

INTERIM RESULTS AS OF JUNE 30, 2015

Q2

RECENT HIGHLIGHTS

PROSTVAC

- Global commercialization agreement with Bristol-Myers Squibb
\$60M upfront with potential of ~\$975M total in option and milestone payments
- Clinical collaboration also planned combining PROSTVAC and BMS immuno-oncology candidates
- Updated long-term survival data from combination study of PROSTVAC and ipilimumab warrants further studies

IMVAMUNE

- \$133M bulk order received by BARDA (July 2015)
- Pivotal Phase 2 study of freeze-dried IMVAMUNE finalized
- Manufacturing preparations for freeze-dried version on track
- Completed deliveries to the Public Health Agency of Canada

Janssen/Ebola partnership

- Initiated deliveries of MVA-BN Filo to Janssen
- Preliminary Phase 1 results presented
- Additional Phase 1 studies ongoing in US and Africa
- Phase 2 study initiated in Europe (July)

FINANCIAL HIGHLIGHTS

- Revenues primarily generated by deliveries of MVA-BN Filo to Janssen
- Cash preparedness significantly improved recently as result of BMS deal and loan facility obtained from European Investment Bank
- FY revenue and results expectations maintained

	DKK million		USD million	
	6m 2015	6m 2014	6m 2015	6m 2014
Revenue	624	450	98	70
EBIT	85	(70)	13	(11)
Cash preparedness	1,669	423	261	66

USD/DKK = 6.40

FINANCIAL OUTLOOK

2015

Revenue	DKK 1,000m
EBIT	DKK 0m
Cash preparedness at year-end	DKK 1,450m *

* Cash preparedness was upgraded from DKK 1,100 to DKK 1,450 after obtaining a loan facility of €50 million from European Investment Bank in May 2015

Assumptions:

Deliver and revenue recognize bulk material totaling approximately 2 million doses of MVA-BN Filo to Janssen and 0.3 million doses of IMVAMUNE to the U.S. and Canada

Total **R&D costs of DKK 600 million**, which include approximately DKK 100 million in contract expenses (stated under production costs in the P&L statement) as well as DKK 25 million capitalized in the balance sheet

All numbers are approximate

FINANCIAL STATEMENTS

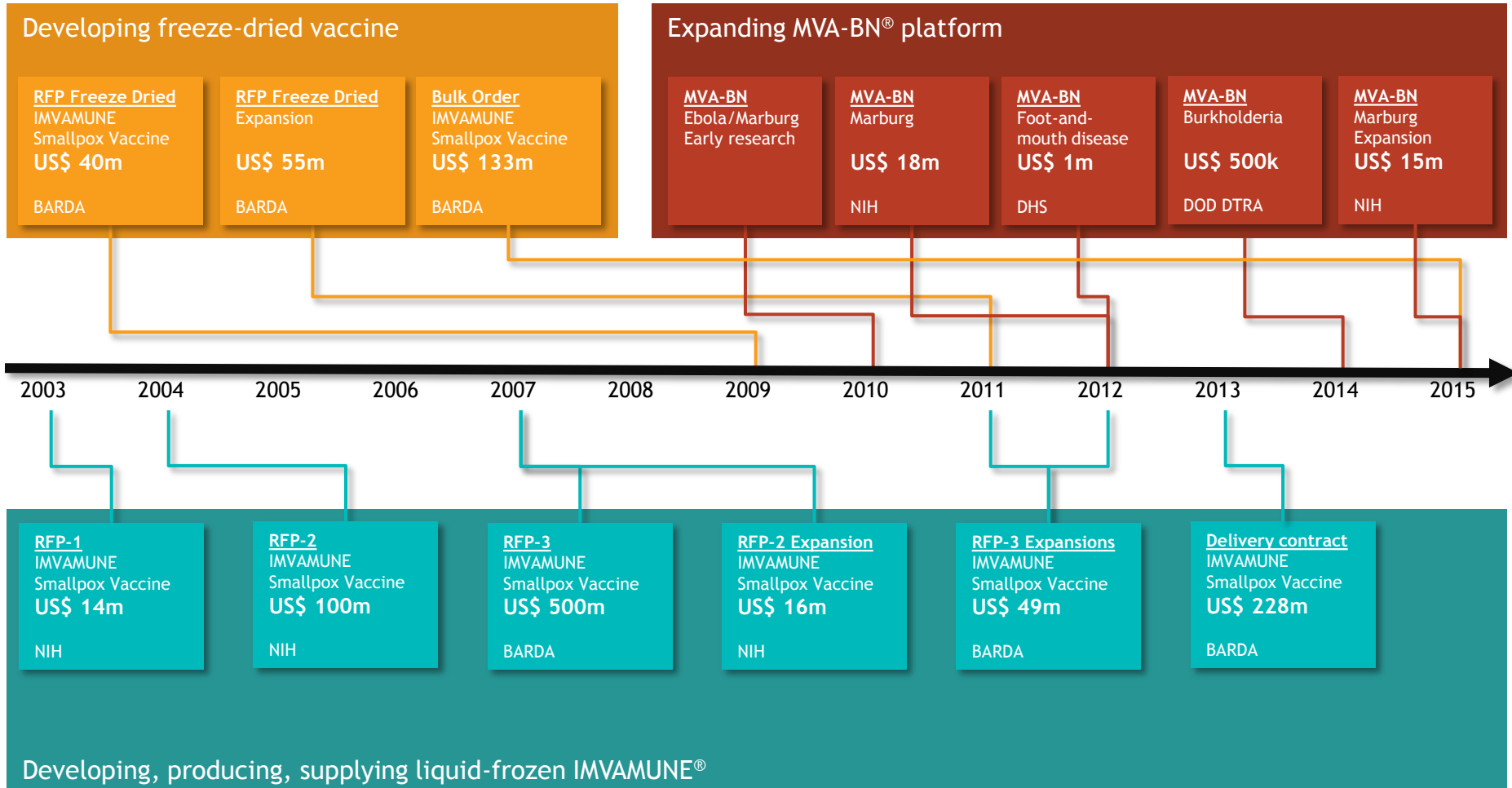
DKK million	6m 2015	6m 2014	FY 2014
Revenue	624	450	1,217
Production costs	202	229	495
Gross profit	422	221	722
Research and development costs	219	192	479
Distribution and administrative costs	118	100	226
Total operating costs	337	291	705
Income before interest and taxes (EBIT)	85	(70)	17
Financial income/loss	63	6	48
Income before company tax	148	(64)	64
Tax	41	(10)	38
Net profit for the period	107	(54)	26
Cash preparedness (end of period)	1,669	423	1,000

5 KEY INDEPENDENT VALUE DRIVERS



SUCCESSFUL PARTNERSHIP WITH THE U.S. GOVERNMENT

CONTRACTS AWARDED TO-DATE EXCEED US\$ 1BN



IMVAMUNE

NEW CONTRACT SIGNALS THE BEGINNING OF FREEZE-DRIED ORDERS

RECENT EVENTS CONTINUE TO DRIVE CONFIDENCE

- \$22M expansion to higher capacity line for freeze-dried (FD) (April 2014)
- Presidential budget lists FD IMVAMUNE in his 2016 budget request to congress (Feb 2015)
- Phase 2 FD data meets primary endpoint of equivalence to liquid frozen (May 2015)
 - Meeting clinical criteria for EUA stockpiling
- \$133M Bulk order of IMVAMUNE by BARDA (July 2015)
 - Initial order allows for immediate transition to FD once RFP occurs and FD pricing can be established

TIMELINES

- Ongoing transfer of FD process to commercial scale facility
- Phase 2 complete; anticipated EUA in 2016, which allows for federal stockpiling

POTENTIAL

- First wave of replenishment could replace 20M expiring doses in stockpile
- Long term stated goal of US Government calls for non-replicating vaccine for 66M US citizens (~132M doses)



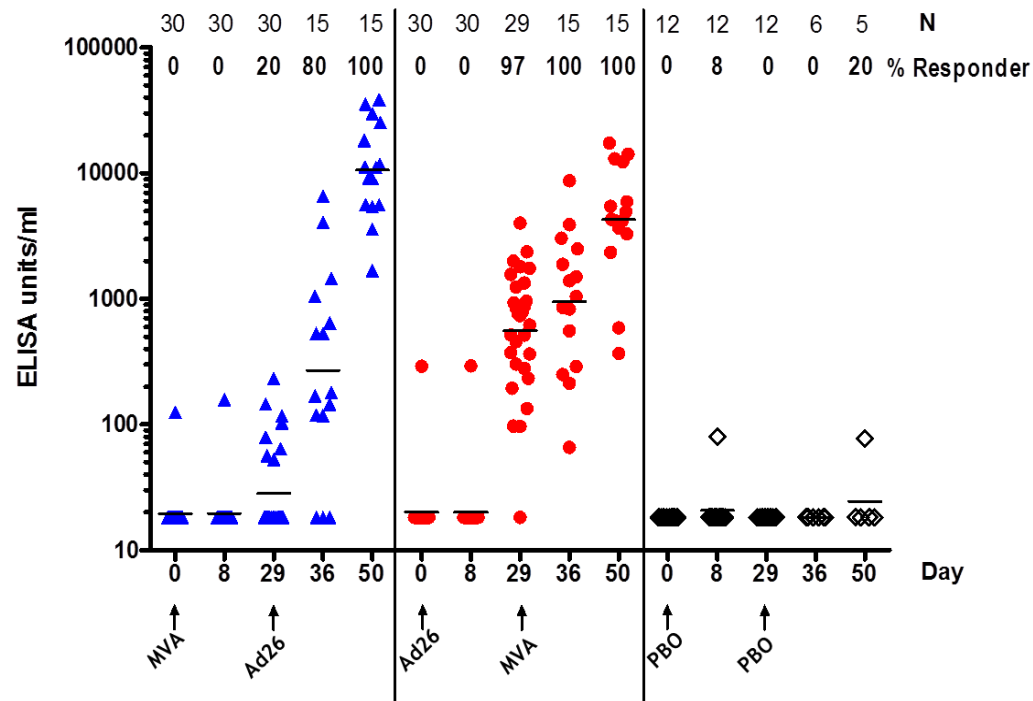
FILOVIRUSES - EBOLA & MARBURG

- 2 million doses manufacturing on track
 - Bulk equivalent to 1.3 million doses already delivered
- Data presented to FDA by Janssen in May 2015 demonstrate robust response with prime/boost combo
- Phase 2 underway in Europe
 - Additional initiations in France & Africa (1,200 subjects) to begin in H2
- Protocol for large safety and immunogenicity study in Sierra Leone set and listed on clinicaltrials.gov
- Additional funding and discovery underway with NIH/NIAID
 - In June, an additional \$15 million in funding awarded to BN to create a multivalent, BN based prime/boost Filovirus program (Sudan, Zaire, and Marburgvirus)

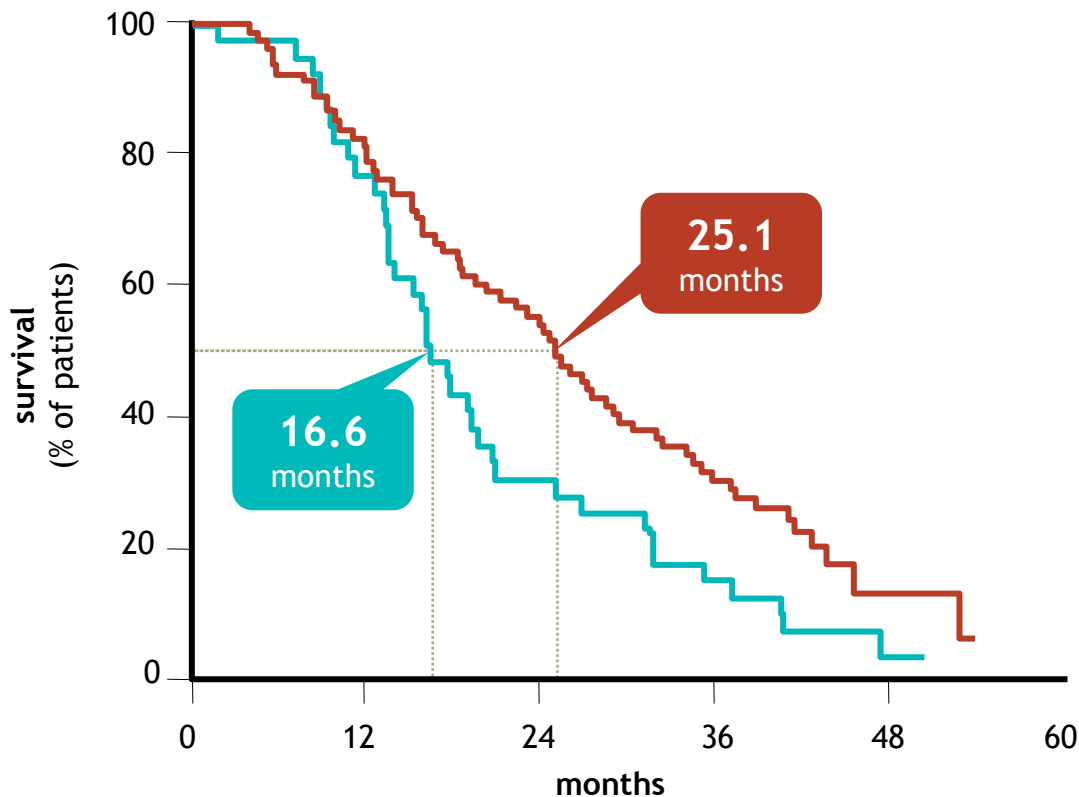


FIRST IN HUMAN DATA FOR THE BAVARIAN NORDIC/JANSSEN EBOLA PRIME-BOOST VACCINE

- 72 healthy volunteers randomized into four groups receiving prime-boost vaccine regimen or placebo at intervals of 28 or 56 days
- An open label arm with 15 healthy volunteers is also investigating a shorter prime-boost interval of 14 days for Ad26.ZEBOV prime and MVA-BN Filo boost
- Substantial boost of responses in both regimens



PROSTVAC PHASE 2 RESULTS



Overall Survival Analysis of a Phase II Randomized Controlled Trial of a Poxviral-Based PSA-Targeted Immunotherapy in Metastatic Castration-Resistant Prostate Cancer
Kantoff et al., Journal of Clinical Oncology, January 2010

Significantly extended overall survival

	N	Deaths	Median OS
Control	40	37	16.6
PROSTVAC	82	65	25.1

Δ 8.5 months improvement in OS

Hazard ratio

0.56 (95% CI 0.37–0.85)
p=0.0061

Pivotal data of approved agents:

Provenge®: ΔOS = 4.1 mo (AS/MS mCRPC)
Zytiga®: ΔOS = 5.2 mo (pre-chemo mCRPC)
Xtandi®: ΔOS = 2.2 mo (pre-chemo mCRPC)

Reference
Package insert Sipuleucel-T, enzalutamide and abiraterone

HISTORICAL SURVIVAL RATES

The median survival of placebo mCRPC patients from several Phase III trials reported in the same period ranged from 12.2 to 21.7¹⁻⁷

Integrated Studies With Sipuleucel-T/Higano et al

Table 1. Summary of Overall Survival and Time to Disease Progression in D9901, D9902A, and the Integrated Analysis

	D9901		D9902A		Integrated	
	Sipuleucel-T, n=82	Placebo, n=45	Sipuleucel-T, n=65	Placebo, n=33	Sipuleucel-T, n=147	Placebo, n=78
Median survival (CI), mo	25.9 (20.0-32.4)	21.4 (12.3-25.8)	19.0 (13.6-31.9)	15.7 (12.8-25.4)	23.2 (19.0-31.0)	18.9 (13.5-25.3)
Hazard ratio* (CI)		1.71 (1.13-2.58)		1.27 (0.78-2.07)		1.50 (1.10-2.05)
Overall survival, log-rank test		P=.010		P=.331		P=.011
Median time to progression (CI), wk	11.7 (9.1-16.6)	9.1 (8.7-13.1)	10.9 (9.3-17.7)	9.9 (8.4-18.0)	11.1 (10.0-16.3)	9.7 (8.7-13.3)
Hazard ratio* (CI)		1.45 (0.99-2.11)		1.09 (0.69-1.70)		1.26 (0.95-1.68)
Overall TTP, log-rank test		P=.052		P=.719		P=.111

1. Higano et al., 2009. A phase III trial of GVAX immunotherapy for prostate cancer versus docetaxel plus prednisone in asymptomatic castration resistant prostate cancer. Genitourinary Cancers Symposium.
2. Small et al., 2009. A phase III trial of GVAX immunotherapy for prostate cancer in combination with docetaxel versus docetaxel plus prednisone in symptomatic castration resistant prostate cancer (CRPC). Genitourinary Cancers Symposium.
3. Saad et al., 2002. A randomized placebo-controlled trial of zoledronic acid in patients with hormone refractory metastatic prostate carcinoma. J Natl Cancer Inst. 94:1458
4. Carducci et al., 2007. A phase 3 randomized controlled trial of the efficacy and safety of atrasentan in men with metastatic hormone refractory prostate cancer. Cancer. 110: 1959.
5. Sternberg et al., 2009. Multinational double-blinded phase III study of prednisone and either stratplatin or placebo in patients with castration refractory prostate cancer progressing after chemotherapy: the SPARC trial. J. Clin Oncol. 27:5431.
6. Petrylak et al., 2004. Docetaxel and estramustine compared with mitoxantrone and prednisone for advanced refractory prostate cancer. N Eng J Med. 351:1513.
7. Tannock et al., 2004. Docetaxel plus prednisone or mitoxantrone plus prednisone for advanced prostate cancer. N Eng J Med. 351: 1502.
8. Higano CS et al., 2009. Integrated data from 2 randomized double blind placebo-controlled Phase 3 trials of active cellular immunotherapy with Sipuleucel-T in advanced prostate cancer. Cancer. 115: 3670

PROSTVAC CLINICAL DEVELOPMENT PROGRAM

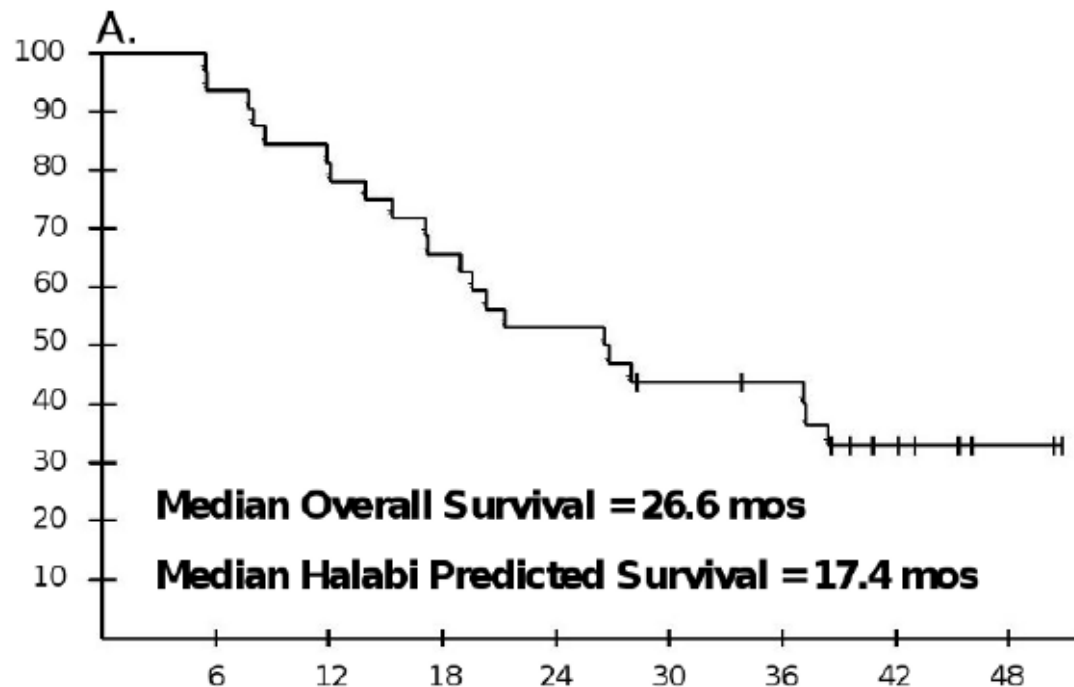
PROSTVAC has a robust clinical data package providing rationale for:

- Phase 3 trial as monotherapy in late-stage prostate cancer
- Combination and sequencing studies
 - PROSTVAC plus anti-androgens
 - PROSTVAC plus immune checkpoint inhibitors
- Early prostate cancer indications

14 ongoing or completed PROSTVAC clinical trials

	Completed	Ongoing
Phase 1	4	-
Phase 2	4	5
Phase 3	-	1
Total	8	6
Total patients	300+	1,400+

ADDITIONAL PROSTVAC PHASE 2 RESULTS



32 mCRPC patients enrolled with median age 65.6

Improvement of 9.2 months compared to Halabi prediction ⁽¹⁾

1. Gulley et al. 2010. Immunological and prognostic factors associated with overall survival employing a poxvirus-based PSA vaccine in metastatic castrate-resistant prostate cancer. *Cancer Immunol. Immunother.* 59: 663

PREDICTED SURVIVAL (HALABI) VERSUS ACTUAL

	All patients	Patients with Halabi Predicted Survival < 18 months	Patients with Halabi Predicted Survival ≥ 18 months
Vaccine PROSTVAC (n=32)			
Median survival predicted by Halabi model (months)	17.4	12.3	20.9
Actual median overall survival (months)	26.6	14.6	≥ 37.3 (not reached)
Patients surviving longer than predicted by Halabi nomogram	22 of 32 (69%) p=0.50	10 of 17 (59%) p=0.63	12 of 15 (80%) p=0.035
Difference (months)	9.2	2.3	≥ 16.4

Using a different nomogram ⁽²⁾ there was a 9.6 months improvement, compared to predicted survival (17 vs 26.6 months)

1. Gulley et al. 2010. *Cancer Immunol. Immunother.* **59**: 663
2. Smaletz et al., 2002. Nomogram for overall survival of patients with progressive prostate cancer after castration. *J. Clin. Oncol.* **120**: 3972

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Difference (months)	9.2	2.3	≥ 16.4
Docetaxel therapy (n=22) * Dahut et al. 2004. J. Clin Oncol. 122:2532			
Median survival predicted by Halabi model (months)	16.5	13.0	21.0
Actual median overall survival (months)	15.5	15.4	16.9
Patients surviving longer than predicted by Halabi nomogram	11 of 22 (50%)	8 of 13 (62%)	3 of 9 (33%)
Difference (months)	(-1.0)	2.4	(-4.1)

Gulley et al. 2010. *Cancer Immunol. Immunother.* 59: 663

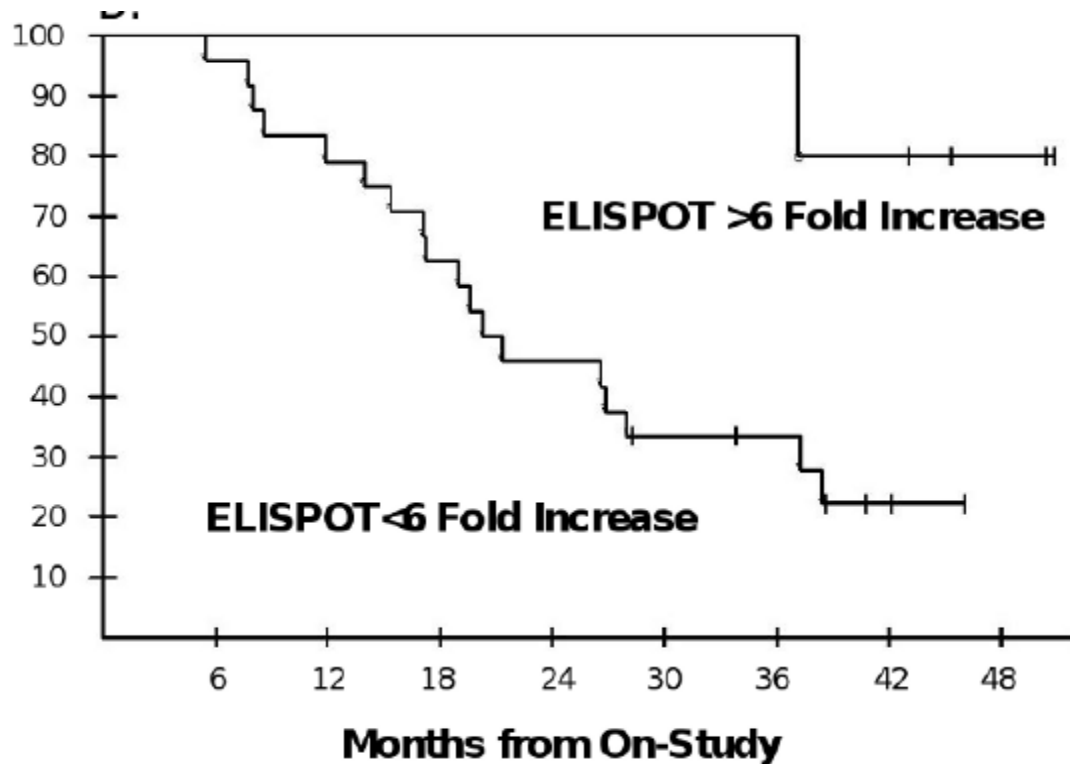
PROSTVAC INDUCES A ROBUST T CELL RESPONSE AGAINST PROSTATE CANCER CELLS

Summary of T cell responses from 6 PROSTVAC clinical studies

Test	Result	Comment
PSA Specific Immune response	56.7% (59/104)	28 days after last vaccine
--Median fold increase in PSA specific immune response	5X	PSA response 30 / 10^6 cells flu response 33 / 10^6 cells
Antigen Cascade	67.9% (19/28)	
Anti-PSA Ab	0.57% (2/349)	

Gulley et al., 2014. Immune impact by PROSTVAC (PSA-TRICOM) a therapeutic vaccine for prostate cancer. *Cancer Immunol Res.* 2: 133.

PSA SPECIFIC T CELLS ASSOCIATED WITH IMPROVED SURVIVAL



Patients with a strong PSA specific T cell response responded better ($p = 0.0055$)

PROSTVAC

PHASE 3 FULLY ENROLLED DECEMBER 2014

- Primary endpoint is overall survival
 - Either one of the treatment arms must be superior to placebo
- Each comparison requires 534 deaths for the final analysis
- Interim analysis plan
 - Pre-specified interim data analyses will evaluate whether the trial should continue as planned or potentially be stopped early for efficacy or futility

Phase 2 results:

Demonstrated hazard ratio 0.56 = 44% reduction in risk of death

SPA terms for Phase 3:

Required hazard ratio 0.82 or less = 18% reduction in risk of death

PROSPECT

A Randomized, Double-blind, Global Phase 3 Efficacy Trial of PROSTVAC in Metastatic Castration-Resistant Prostate Cancer



1,298 patients

Enrolled at 214 sites in 15 countries
Australia, Belgium, Canada, Denmark, Estonia, France, Germany, Iceland, Israel, Netherlands, Poland, Russia, Spain, UK & US

3 study arms

PROSTVAC + GM-CSF

PROSTVAC

Placebo

EARLY RESULTS COMBINING PROSTVAC WITH IPILIMUMAB APPEAR PROMISING

- Vaccines and immune checkpoint inhibition
 - Efficacy of immune checkpoint inhibition requires an underlying immune response to unleash
 - Vaccines can provide that underlying immune response

	Median Halabi Predicted Survival* (months)	Median Overall Survival in months (95% CI)	Δ OS (months)	Alive at 24 mos
PSA-TRICOM alone (n=32) ¹	17.4	26.6	+9.2	53%
PSA-TRICOM + Ipilimumab (n=30) ²	18.5	31.3	+12.8	73%

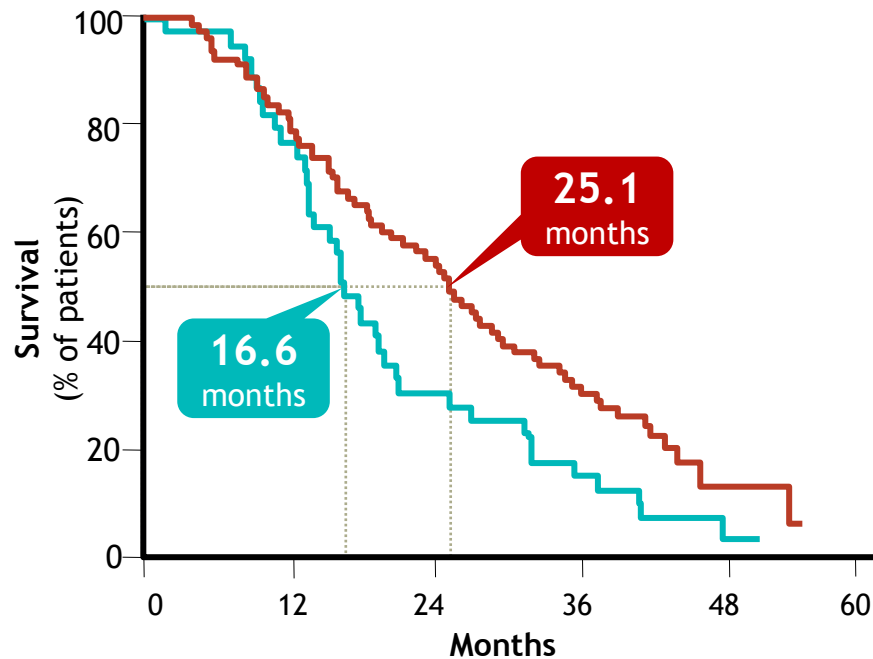
*Halabi S et al., *JCO* 2003

¹Gulley J et al, *Cancer Immunol Immunother*, 2010

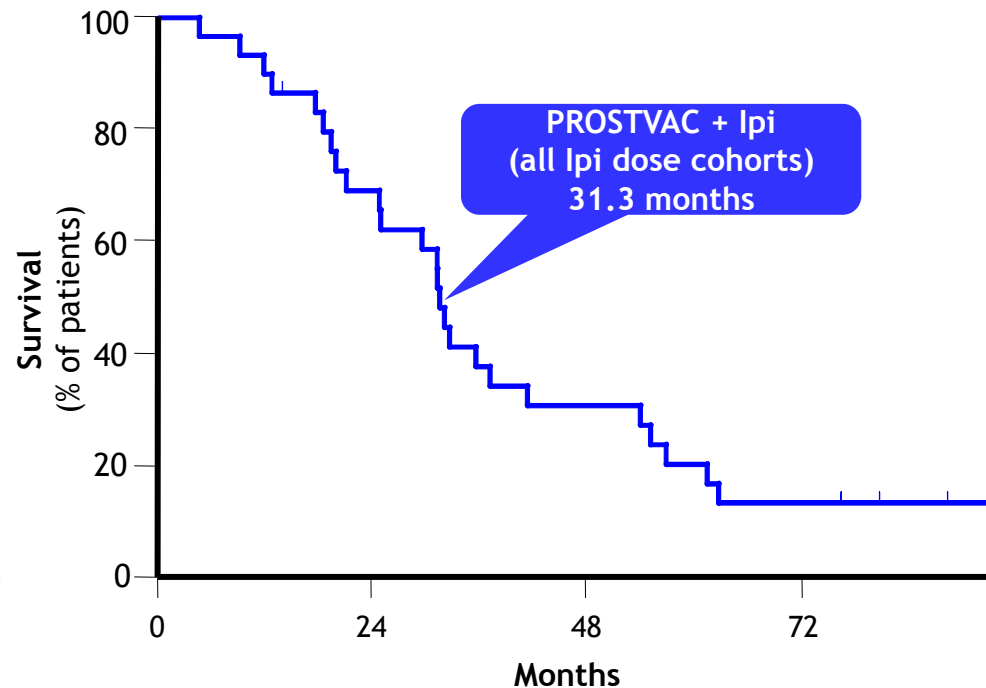
²Singh H et al, *J Clin Oncol* 33, 2015 (suppl 7; abstr 172)

PROSTVAC PLUS IPILIMUMAB COMBINATION: IMPACT ON MEDIAN OVERALL SURVIVAL

PROSTVAC Phase 2 Study

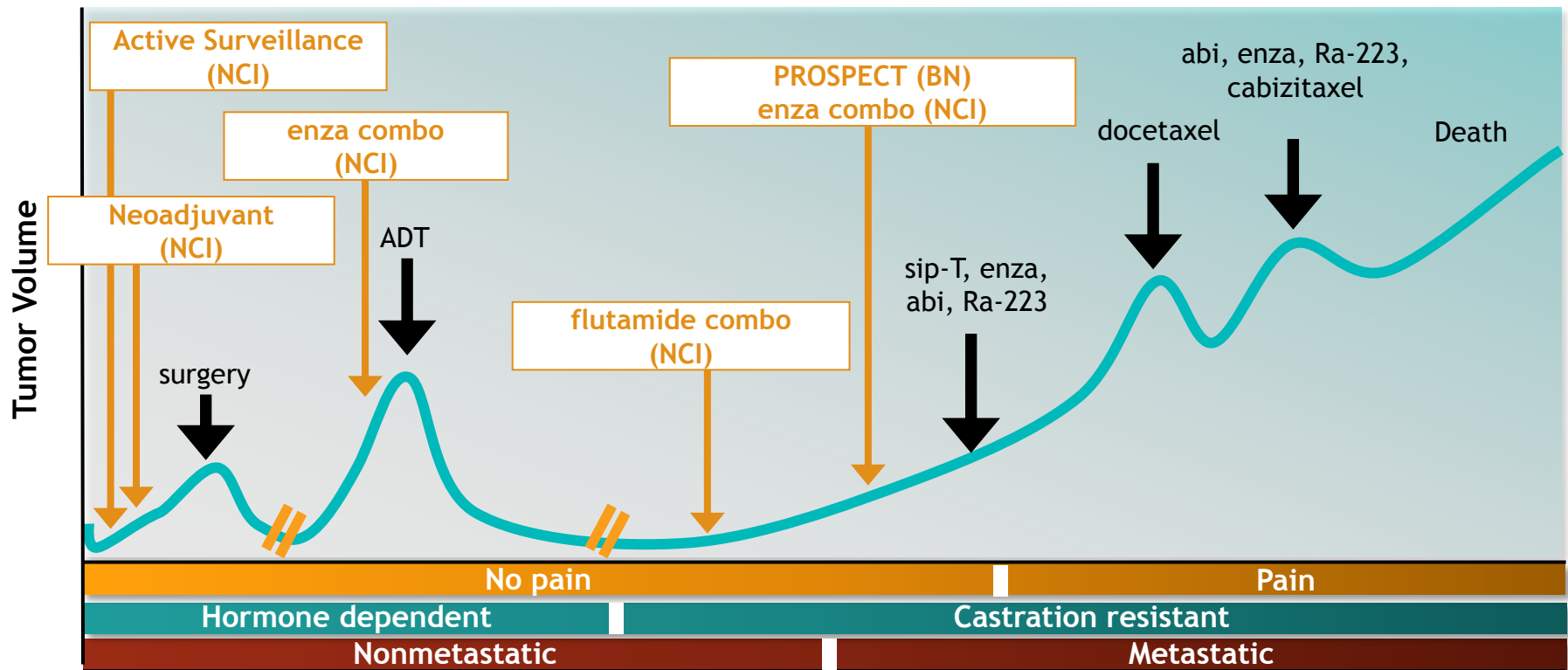


PROSTVAC + Ipilimumab NCI Phase 1 Study



Patients in 10mg/kg dose cohort (N=15) reported 37.2 months overall survival
~20% of 10mg/kg patients remain alive at 80 months

STUDIES SPAN PROSTATE CANCER DISEASE LANDSCAPE



- Mechanism of action (MOA)
 - Immune infiltration to tumor, immune response, biomarkers, and PSA kinetics
- Use in combination
 - With currently approved therapies for mCRPC, and with checkpoint inhibitors
- Use in earlier prostate cancer to support future label expansion
 - More studies planned in early disease indications

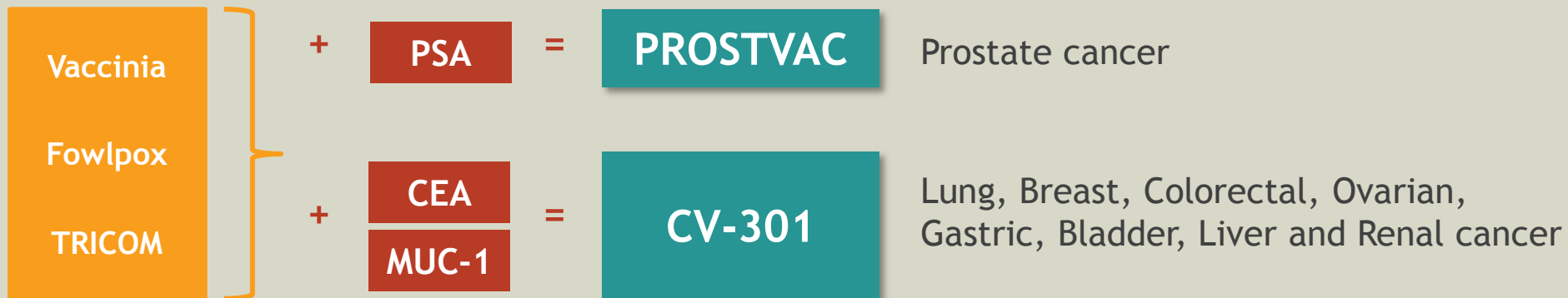
= ongoing PROSTVAC studies

COMMERCIAL VACCINES: CV-301

CV-301 development strategy

- Phase 2 study(s) starting 2016:
- Combination treatment with checkpoint inhibitor(s)
- Short-term clinical outcomes possible (Overall Response Rate, Progression-Free Survival)
- Partnering opportunity based on proof-of-concept data

Same base technology - different antigens



RSV:

LARGE UNMET MEDICAL NEED: CHILDREN & ELDERLY

RSV: Respiratory Syncytial Virus

- Major cause of upper & lower respiratory tract infections in adults and children
- No approved vaccine; high unmet medical need
- Recurrent infections are common, particularly in individuals with respiratory & circulatory diseases

MVA-BN RSV vaccine candidate

- Creates a strong immune response (both antibody and T cell)
 - Targets both the F and G surface proteins
- Protection against both RSV subtypes (A&B) in preclinical models
- Received NIH funding (preclinical efficacy)

MVA-BN RSV: PHASE 1 NOW ENROLLING

- Randomized, placebo-controlled study
 - 63 patients, ages 18-65
 - 3 dose cohorts
- Primary endpoint: safety and tolerability
- Secondary endpoints: immunogenicity
- Initial data anticipated H1 2016

*ClinicalTrials.gov identifier: NCT02419391

DEVELOPMENT STRATEGY



CLINICAL PIPELINE



			Phase 1	Phase 2	Phase 3	Market
Product	Indication	Partner				
IMVANEX/ IMVAMUNE ¹⁻⁴⁾	<i>Smallpox</i>	BARDA				
IMVAMUNE freeze-dried ¹⁾	<i>Smallpox</i>	BARDA				
PROSTVAC	<i>Prostate Cancer</i>	Bristol-Myers Squibb				
PROSTVAC + enzalutamide	<i>Prostate Cancer</i>	NCI				
PROSTVAC + ipilimumab	<i>Prostate Cancer</i>	NCI				
CV-301 Bladder Combo ¹⁾	<i>Bladder Cancer</i>	NCI				
MVA-BN Brachyury ¹⁾	<i>Metastatic Tumors</i>	NCI				
MVA-BN Filo + AdVac ® ¹⁾	<i>Ebola/Marburg</i>	Janssen, NIH				
MVA-BN RSV	<i>RSV</i>					

1) Externally funded programs

2) Sold to government stockpiles

3) Approved in the European Union under the trade name IMVANEX® and in Canada under the trade name IMVAMUNE®

4) Phase 3 registration studies are ongoing in the United States

ANTICIPATED SELECTED MILESTONES

- Manufacture and deliver **MVA-BN Filo** (Ebola/Marburg) vaccine; targeting 2 million doses (2015)
- Phase 3 trial of **MVA-BN Filo** + AdVac® (Ebola) (2015)
- Complete transfer of validated freeze-dried manufacturing process for IMVAMUNE to a commercial scale facility (2015)
- Complete enrollment and report Phase 1 data for **MVA-BN RSV** (H1, 2016)
- Manufacture IMVAMUNE bulk vaccine under USD 133M contract with BARDA (2016)
- Potential expanded collaboration with **Janssen** on additional infectious disease targets
- Secure **IMVANEX/IMVAMUNE** orders from rest of world
- Advance clinical studies exploring the therapeutic potential of **PROSTVAC** with checkpoint inhibitors in collaboration with BMS
- Interim analyses of **PROSTVAC**



This presentation includes "forward-looking statements" that involve risks, uncertainties and other factors, many of which are outside of our control, that could cause actual results to differ materially from the results discussed in the forward-looking statements. Forward-looking statements include statements concerning our plans, objectives, goals, future events, performance and/or other information that is not historical information. We undertake no obligation to publicly update or revise forward-looking statements to reflect subsequent events or circumstances after the date made, except as required by law.