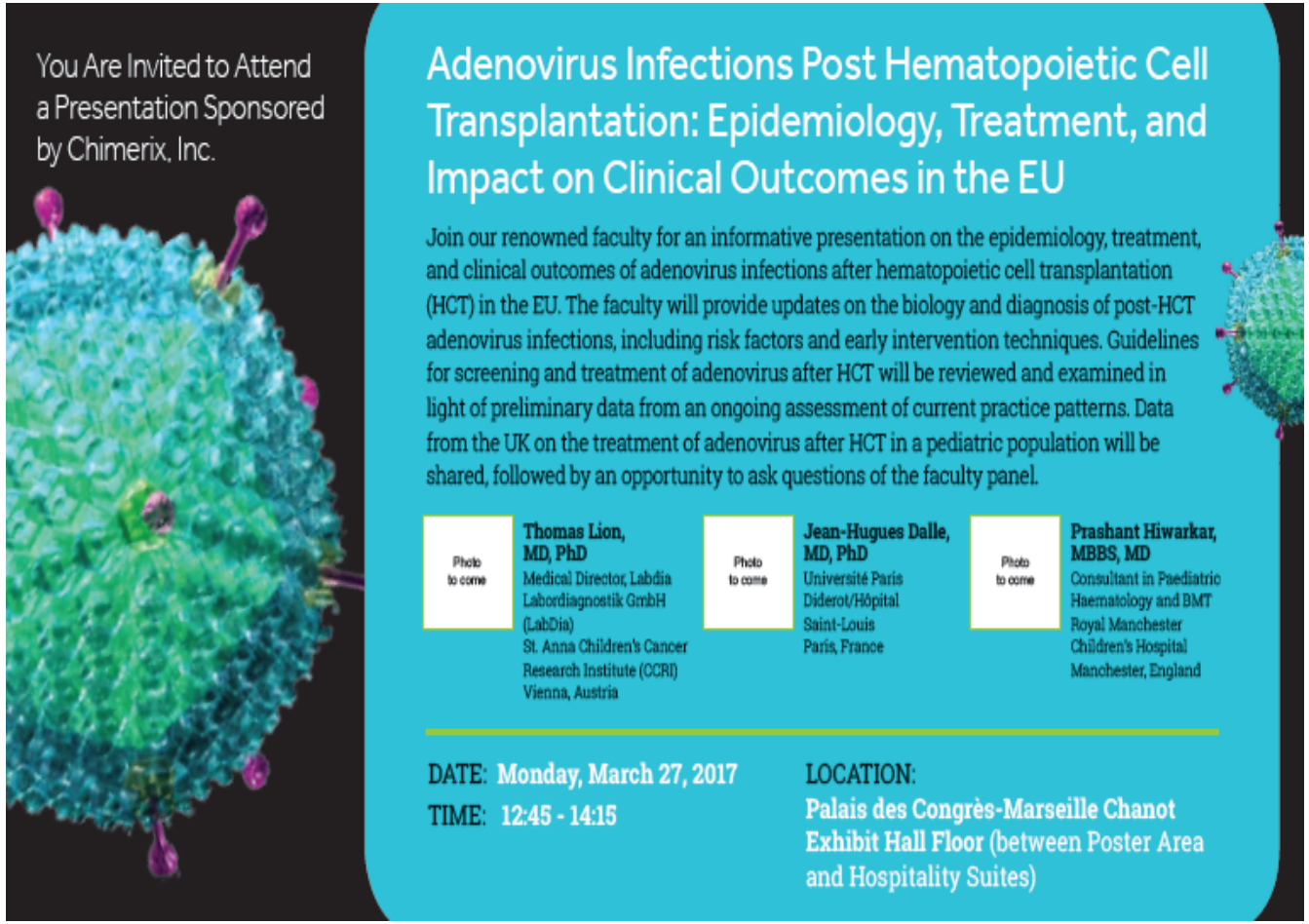
Educational Efforts Continue to Build

- Multiple activities scheduled for the European BMT Meeting in March
  - KOL Advisory Board
  - Chimerix supported educational presentation on March 27, 2017
- Several oral presentations and abstracts of interest including:
  - Data from the Chimerix long-term registry study of patients from our trials
  - Data from the UK, France, Spain and the Netherlands summarizing their experiences using brincidofovir to treat AdV infections



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Year-end 2016 Financial Position Remains Strong

- 12/31/16 Cash and investments: $ 278M
- 2016 Net cash burn: $ 65M

Net cash burn for 2016 reflected a 35% decrease over 2015

We currently expect expenses to trend upward modestly in 2017

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Chimerix: 2017 Potential Catalysts

1H 2017

- IV BCV: Present final IV BCV clinical data from single ascending dose study, initiate multiple dose study
- CMX521 for Norovirus: IND-enabling studies

2H 2017

- IV BCV: multiple ascending dose clinical data
- Oral BCV: Initiate Study 999, small comparative AdV trial in pediatric HCT recipients for potential approval
- Initiate Dose-Ranging Studies in patients with CMV and BKV
- Data from second animal efficacy model for smallpox
- CMX521: Submit IND and initiate first clinical studies

$278 million in capital is sufficient to fund operations through anticipated catalysts in 2017

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