Komen's Research Funding Impact: Breast Cancer Drugs

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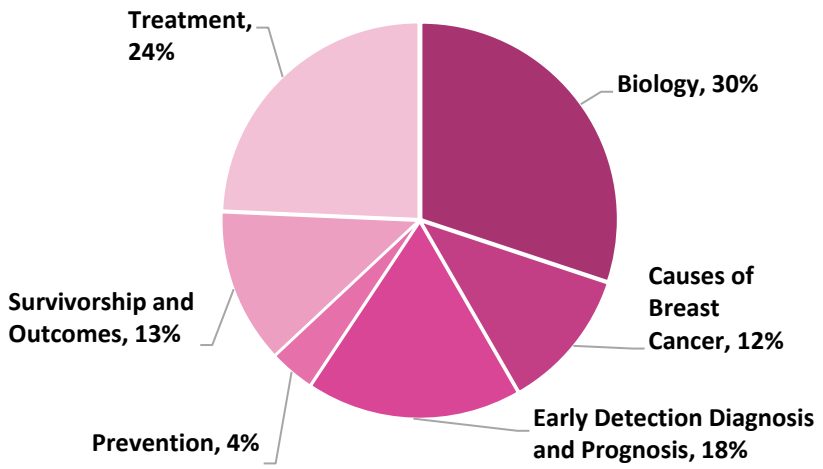
Overview – Komen's Investment

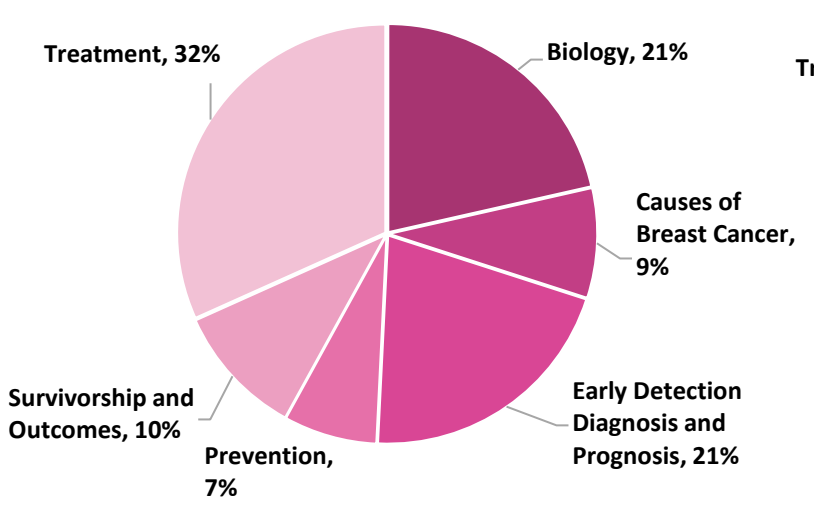
Nearly $1.1 billion in >2700 research grants and >530 clinical trials

More than 2000 researchers supported, >700 early career, > 450 institutions

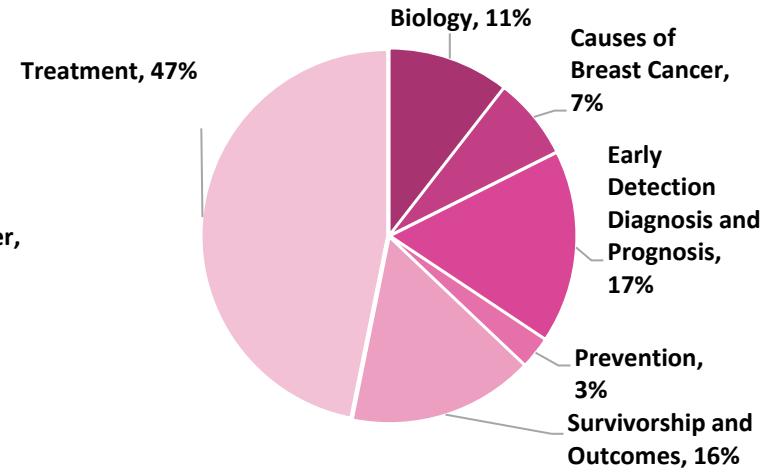
1982-2007 Topic Area of Investment



2008-2015 Topic Area of Investment



2016-2021 Topic Area of Investment



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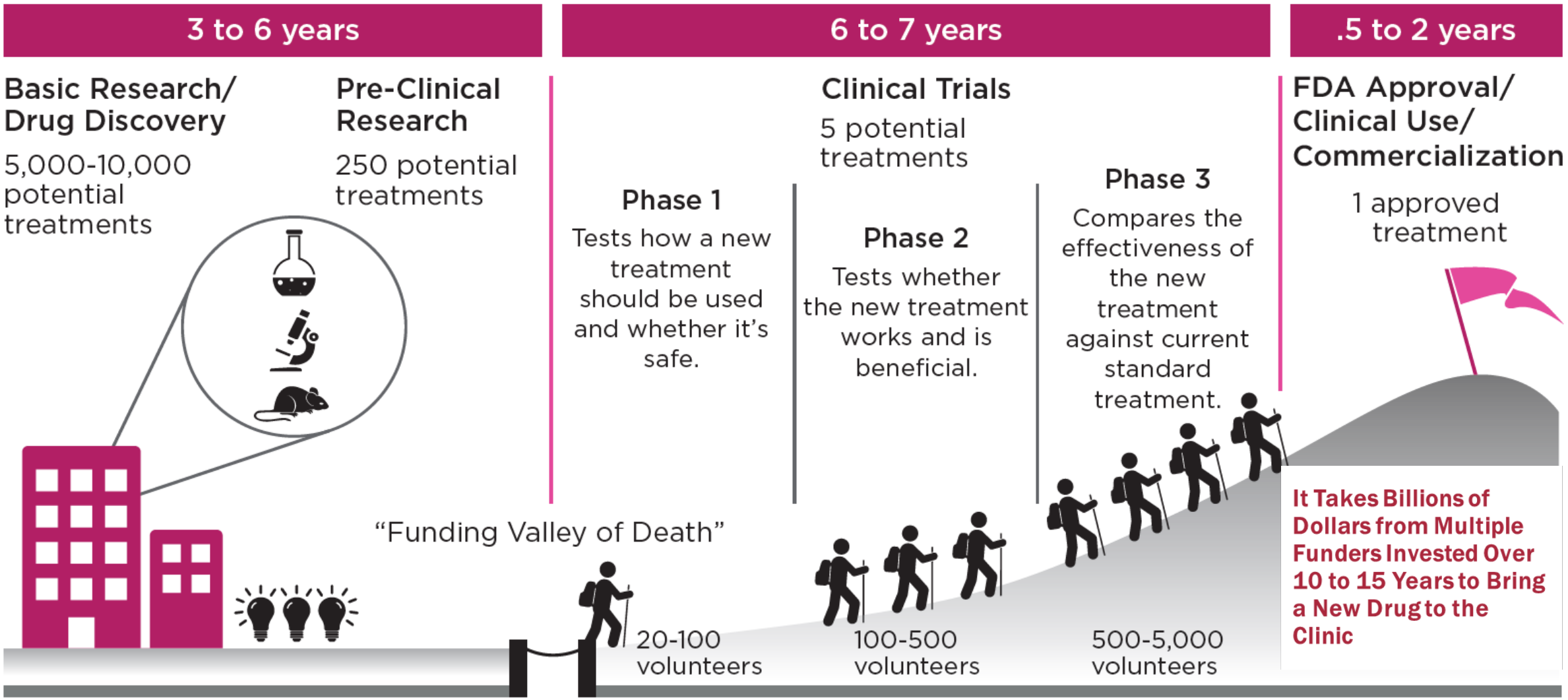
Research Pipeline: Moving from the bench to bedside



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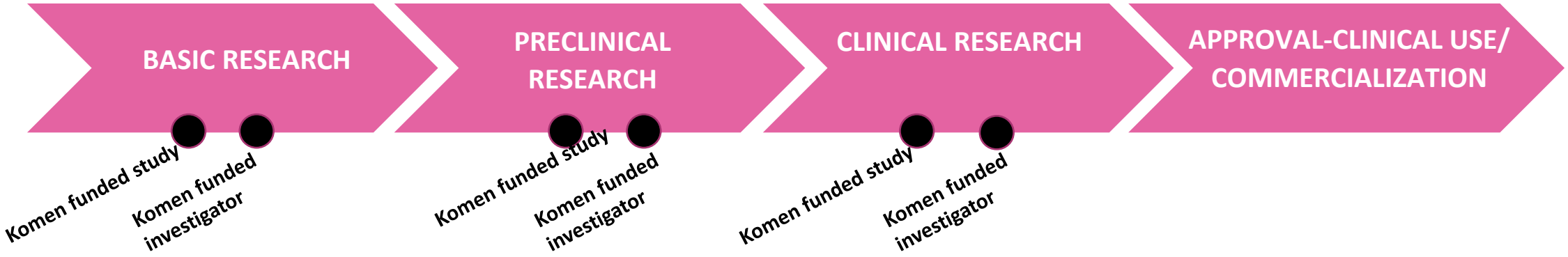
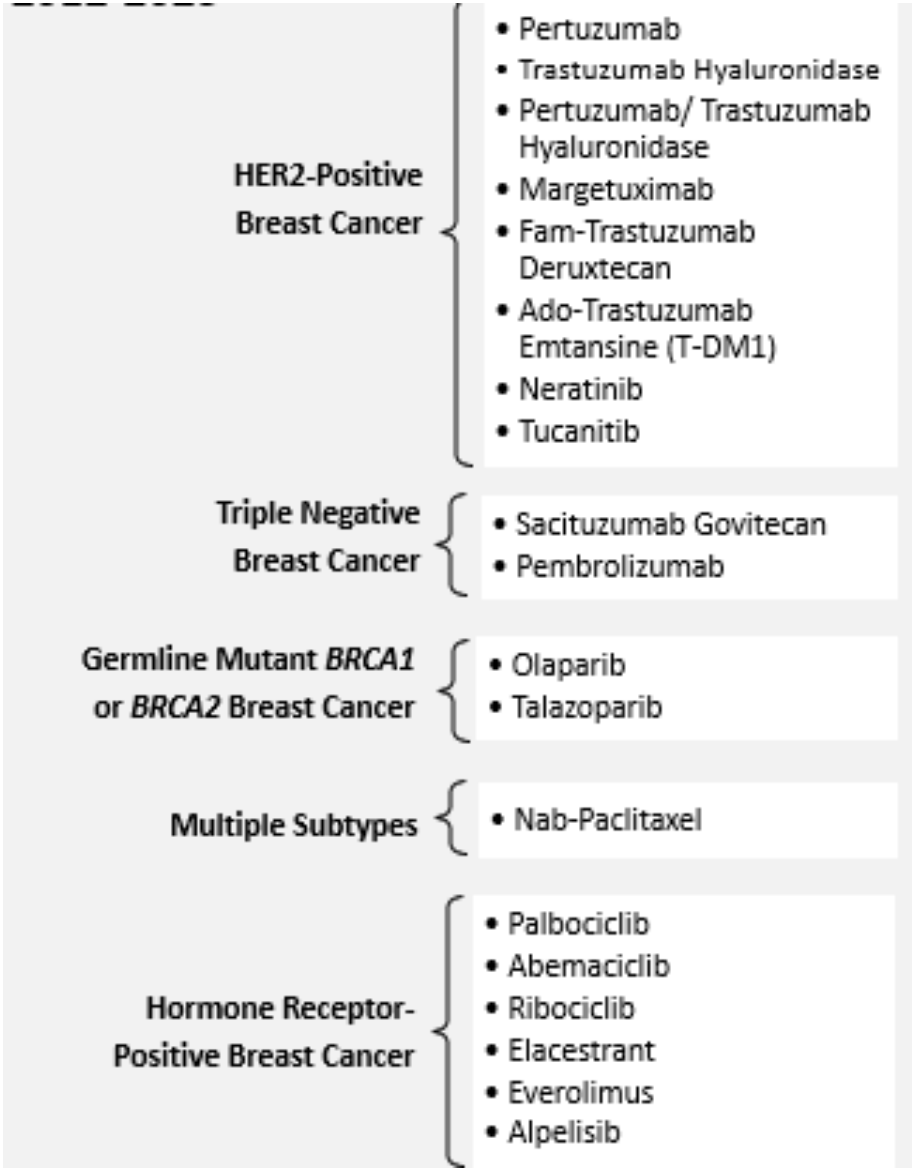
Goal

Determine Komen's contribution for all breast cancer drug approvals from 2009-2023



19 FDA-approved Drugs to Treat Breast Cancer 2009-2023



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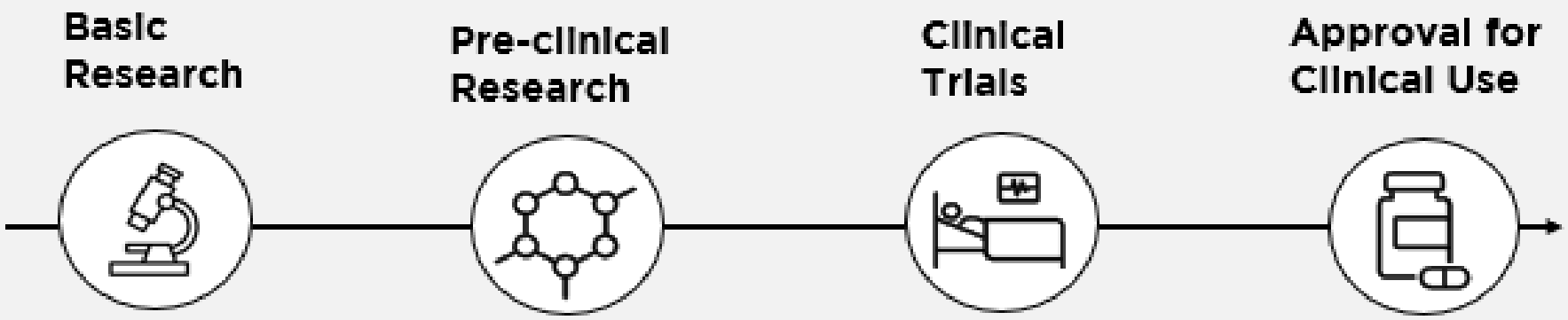
Methods Overview: Bibliometric approach

Identify fundamental studies from discovery to clinical trials that led to initial and expanded FDA approval of drugs used to treat breast cancer from 2009 - 2023



1. Use drug labels/ press releases to identify Phase III trials that led to approval

2. Use citations from Phase III clinical trial publications to identify Phase II & I clinical trials

3. Use citations from Phase II & Phase I clinical trial publications to identify pre-clinical studies

4. Use citations from pre-clinical study publications to identify basic research studies

5. Cross reference all identified publications, authors, and funding against Komen's database of supported grants and key personnel

Methods - Identify Komen Touchpoints

- **Direct Komen Touchpoints** – Komen specifically funded the published study or trial – **Investments in Studies**

- **Indirect Komen Touchpoints** – Komen funded associated key personnel prior to or during published study or trial period – **Investments in People**

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Results

FDA-approved Drugs to Treat Breast Cancer 2009-2023

HER2-Positive Breast Cancer	• Pertuzumab • Trastuzumab Hyaluronidase • Pertuzumab/ Trastuzumab Hyaluronidase • Margetuximab • Fam-Trastuzumab Deruxtecan • Ado-Trastuzumab Emtansine (T-DM1) • Neratinib • Tucanitib
Triple Negative Breast Cancer	• Sacituzumab Govitecan • Pembrolizumab
Germline Mutant *BRCA1* or *BRCA2* Breast Cancer	• Olaparib • Talazoparib
Multiple Subtypes	• Nab-Paclitaxel
Hormone Receptor-Positive Breast Cancer	• Palbociclib • Abemaciclib • Ribociclib • Elacestrant • Everolimus • Alpelisib

Komen's research investment played a role in the development of all 19 breast cancer drugs approved by the FDA in the last 15 years.

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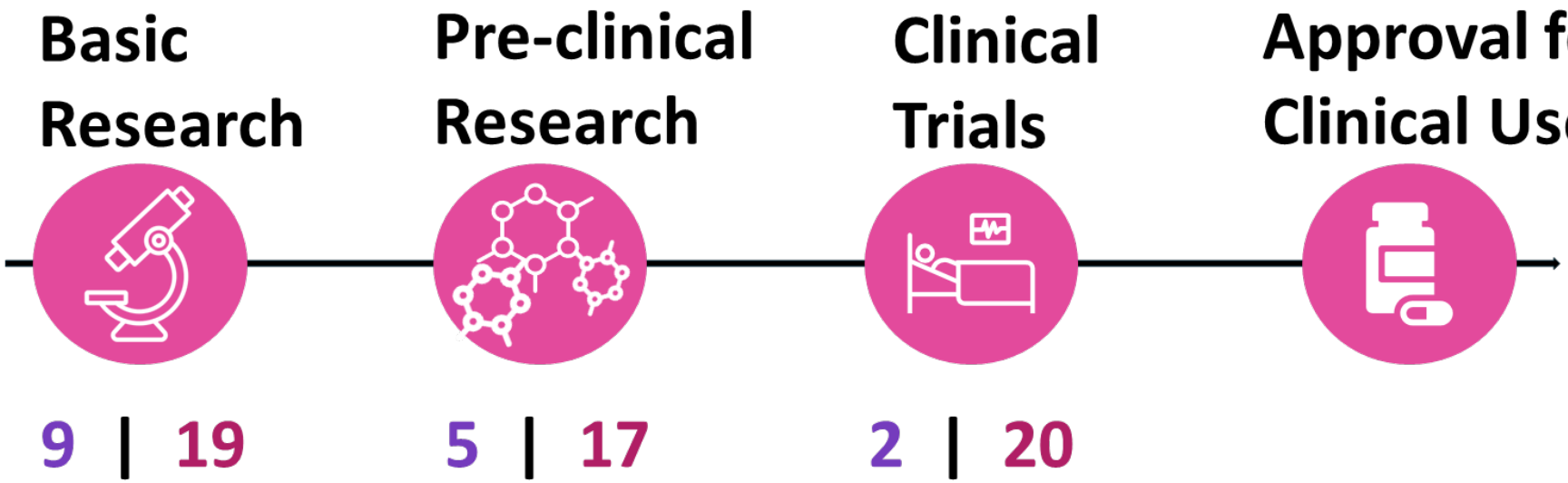
Results



Key:

Of 19 drugs reviewed...
11 Drugs had at least one **direct** Komen Touchpoint
or
All 19 Drugs had at least one **indirect** Komen Touchpoint

Direct Komen Touch Point
Komen-funded study or trial
- *Investment in Studies*

Indirect Komen Touch Point
Komen-funded associated key personnel prior to or during published study or trial period
- *Investment in People*

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Conclusion

- Using this method, we were able to pinpoint the precise role of Komen research funding for each drug along the research pipeline from basic and pre-clinical research, to clinical trials and FDA approval.

- Komen research funding has directly and/or indirectly impacted FDA approval of all 19 breast cancer drugs approved from 2009-2023, demonstrating that Komen is advancing breast cancer clinical care by bringing more treatments to the clinic, a message that should resonate with donors, patients, our partners, and the public.

- The concentration of direct Komen touchpoints in basic research reflects the importance Komen places on cutting edge discovery science that is crucial for discovery and development of drug targets which translate into new treatments for breast cancer.

- The concentration of indirect Komen touchpoints in clinical trials reflects how Komen-supported investigators make significant contributions to translation of discovery science to the clinic as leaders in the field.

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Highlights

Komen funded Leadership Grantee's research on hereditary breast cancer – contributed to Phase III trial that led to approval of Olaparib's.

Co-investigator on Komen-funded Promise Grant testing PARP inhibitors in *BRCA* mutant breast cancer prevention – contributed to Phase II trial that led to approval of Talazoparib.

Early Award Grantee found link between *HER2* gene amplification and poor outcomes in human breast cancers with collaborator in a Basic Research study that led to discovery and approval of multiple HER2-targeted therapies.

An investigator supported by a Komen Postdoctoral Fellowship and a Career Catalyst Grant later contributed to clinical trials that led to approval of Ribociclib, Sacituzumab Govitican, and Elacestrant.